harman/kardon Service Manual

AVR247/230

5 x 50W 7.1 CHANNEL A/V RECEIVER

CONTENTS

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ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field effect transistors and semiconductor "chip" components.

The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge build-up or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical change sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material.)
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   CAUTION : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together or your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES devices.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing.

Components identified with the IEC symbol ⚠ in the parts list are special significance to safety. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings or resistance, wattage, or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before retuming the product to the customer.

Technical Specifications

Audio Section

Stereo Mode

Continuous Average Power (FTC)

65 Watts per channel, 20Hz–20kHz,
@ < 0.07% THD, both channels driven into 8 ohms

7 Channel Surround Modes

Power Per Individual Channel

Front L&R channels:
50 Watts per channel,
@ < 0.07% THD, 20Hz–20kHz into 8 ohms

Center channel:
50 Watts, @ < 0.07% THD, 20Hz–20kHz into 8 ohms

Surround (L & R Side, Back) channels:
50 Watts per channel,
@ < 0.07% THD, 20Hz–20kHz into 8 ohms

Input Sensitivity/Impedance	
Linear (High Level)	200mV/47kohms
Signal-to-Noise Ratio (IHF-A)	100dB
Surround System Adjacent Channel Separation	
Analog Decoding (Pro Logic, etc.)	40dB
Dolby Digital (AC-3)	55dB
DTS	55dB
Frequency Response	
@ 1W (+0dB, –3dB)	10Hz–130kHz
High Instantaneous Current Capability (HCC)	±35 Amps
Transient Intermodulation Distortion (TIM)	Unmeasurable
Rise Time	16 µsec
Slew Rate	40V/µsec**

FM Tuner Section

Frequency Range	87.5–108MHz
Usable Sensitivity	IHF 1.3 µV/13.2dBf
Signal-to-Noise Ratio	Mono/Stereo: 70/68dB (DIN)
Distortion	Mono/Stereo: 0.2/0.3%
Stereo Separation	40dB @ 1kHz
Selectivity	±400kHz: 70dB
Image Rejection	80dB
IF Rejection	90dB

AM Tuner Section

Frequency Range	522–1620kHz
Signal-to-Noise Ratio	45 dB
Usable Sensitivity	Loop: 500 µV
Distortion	1kHz, 50% Mod: 0.8%
Selectivity	±10kHz: 30dB

Video Section

Video Format	PAL/NTSC
Input Level/Impedance	1Vp-p/75 ohms
Output Level/Impedance	1Vp-p/75 ohms
Video Frequency Response (Composite and S-Video)	10Hz–8MHz (-3dB)
Video Frequency Response (Component)	10Hz–100MHz (-3dB)
HDMI™	Audio and video processing

General

Power Requirement	AC 220–240V/50Hz
Power Consumption	65W idle, 540W maximum (7 channels driven)
Dimensions (Max)	
Width	440mm
Height	165mm
Depth	382mm
Weight	13.6 kg

Depth measurement includes knobs, buttons and terminal connections.
Height measurement includes feet and chassis.
All features and specifications are subject to change without notice.

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Blu-ray Disc is a trademark of the Blu-ray Disc Association.

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Cirrus is a registered trademark of Cirrus Logic Corp.

**Without input anti slewing and output isolation networks.

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Troubleshooting Guide

SYMPTOM	CAUSE	SOLUTION
Unit does not function when **Main Power Switch** 1 is pushed	• No AC Power	• Make certain AC power cord is plugged into a live outlet • Check to see if outlet is switch controlled
Display lights, but no sound or picture	• Intermittent input connections • **Mute** is on • Volume control is down	• Make certain that all input and speaker connections are secure • Press **Mute** button 39 • Turn up volume control
No sound from any speaker; light around **Power switch** 2 is red	• Amplifier is in protection mode due to possible short • Amplifier is in protection mode due to internal problems	• Check speaker-wire connections for shorts at receiver and speaker ends • Contact your local Harman Kardon service depot
No sound from surround or center speakers	• Incorrect surround mode • Input is mono • Incorrect configuration • Stereo or Mono program material	• Select a mode other than Stereo • There is no surround information from mono sources (except with Theater and Hall surround modes) • Check speaker mode configuration • Some surround modes may not create rear-channel information from nonencoded programs
Unit does not respond to remote commands	• Weak batteries in remote • Wrong device selected • **Remote sensor** 24 is obscured	• Change remote batteries • Press the **AVR Selector** 6 • Make certain front-panel sensor is visible to remote or connect remote sensor
Intermittent buzzing in tuner	• Local interference	• Move unit or antenna away from computers, fluorescent lights, motors or other electrical appliances
Letters flash in the **Channel Indicator Display** 14 and Digital Audio stops	• Digital audio feed paused	• Resume play for DVD • Check that Digital Signal is fed to the Digital Input selected

Processor Reset

In the rare case where the unit's operation or the displays seem abnormal, the cause may involve the erratic operation of the system's memory or microprocessor.

To correct this problem, first unplug the unit from the AC wall outlet and wait at least three minutes. After the pause, reconnect the AC power cord and check the unit's operation. If the system still malfunctions, a system reset may clear the problem.

To clear the AVR's entire system memory including tuner presets, output level settings, delay times and speaker configuration data, first put the unit in Standby by pressing the **System Power Control** button 2. Next press and hold the **Tone Mode button** 8 for three seconds.

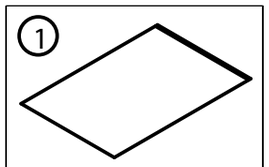
The unit will turn on automatically. Note that once you have cleared the memory in this manner, it is necessary to re-establish all system configuration settings and tuner presets.

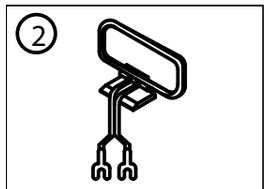
NOTE: Resetting the processor will erase any configuration settings you have made for speakers, output levels, surround modes, digital input assignments as well as the tuner presets. After a reset the unit will be returned to the factory presets, and all settings for these items must be reentered.

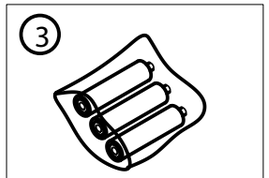
If the system is still operating incorrectly, there may have been an electronic discharge or severe AC line interference that has corrupted the memory or microprocessor.

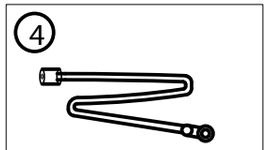
If these steps do not solve the problem, consult an authorized Harman Kardon service depot.

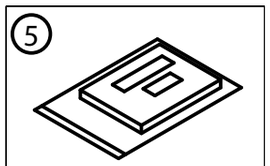
1. Instruction manual ass'y - Accessories

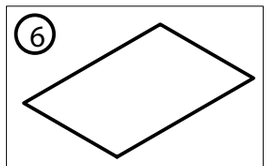


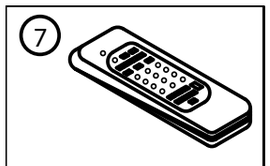


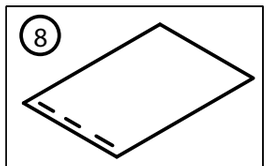


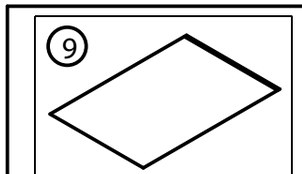


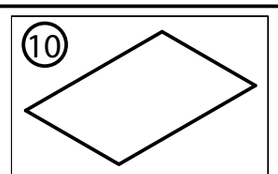


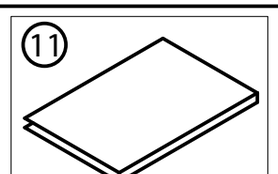


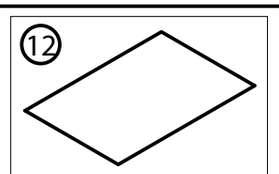


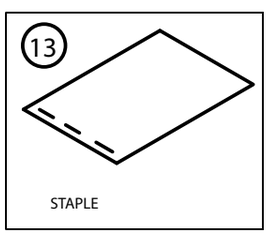


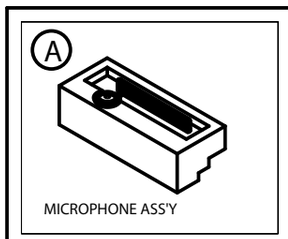












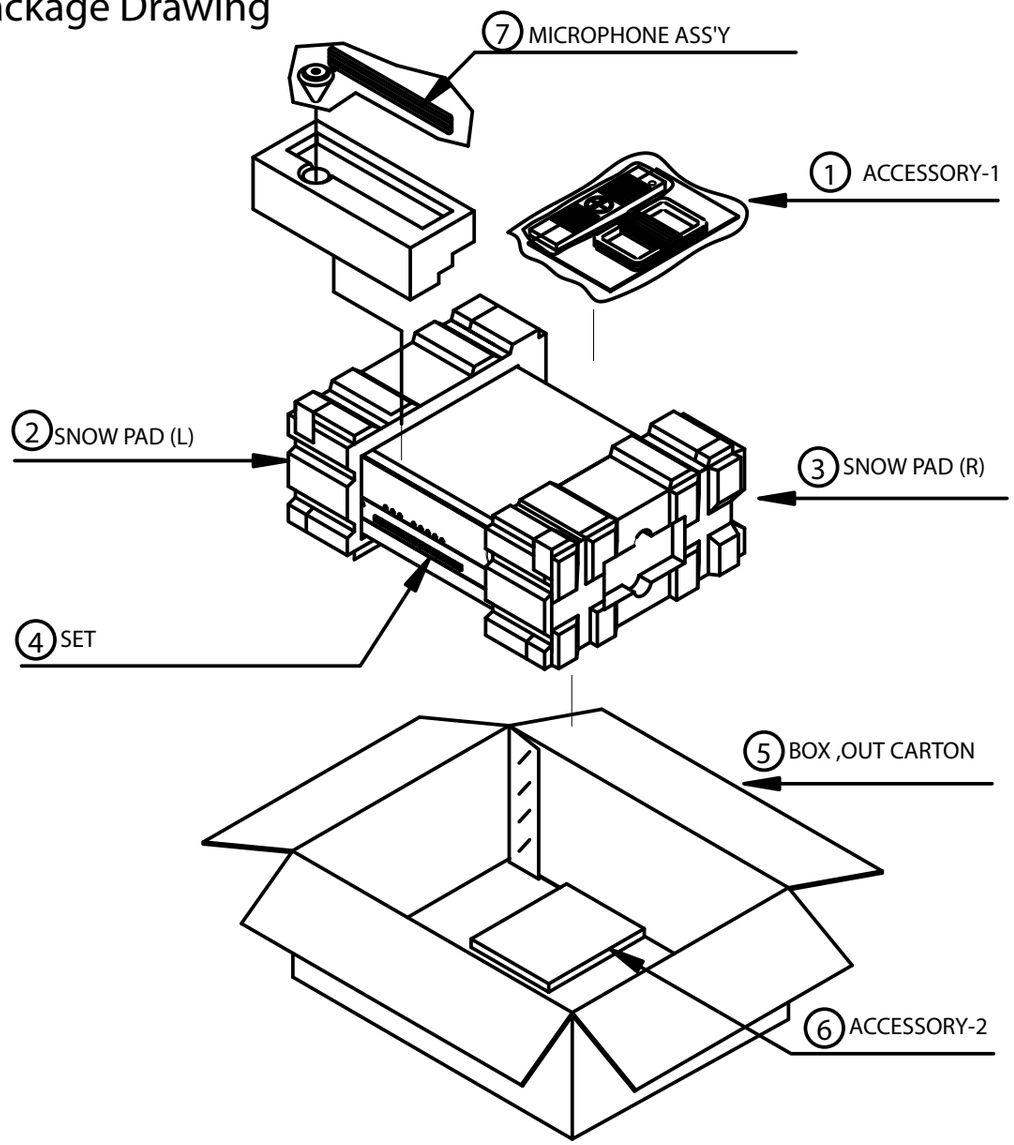
ACCESSORY-1				
NO		DESCRIPTION	PARTS NO.	Q,ty
1		POLY BAG	CPB1061W	1
2		AM LOOP ANTENNA ASS'Y	CSA1A027Z	1
3		BATTERY	CABR03P3	3
4		FM 1 POL ANT	CSA1A018Z	1
5		COVER ASS'Y	CGRAVR130/230ZA	1
	1	COVER A	CGR1A331M7H43	1
	2	COVER B	CGR1A332M7H43	1
	3	SHEET,FRONT COVER	CQE1A220Z	1
	4	PAD , COVER	CPS1A676	1
	5	BAG , POLY	CPB1A176Z	1
6		IMAGE BROCHURES	HQE1A273Z	1
7		REMOCON ASS'Y	CARTAVR247/230	1
8		STAPLE	CPL0905	3

ACCESSORY-2			
NO	DESCRIPTION	PARTS NO.	Q,ty
9	POLY BAG	CPB1061W	1
10	BOOKLET,INFORMATION	CQE1A180Z	1
11	MANUAL,INSTRUCTION	CQX1A1255Z	1
12	MANUAL ,SETUP GUIDE	CQX1A1256Z	1
13	STAPLE	CPL0905	3

A	MICROPHONE ASS'T	CJXAVR340MICRO	1

AVR247/230

2. Package Drawing

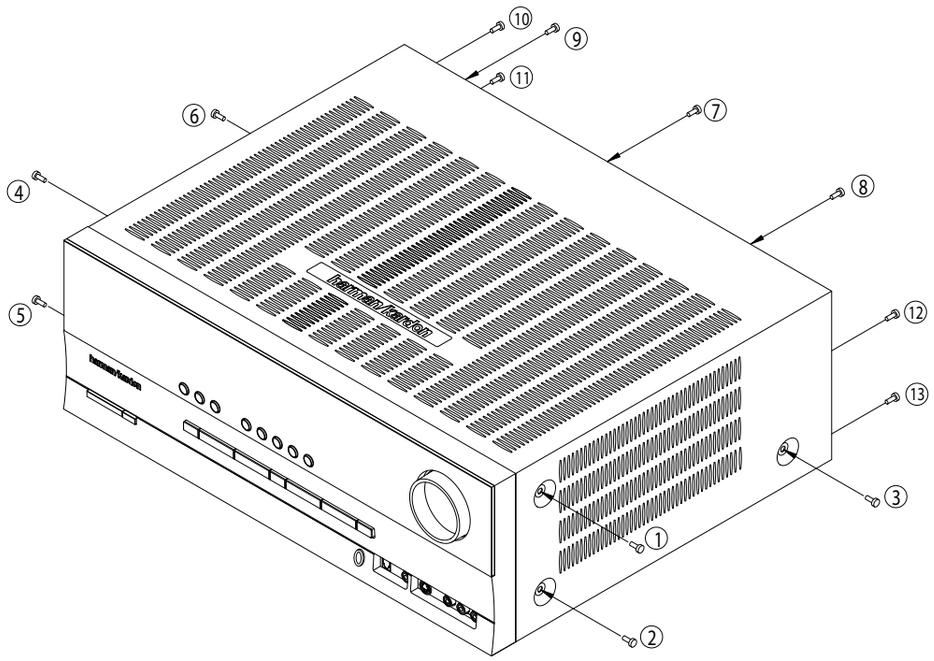


NO	DESCRIPTION	PARTS NO.	Q,ty
1	ACCESSORY-1	CQXAVR247/230	1
2	SNOW,PAD(L)	CPS6A564	1
3	SNOW,PAD(R)	CPS6A565	1
4	SET	AVR247/230SET	1
5	BOX,OUT CARTON	CPG1A822U	1
6	ACCESSORY-2	CQXAVR247/230	1
7	MICROPHONE ASS'Y	CJXAVR340MICRO	1

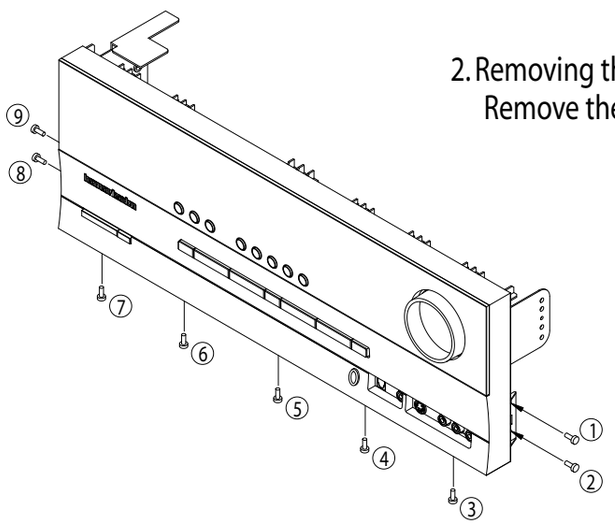
DISASSEMBLY

AVR247/230

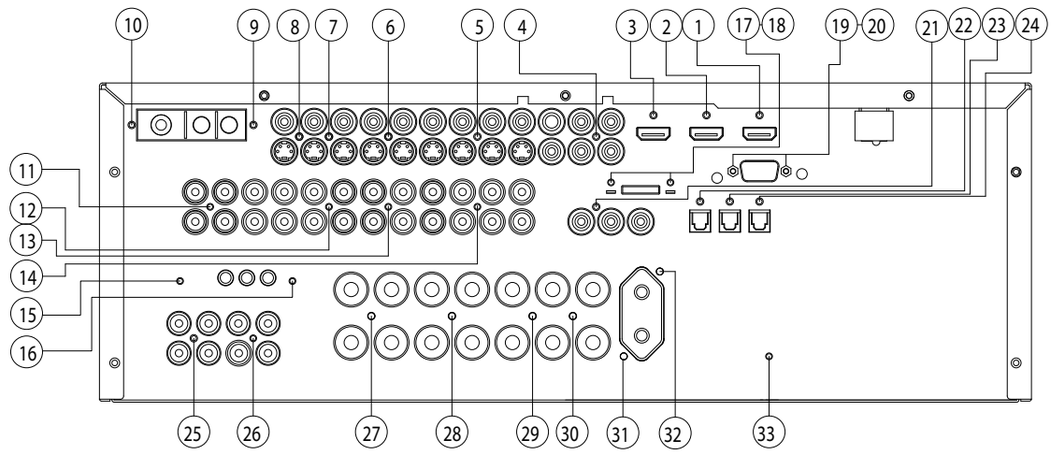
1. Removing the Top Cabinet
Remove the Screws ①~⑬



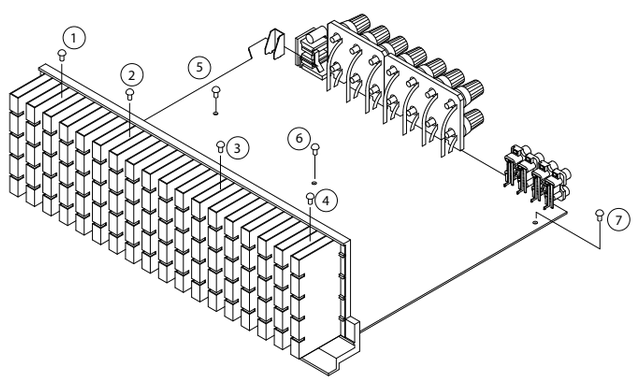
2. Removing the Front Panel
Remove the Screws ①~⑨



3. Removing the Rear Panel
Remove the Screws ①~㉝



4. Removing the Main PCB
Remove the Screws ①~⑦



DISASSEMBLY PROCEDURES (AVR247)

<1> TOP-CABINET(21) REMOVAL

1. Remove 13 screws(S1,S7) and then remove the Top-cabinet.

<2> FRONT PANEL ASS'Y REMOVAL

1. Remove the Top-cabinet, referring to the previous step<1>.
2. Disconnect the card cable between connector(CN72-17p) on the Fip PCB(37-1) and connector(CN72) on the Input PCB(39-1).
3. Disconnect the lead wire(BN81-8P) on the Fip PCB(37-1) from connector(CN81) on the Trans PCB(40-4).
4. Disconnect the lead wire(BN22-6P) on the Phone PCB(37-5) from connector(CN22) on the Input PCB(39-1).
5. Disconnect the lead wire(BN18-5P) on the Phone PCB(37-5) from connector(CN18) on the Input PCB(39-1).
6. Disconnect the lead wire(BN10-4P) on the Volume PCB(37-6) from connector(CN10) on the Input PCB(39-1).
7. Disconnect the lead wire(BN41-6P) on the Volume PCB(37-6) from connector(CN41) on the Video PCB(41).
8. Disconnect the lead wire(BN90-2P) on the Main PCB(38-1) from connector(CN86) on the Moms PCB(37-4).
9. Remove 1 screw(S10) and then lead wire(JW82-1P,JW83-1P) on the Phone PCB(37-5).
10 .Remove 1screw(S10) and then lead wire(JW84-1P) on the Volume PCB(37-3).
11. Remove 10 screws(S1) and then remove the Front Panel ASS'Y.

<3> Volume PCB(37-6) REMOVAL

1. Remove the Top-cabinet, referring to the previous step<1>.
2. Remove the Front Panel ASS'Y, referring to the previous step<2>.
3. Pull out the Volume Knob ASS'Y.
4. Disconnect connector(CN84) on the Volume PCB(37-6) from the lead wire(BN84-5P) on the Fip PCB(37-1).
5. Disconnect the lead wire(BN92-5P)on the Volume PCB(37-6) from connector(CN92) on the Phone PCB(37-5).
6. Remove 8 screws(S2,S14), and then remove the Volume PCB(37-6).

<4>PHONE PCB(37-5) REMOVAL

1. Remove the Top-cabinet, referring to the previous step<1>.
2. Remove the Front Panel ASS'Y, referring to the previous step<2>.
3. Disconnect connector(CN92) on the Phone PCB(37-5) from the lead wire(BN92-5P) on the Volume PCB(37-6).
4.. Disconnect connector(CN85)on the Phone PCB(37-5) from the lead wire(BN85-3P) on the Fip PCB(37-1).
5. Remove 2 screws(S2) and then remove the Phone PCB(37-5).

<5>POWER LED PCB(37-3) REMOVAL

1. Remove the Top-cabinet, referring to the previous step<1>.
2. Remove the Front Panel ASS'Y, referring to the previous step<2>.
3. Disconnect connector(CN88) on the Power Led PCB(37-3) from the lead wire(BN88-4P) on the Fip PCB(37-1) .
4. Remove 2 screws(S2) and then remove the Power led PCB(37-3).

<6>FIP PCB(37-1) REMOVAL

1. Remove the Top-cabinet, referring to the previous step<1>.
2. Remove the Front Panel ASS'Y, referring to the previous step<2>.
3. Disconnect the lead wire(BN84-5P) on the Fip PCB(37-1) from connector(CN84) on the Volume PCB(37-6).
4. Disconnect the lead wire(BN85-3P) on the Fip PCB(37-1) from connector(CN85) on the Phone PCB(37-5).
5. Disconnect the lead wire(BN88-4P) on the Fip PCB(37-1) from connector(CN88) on the Power Led PCB(37-3).

6. Disconnect the connector (CN89) on the Fip PCB(37-1) from lead wire(BN89-4P) on the Key PCB(37-2).
7. Remove 3 screws(S2) and then remove the Guide PCB(37-8) & the Fip PCB(37-1).

<7>KEY PCB(37-2) REMOVAL

1. Remove the Top-cabinet, referring to the previous step<1>.
2. Remove the Front Panel ASS'Y, referring to the previous step<2>.
3. Remove the Fip PCB(37-1), referring to the previous step<6>.
4. Remove 10 screws(S2) and then remove the Key PCB(37-2).

<8>TUNER MODULE(44) REMOVAL

1. Remove the Top-cabinet, referring to the previous step<1>.
2. Disconnect the card cable between connector(CON1-13P) on the Tuner module(44)
   and connector(CN13) on the Input PCB(39-1).
3. Remove 2 screws(S8) and then remove the Tuner Module(44).

<9>HUDSON PCB(42) REMOVAL

1. Remove the Top-cabinet, referring to the previous step<1>.
2. Disconnect connector(CN80) on the HUDSON PCB(42) from the lead wire(BN80-3P) on the RS232 PCB(37-7).
3. Remove 3 screws(S15).
4. Disconnect the board to board connector between and connector(CN81-44P) on the HUDSON PCB(42)
   and connector(BN81-44P) on VIDEO PCB(41) and then remove the HUDSON PCB(42).

<10>VIDEO PCB(41) REMOVAL

1. Remove the Top-cabinet, referring to the previous step<1>.
2. Remove the Hudson PCB(42), referring to the previous step<9>.
3. Disconnect the card cable between connector(BN14-17p) on the Video PCB(41)
   and connector(CN14) on the Input PCB(39-1).
4. Disconnect connector(CN43) on the Video PCB(41)
   from the lead wire(BN43-3P) on the Regulator PCB(A)(40-2).
5. Disconnect connector(CN41) on the Video PCB(41) from the lead wire(BN41-6P) on the Volume PCB(37-6).
6. Disconnect the card cable between connector(CN42) on the Video PCB(41)
   and connector(BN44-7P) on the iPod PCB(39-2).
7. Disconnect the card cable between connector(BN15-15P) on the Video PCB(41)
   and connector(CN15-15P) on the INPUT PCB(39-1).
8. Remove 6 screws(S8) and then remove the Video PCB(41).

<11>iPod PCB(39-2) REMOVAL

1. Remove the Top-cabinet, referring to the previous step<1>.
2. Remove the Hudson PCB(42), referring to the previous step<9>.
3. Remove the Video PCB(41), referring to the previous step<10>
4. Disconnect the card cable between connector(BN19-15P) on the the iPod PCB(39-2)
   and connector(CN19) on the Input PCB(39-1).
5. Disconnect the card cable between connector(BN44-7P) on the iPod PCB(39-2)
   and connector(CN42) on the Video PCB(41).
6. Disconnect the card cable between connector(CN47-7P) on the iPod PCB(39-2)
   and connector(CN47) on the RS232 PCB(37-7).
7. Disconnect the board to board connector between and connector(CN23) on the XM PCB(39-4)
   and connector(BN17-12P) on the iPod PCB(39-2).

8. Remove 2 screws(S13) and then remove the iPod PCB(39-2).

<12>XM PCB(39-4) REMOVAL

1. Remove the Top-cabinet, referring to the previous step<1>.
2. Remove the Hudson PCB(42), referring to the previous step<9>.
3. Remove the Video PCB(41), referring to the previous step<10>
4. Disconnect the card cable between connector(BN21-7P) on XM PCB(39-4) and connector(CN21) on the input PCB(39-1).
5. Disconnect the lead wire(BN85-2P) on the XM PCB(39-4) from connector(CN85) on the Regulator PCB(A)(40-2).
6. Disconnect the board to board connector between and connector(CN23) on the XM PCB(39-4) and connector(BN17-12P) on the iPod PCB(39-2).
7. Remove 1 screws(S15) and then remove the XM PCB(39-4).

<13>RS232 PCB(37-7) REMOVAL

1. Remove the Top-cabinet, referring to the previous step<1>.
2. Remove the Hudson PCB(42), referring to the previous step<9>.
3. Remove the Video PCB(41), referring to the previous step<10>.
4. Disconnect the card cable between connector(CN47-7P) on the iPod PCB(39-2) and connector(CN47) on the RS232 PCB(37-7).
5. Remove 2 screws and then remove the RS232 PCB(37-7).

<14>INPUT PCB(39-1) REMOVAL

1. Remove the Top-cabinet, referring to the previous step<1>.
2. Remove the Tuner module(44), referring to the previous step<8>.
3. Remove the Hudson PCB(42), referring to the previous step<9>.
4. Remove the Video PCB(41), referring to the previous step<10>.
5. Disconnect connector(CN20) on the the Input PCB(39-1) from the lead wire(BN20-5P) on the Regulator PCB(B)(40-5).
6. Disconnect connector(CN22) on the Input PCB(39-1) from the lead wire(BN22-6P) on the Phone PCB(37-5).
7. Disconnect connector(CN18) on the Input PCB(39-1) from the lead wire(BN18-5P) on the Phone PCB(37-5)
8. Disconnect connector(CN10) on the Input PCB(39-1) from the lead wire(BN10-4P) on the Volume PCB(37-6).
9. Disconnect the card cable between connector(CN14) on the Input PCB(39-1). and connector(BN14-17P) on the Video PCB(41).
10. Disconnect the card cable between connector(CN19) on the Input PCB(39-1) and connector(BN19-15P) on the I-Pod PCB(39-2).
11. Disconnect the card cable between connector(CN21) on the input PCB(39-1) and connector(BN21-7P) on XM PCB(43).
12. Disconnect the card cable between connector(CN12-21p) on the Input PCB(39-1) and connector(CN12-21p)) on the main PCB(38-1)
13. Disconnect the card cable between connector(CN11-17p) on the Input PCB(39-1) and connector(CN11) on the main PCB(38-1)
14. Disconnect the card cable between connector(CN72) on the Input PCB(39-1) and connector(CN72-17p) on the Fip PCB(37-1)
15. Remove 11 screws(S8,S15) and then remove the Input PCB(39-1).

<15>POWER TRANS(36) & POWER PCB ASS'Y(40) REMOVAL

1. Remove the Top-cabinet, referring to the previous step<1>.
2. Disconnect lead wire of the Power Trans(36) from connector (CN91-3P) on the Main PCB(38-1)
3. Disconnect connector(CN19-3P,CN20-4P) on TRANS PCB(40-3)

from the lead wire(BN19-3P,BN20-4P) on the Main PCB(38-1).

4. Disconnect the lead wire(BN96-8P) on the Power PCB(40-4)
from connector(CN96) on the Regulator PCB(B)(40-5).
5. Disconnect the lead wire(BN99-8P) on the Power PCB(40-4)
from connector(CN99) on the Regulator PCB(A)(40-2).
6. Disconnect connector(CN81) on the Trans PCB(40-4) from the lead wire(BN81-8P) on the Fip PCB(37-1).
7. Remove 4 Trans screws(S9) and then remove the Power Trans(36)& Power PCB ASS'Y(40) REMOVAL .

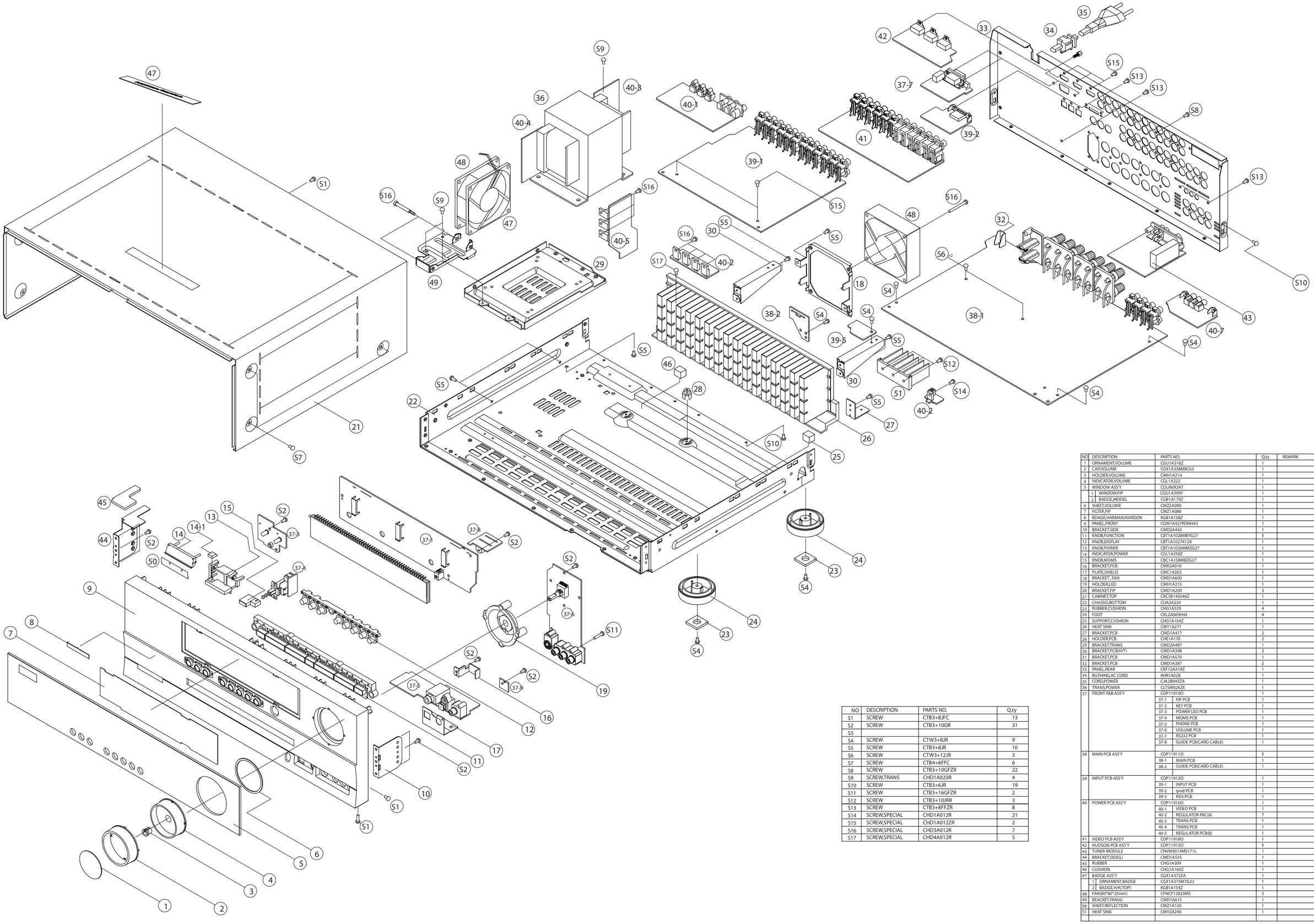
<16>REMOTE PCB ASS'Y(40-7) REMOVAL

1. Remove the Top-cabinet, referring to the previous step<1>.
2.Disconnect connector(CN88) on the remote PCB(40-7) from the lead wire(BN88-6P) on the Main PCB(38-1)
3. Remove 3screws(S13) and then remove the Remote PCB ASS'Y(40-7).

<17>MAIN PCB ASS'Y(38-1) REMOVAL

1. Remove the Top-cabinet, referring to the previous step<1>.
2. Remove the Tuner module(44), referring to the previous step<8>.
3. Remove the Hudson PCB(42), referring to the previous step<9>.
4. Remove the Video PCB(41), referring to the previous step<10>.
5. Remove the iPod PCB(39-2), referring to the previous step<11>.
6. Remove the XM PCB(39-4), referring to the previous step<12>.
7. Remove the RS232 PCB(37-7), referring to the previous step<13>.
8. Remove the Input PCB(39-1), referring to the previous step<14>.
9. Remove the AC Cord(35) on the Main PCB(38-1)
10. Disconnect the lead wire(BN90-2P) on the Main PCB(38-1) from connector(CN86) on Moms PCB(37-4).
11. Disconnect connector (CN91-3P) on the Main PCB(38-1) from lead wire of the Power Trans(36)
12. Disconnect the lead wire(BN89-2P) on the Main PCB(38-1)
from connector(CN89) on Regulator PCB(A)(40-2).
13. Disconnect the lead wire(BN19-3P,BN20-4P) on the Main PCB(38-1)
from connector(CN19-3P,CN20-4P) on TRANS PCB(40-4).
14. Disconnect the lead wire(BN88-6P) on the Main PCB(38-1) from connector(CN88) on remote PCB(40-7).
15. Disconnect the lead wire of the DC, FAN(49) from connector(CN89-2P) on the Main PCB(38-1).
16. Remove 11screws(S13-1EA, S4-2EA, S6-2EA, S8-6EA) and then remove the Main PCB ASS'Y(38-1).

AVR247/230 EXPLODED VIEW



NO	DESCRIPTION	PARTS NO.	Q.ty
S1	SCREW	CTB3+8JFC	13
S2	SCREW	CTB3+10GR	31
S3			
S4	SCREW	CTW3+8JR	9
S5	SCREW	CTB3+8JR	10
S6	SCREW	CTW3+12JR	3
S7	SCREW	CTB4+6FFC	6
S8	SCREW	CTB3+10GFZR	22
S9	SCREW,TRANS	CHD1A023R	4
S10	SCREW	CTB3+6JR	19
S11	SCREW	CTB3+16GFZR	2
S12	SCREW	CTB3+10JRR	3
S13	SCREW	CTB3+8FFZR	8
S14	SCREW,SPECIAL	CHD1A012R	21
S15	SCREW,SPECIAL	CHD1A012ZR	2
S16	SCREW,SPECIAL	CHD3A012R	7
S17	SCREW,SPECIAL	CHD4A012R	5

NO	DESCRIPTION	PARTS NO.	Q.ty	REMARK
1	ORNAMENT,VOLUME	CGU1A318Z	1	
2	CAP,VOLUME	CGX1A338MBC63	1	
3	HOLDER,VOLUME	CMH1A214	1	
4	INDICATOR,VOLUME	CGL1A222	1	
5	WINDOW ASS'Y	CGUWR247	1	
	1 WINDOW,FIP	CGU1A399Y	1	
	2 BADGE,MODEL	CGB1A179Z	1	
6	SHEET,VOLUME	CMZ2A090	1	
7	FILTER,FIP	CMZ1A088	1	
8	BDAGE,HARMAN/KARDON	KGB1A158Z	1	
9	PANEL,FRONT	CGW1A427RDNH43	1	
10	BRACKET,SIDE	CMD2A443	1	
11	KNOB,FUNCTION	CBT1A1028MBYG27	1	
12	KNOB,DISPLAY	CBT1A1027K128	1	
13	KNOB,POWER	CBT1A1026MMZG27	1	
14	INDICATOR,POWER	CGL1A258Z	1	
15	KNOB,MOMS	CBC1A158MBZG27	1	
16	BRACKET,PCB	CMK2A010	1	
17	PLATE,SHIELD	CMC1A302	1	
18	BRACKET , FAN	CMD1A600	1	
19	HOLDER,LED	CMH1A215	1	
20	BRACKET,FIP	CMD1A209	3	
21	CABINET,TOP	CXCSB145S46Z	1	
22	CHASSIS,BOTTOM	CUA3A229	1	
23	RUBBER,CUSHION	CHG1A329	4	
24	FOOT	CKL2A069H43	4	
25	SUPPORT,CUSHION	CHG1A104Z	1	
26	HEAT SINK	CMY1A271	1	
27	BRACKET,PCB	CMD1A417	2	
28	HOLDER,PCB	CHE1A170	2	
29	BRACKET,TRANS	CMD2A487	1	
30	BRACKET,PCB(H/T)	CMD1A398	2	
31	BRACKET,PCB	CMD1A570	1	
32	BRACKET,PCB	CMD1A387	2	
33	PANEL,REAR	CKF12A319Z	1	
34	BUSHING,AC CORD	KHR1A028	1	
35	CORD,POWER	CJA28043ZA	1	
36	TRANS,POWER	CLT5W026ZE	1	
37	FRONT PAB ASS'Y	COP11910O	1	
	37-1 FIP PCB		1	
	37-2 KEY PCB		1	
	37-3 POWER LED PCB		1	
	37-4 MOMS PCB		1	
	37-5 PHONE PCB		1	
	37-6 VOLUME PCB		1	
	37-7 RS232 PCB		1	
	37-8 GUIDE PCB(CARD CABLE)		1	
38	MAIN PCB ASS'Y	COP11911O	1	
	38-1 MAIN PCB		1	
	38-2 GUIDE PCB(CARD CABLE)		1	
39	INPUT PCB ASS'Y	COP11913O	1	
	39-1 INPUT PCB		1	
	39-2 ipod PCB		1	
	39-5 RDS PCB		1	
40	POWER PCB ASS'Y	COP11916O	1	
	40-1 VIDEO PCB		1	
	40-2 REGULATOR PAC(A)		7	
	40-3 TRANS PCB		1	
	40-4 TRANS PCB		1	
	40-5 REGULATOR PCB(B)		1	
41	VIDEO PCB ASS'Y	COP11918O	1	
42	HUDSON PCB ASS'Y	COP11915O	1	
43	TUNER MODULE	CNVM9014MS171L	1	
44	BRACKET,SIDE(L)	CMD1A555	1	
45	RUBBER	CHG1A309	1	
46	CUSHION	CHG1A160Z	1	
47	BADGE ASS'Y	CGX1A375ZA	1	
	1 ORNAMENT,BADGE	CGX1A375M7G32	1	
	2 BADGE,H/K(TOP)	KGB1A159Z	1	
48	FAN(80*80*25mm)	CFNCF12825MS	2	
49	BEACKET,FAN(A)	CMD1A615	1	
50	SHEET,REFLECTION	CMZ1A120	1	
51	HEAT SINK	CMY2A249	1	

AVR247/230 Electrical Parts List

Ref. #	Part Number	Description	Value	Qty
	CGL1A222	INDICATOR , VOLUME	INDICATOR	1
	CGUAVR247/230	WINDOW ASS'Y	ASS'Y	1
	CGB1A179Z	BADGE, HARMAN(AVR247/230)	BADGE	1
	CGU1A399Y	WINDOW , FIP	FIP WINDOW	1
	CGU1A318Z	ORNAMENT , VOLUME	ORANMENT	1
	CGX1A338MBC63	CAP , VOLUME	CAP	1
	CGX1A375ZA	BADGE ASS'Y	ASS'Y	1
	CHE36-3	CLAMPER , WIRE	CLAMPER	1
	CKC5B145S46Z	CABINET , TOP	TOP CABINEET	1
	BKC5C145S46	CABINET , TOP	TOP CABINEET	1
	CLZ9Z028Z	FERRITE CORE(21.2X6.4X12.7)	FERRITE CORE	3
	CMH1A214	HOLDER , VOLUME	HOLDER	1
	CMZ2A090	SHEET , VOLUME	SHEET	1
	CQB1A549Y	LABEL , ATTENTION DVD48	LABEL	1
	CQB1A551Z	LABEL , BAR CODE	LABEL	1
	CQB1A622	LABEL , SERIAL NO	LABEL	1
	CQB1A797Z	LABEL , HDMI	LABEL	2
	CTB3+8JFC	SCREW	SCREW	13
	CTB4+6FFC	SCREW	SCREW	6
	CHE154	CLAMPER , ARM	CLAMPER	0,12
	CJXAVR340MICRO	MICRO PHONE ASS'Y	ASS'Y	1
	CPG1A822U	BOX , OFFSET CARTON	BOX	1
	CPP1A081Z	BAG,POLY SET	BAG	1
	CPS6A564	PAD , SNOW L	SNOW PAD	1
	CPS6A565	PAD , SNOW R	SNOW PAD	1
	CQB1A551Z	LABEL , BAR CODE	LABEL	2
	CQB1A795Z	LABEL , COUNTRY AVR245/230	LABEL	2
	CQS1A001	RIBON , BAR CODE	SONY(TR-4070)	0,12
	CQXAVR247/230	INSTRUCTION MANUAL ASS'Y	ASS'Y	1
	CABR03P3	BATTERY (SIZE 'AAA') 3PCS IN 1	BATTERY	3
	CARTAVR247/230	REMOCON TRANSMITTER ASS'Y	ASS'Y	1
	CGRAVR130/230ZA	COVER ASS'Y	ASS'Y	1
	CGR1A331M7H43	COVER A	COVER	1
	CGR1A332M7H43	COVER B	COVER	1
	CPS1A676	PAD , COVER	PAD	1
	CQE1A220Z	SHEET , FRONT COVER	SHEET	1
	CQE1A180Z	BOOKLET , IMFORMATIONS	BOOKLET	1
	CQX1A1255Z	MANUAL , INSTRUCTION AVR247/230	SHEET	1
	CQX1A1256Z	MANUAL , SET UP AVR147/230	MANUAL	1
	CSA1A018Z	FM 1 POLE ANT	ANT	1
	CSA1A027Z	AM LOOP ANT	ANT	1
	HQE1A273Z	HARMAN IMAGE BROCHURES	BROCHURES	1
	CRE1A037	LOCKER	LOCKER	14

FRONT PANEL ASSY

Ref. #	Part Number	Description	Value	Qty
	CGWAVR247/230	FRONT PANEL ASS'Y	ASS'Y	1
	CBC1A158MBZG27	KNOB , MOMS	KNOB	1
	CBT1A1026MMZG27	KNOB , POWER	KNOB	1
	CBT1A1027K128	KNOB , DISPLAY	KNOB	1
	CBT1A1028MBYG27	KNOB , FUNCTION	KNOB	1
	CGL1A258Z	INDICATOR , POWER	INDICATOR	1
	CGW1A427RDNH43	PANEL , FRONT AVR247/230	PANEL	1
	CHG1A309	RUBBER	RUBBER	1
	CHR301	CLAMPER	CLAMPER	20
	CLZ9Z028Z	FERRITE CORE(21.2X6.4X12.7)	FERRITE CORE	4
	CMC1A302	PLATE , SHIELD	PLATE	1

FRONT PANEL ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
	CMD1A555	BRACKET , SIDE (L)	BRACKET	1
	CMD2A443	BRACKET , SIDE	BRACKET	1
	CMH2A215	HOLDER , LED AVR350	HOLDER	1
	CMK2A010	BRACKET , PCB	BRACKET	1
	CMZ1A088	FILTER , FIP	FIP FILTER	1
	CMZ1A120	SHEET , REFLECTION	SHEET	1
	CTB3+10GR	SCREW	SCREW	31
	CTB3+16GFZR	SCREW	SCREW	2
	KGB1A158Z	BADGE , HARMAN/KARDON(FRONT)	BADGE	1
CB72	CWCAVR350CN72	CABLE , SHIELD CARD(17PIN, 240MM)	CARD CABLE(SHILED)	1
FRONT PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
	COP11910O	AVR247/230 FRONT PCB ASS'Y	ASS'Y	1
	CMC3A111	PLATE , EARTH	PLATE	1
	CMD1A618	BRACKET , RESET	BRACKET	1
C402	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C403	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C714	HCBS1H151KBT	CAP , CERAMIC	150UF 50V K	1
C716	CCEA1AH331T	CAP , ELECT	330UF 10V	1
C719	HCBS1H102KBT	CAP , CERAMIC	1000PF 50V K	1
C720	HCBS1H102KBT	CAP , CERAMIC	1000PF 50V K	1
C721	HCBS1H102KBT	CAP , CERAMIC	1000PF 50V K	1
C723	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
C728	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
C729	HCBS1H473ZFT	CAP , CERAMIC	0.047UF 50V Z	1
C731	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C735	CCEA1CKS100T	CAP , ELECT	10UF 16V	1
C742	HCBS1H223ZFT	CAP , CERAMIC	0.02UF 50V Z	1
C793	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
C794	HCBS1C222MXT	CAP , CERAMIC	2200PF 16V	1
C795	HCBS1H102KBT	CAP , CERAMIC	1000PF 50V K	1
C796	HCBS1H102KBT	CAP , CERAMIC	1000PF 50V K	1
C805	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z	1
C806	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z	1
C807	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
C808	HCBS1H181KBT	CAP , CERAMIC	180PF 50V	1
C809	CCEA1AH471T	CAP , ELECT	470PF 10V	1
C812	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
C817	HCBS1H100JCT	CAP , CERAMIC	10PF 50V	1
C820	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C821	CCEA1EH470T	CAP , ELECT	47UF 25V	1
C822	CCEA1EH470T	CAP , ELECT	47UF 25V	1
C823	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C824	HCBS1H471KBT	CAP , CERAMIC	470PF 50V	1
C825	HCBS1H151KBT	CAP , CERAMIC	150PF 50V	1
C828	HCBS1H470JT	CAP , CERAMIC	47PF 50V	1
C830	HCBS1H473ZFT	CAP , CERAMIC	0.047F 50V	1
C841	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C842	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C843	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C850	HCBS1H471KBT	CAP , CERAMIC	470PF 50V	1
C851	HCBS1H471KBT	CAP , CERAMIC	470PF 50V	1
C852	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
C855	HCBS1H101KBT	CAP , CERAMIC	100PF 50V K	1
C856	HCBS1H101KBT	CAP , CERAMIC	100PF 50V K	1
C857	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
C862	HCBS1H101KBT	CAP , CERAMIC	100PF 50V K	1

FRONT PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
C863	HCBS1H101KBT	CAP , CERAMIC	100PF 50V K	1
C866	CCEA1HKS100T	CAP , ELECT	10UF 50V SMALL SIZE	1
C867	CCEA1HKS100T	CAP , ELECT	10UF 50V SMALL SIZE	1
C868	CCEA1EKS470T	CAP , ELECT	47UF 25V	1
C869	CCEA1EKS470T	CAP , ELECT	47UF 25V	1
C870	HCBS1H681KBT	CAP , CERAMIC	680PF 50V K	1
C871	HCBS1H681KBT	CAP , CERAMIC	680PF 50V K	1
C872	CCEA1CH331T	CAP , ELECT	330UF 16V	1
C873	CCEA1CH331T	CAP , ELECT	330UF 16V	1
C874	HCBS1H101KBT	CAP , CERAMIC	100PF 50V K	1
C882	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
C889	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
C891	HCBS1H223ZFT	CAP , CERAMIC	0.023UF 50V Z	1
C892	HCBS1H223ZFT	CAP , CERAMIC	0.023UF 50V Z	1
C893	HCBS1H223ZFT	CAP , CERAMIC	0.023UF 50V Z	1
C894	CCEA1CKS100T	CAP , ELECT	10UF 16V	1
C896	HCBS1H223ZFT	CAP , CERAMIC	0.023UF 50V Z	1
C897	CCEA1AH471T	CAP , ELECT	470UF 10V	1
C901	HCBS1H390JT	CAP , CERAMIC	39PF 50V Z	1
C903	CCEA1HKS2R2T	CAP , ELECT	2.2UF 50V	1
C905	CCEA1HKS2R2T	CAP , ELECT	2.2UF 50V	1
C953	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
C954	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
C957	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
D455	CVD1SS133MT	DIODE	1SS133	1
D730	CVD1SS133MT	DIODE	1SS133	1
D774	CVD1SS133MT	DIODE	1SS133	1
D778	HVD1N5819T	DIODE , SCHOTTKY	1N5819	1
D784	CVD1SS133MT	DIODE	1SS133	1
D785	CVD1SS133MT	DIODE	1SS133	1
J906	CRD20TJ391T	RES , CARBON	390OHM 1/5W	1
L702	HLQ02C100KT	COIL , AXAIL	10uH	1
Q401	HVTKRC104MT	T.R	KRC104M	1
Q451	HVTKRC107MT	T.R	KRC107M	1
Q452	HVTKRA107MT	T.R	KRA107M	1
Q454	HVTKRC107MT	T.R	KRC107M	1
Q701	HVTKRC107MT	T.R	KRC107M	1
Q722	HVTKRA107MT	T.R	KRA107M	1
Q724	HVTKRC107MT	T.R	KRC107M	1
Q725	HVTKRC107MT	T.R	KRC107M	1
Q734	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
Q735	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
Q736	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
Q737	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
Q738	HVTKRC107MT	T.R	KRC107M	1
Q739	HVTKTA1271YT	T.R	KTA1271Y	1
R402	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J	1
R403	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
R404	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J	1
R452	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R453	CRD20TJ362T	RES , CARBON	3.6K OHM 1/5W J	1
R454	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
R701	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R704	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
R705	CRD20TJ820T	RES , CARBON	82 OHM 1/5W J	1
R706	CRD20TJ820T	RES , CARBON	82 OHM 1/5W J	1
R708	CRD20TJ820T	RES , CARBON	82 OHM 1/5W J	1
R709	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J	1
R710	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J	1

FRONT PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
R711	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J	1
R718	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1
R737	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
R747	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R753	CRD20TF1001T	RES , CARBON	1K /1/5W /F	1
R754	CRD20TF1501T	RES , CARBON	1.5K /1/5W /F	1
R755	CRD20TF1801T	RES , CARBON	1.8K /1/5W /F	1
R756	CRD20TF2701T	RES , CARBON	2.7K /1/5W/F	1
R757	CRD20TF3301T	RES , CARBON	3.3K /1/5W/F	1
R758	CRD20TF5601T	RES , CARBON(5.6K/F)	5.6K 1/5W F	1
R759	CRD20TF1001T	RES , CARBON	1K /1/5W /F	1
R760	CRD20TF1501T	RES , CARBON	1.5K /1/5W /F	1
R761	CRD20TF1801T	RES , CARBON	1.8K /1/5W /F	1
R762	CRD20TF2701T	RES , CARBON	2.7K /1/5W/F	1
R763	CRD20TF3301T	RES , CARBON	3.3K /1/5W/F	1
R764	CRD20TF5601T	RES , CARBON(5.6K/F)	5.6K/1/5W/F	1
R765	CRD20TF7501T	RES , CARBON (7.5K/F)	7.5K/1/5W/F	1
R766	CRD20TF1001T	RES , CARBON	1K /1/5W /F	1
R767	CRD20TF1501T	RES , CARBON	1.5K /1/5W /F	1
R768	CRD20TF1801T	RES , CARBON	1.8K /1/5W /F	1
R769	CRD20TF2701T	RES , CARBON	2.7K /1/5W/F	1
R781	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
R782	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R783	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
R784	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
R786	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R787	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J	1
R791	CRD20TJ822T	RES , CARBON	8.2K OHM 1/5W J	1
R805	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
R806	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
R824	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R825	CRD20TJ681T	RES , CARBON	680 OHM 1/5W J	1
R828	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R829	CRD20TJ681T	RES , CARBON	680 OHM 1/5W J	1
R864	CRD20TJ272T	RES , CARBON	2.7K OHM 1/5W J	1
R865	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J	1
R866	CRD20TJ272T	RES , CARBON	2.7K OHM 1/5W J	1
R869	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R871	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
R872	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
R873	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1
R874	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1
R875	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R876	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R877	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R878	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R892	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1
R893	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1
R895	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J	1
R896	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J	1
R897	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J	1
R898	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J	1
R899	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
R900	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
R901	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R902	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R903	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
R904	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
R905	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1

FRONT PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
R906	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
R907	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
R908	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
R909	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R910	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R911	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R912	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R913	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
R915	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1
R918	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
R919	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
R920	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
R921	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R922	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
R923	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J	1
R924	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J	1
R926	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R931	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
R934	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1
R935	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R936	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R937	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
R956	CRD20TJ1R0T	RES , CARBON	1 OHM 1/5W J	1
S701	HST1A020ZT	SW , TACT	1A020	1
S702	HST1A020ZT	SW , TACT	1A020	1
S703	HST1A020ZT	SW , TACT	1A020	1
S704	HST1A020ZT	SW , TACT	1A020	1
S705	HST1A020ZT	SW , TACT	1A020	1
S706	HST1A020ZT	SW , TACT	1A020	1
S707	HST1A020ZT	SW , TACT	1A020	1
S708	HST1A020ZT	SW , TACT	1A020	1
S709	HST1A020ZT	SW , TACT	1A020	1
S710	HST1A020ZT	SW , TACT	1A020	1
S711	HST1A020ZT	SW , TACT	1A020	1
S712	HST1A020ZT	SW , TACT	1A020	1
S713	HST1A020ZT	SW , TACT	1A020	1
S714	HST1A020ZT	SW , TACT	1A020	1
S715	HST1A020ZT	SW , TACT	1A020	1
S716	HST1A020ZT	SW , TACT	1A020	1
S717	HST1A020ZT	SW , TACT	1A020	1
S718	HST1A020ZT	SW , TACT	1A020	1
S719	HST1A020ZT	SW , TACT	1A020	1
S720	HST1A020ZT	SW , TACT	1A020	1
BK71	CMD1A209	BRACKET , FLT	BRACKET	1
BK72	CMD1A209	BRACKET , FLT	BRACKET	1
BK73	CMD1A209	BRACKET , FLT	BRACKET	1
BN10	CWZAVR247BN10	SHIELD WIRE ASS'Y(4P, 400mm)	WIRE	1
BN18	CWZAVR125BN18	WIRE ASS'Y (SHIELD)	WIRE	1
BN22	CWZAVR247BN22	SHIELD WIRE ASS'Y(6P, 550mm)	WIRE	1
BN41	CWZAVR247BN41	SHIELD WIRE ASS'Y(6P, 600mm)	WIRE	1
BN80	CWB2B903180EN	WIRE ASS'Y	WIRE	1
BN81	CWB2C908200BM	WIRE ASS'Y	WIRE	1
BN84	CWB2B905080EN	WIRE ASS'Y	WIRE	1
BN85	CWB2B903100EW	WIRE ASS'Y	WIRE	1
BN88	CWB2B904100EN	WIRE ASS'Y	WIRE	1
BN89	CWB2B904100EN	WIRE ASS'Y	WIRE	1
BN92	CWB2B905100EN	WIRE ASS'Y	WIRE	1
CN47	CJP07GA117ZY	WAFER	WAFER	1
CN72	CJP17GA193ZY	WAFER, CARD CABLE (SMD)	WAFER	1

FRONT PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
CN84	CJP05GB46ZY	WAFER	WAFER	1
CN85	CJP03GA19ZY	WAFER , STRAIGHT, 3PIN	WAFER	1
CN86	CJP02GA89ZM	WAFER	WAFER	1
CN88	CJP04GB46ZY	WAFER	WAFER	1
CN89	CJP04GB46ZY	WAFER	WAFER	1
CN92	CJP05GA19ZY	WAFER, STRAIGHT, 5PIN	WAFER	1
D701	CVD52CSBBCEAB2	L.E.D , BLUE	L.E.D	1
D703	CVD52CSBBCEAB2	L.E.D , BLUE	L.E.D	1
D705	CVD52CSBBCEAB2	L.E.D , BLUE	L.E.D	1
D723	CVD50BOBBWGA	L.E.D , 2 COLOR (ORG , BLUE)	L.E.D	1
D727	CVD50BOBBWGA	L.E.D , 2 COLOR (ORG , BLUE)	L.E.D	1
ET03	CMD1A569	BRACKET , PCB	BRACKET	1
FIP1	HFLHCA18ML03	F.I.P	F.I.P	1
IC41	CVINJU7301M	I.C , NJU7301M(TE1)	JRC	1
IC73	HRVNJL34H380A	SENSOR , REMOCON	JRC	1
IC75	HVI74ACT04MTR	I.C , HEX	FAIRCHILD	1
IC76	HVI74HCU04AFNG	I.C , INVERTER	TOSHICA	1
IC86	HVINJM4556AL	I.C , HEADPHONE	JRC	1
IC87	HVINJM2068MDTE1	I.C , OP AMP	JRC	1
IC97	HVIST202EBW	IC , RS232C	ST	1
JK81	CJJ4M043Y	JACK , BOARD	JACK	1
JK82	HJSTORX177L	MODULE , OPTICAL(RX)	OPT JACK(RX)	1
JK83	CJJ2E026Z	JACK , HEADPHONE(SILVER PLATE)	JACK	1
JK85	CJJ9M003Z	JACK , S-VIDEO	JACK	1
JK86	CJJ4S023Y	JACK , BOARD	JACK	1
JK97	CJJ9W001Z	9P D-SUB FEMALE(RS-232C) SEMCO	JACK	1
JW82	CWE8202300RV	WIRE ASS'Y	WIRE	1
JW83	CWE8202150RV	WIRE ASS'Y	WIRE	1
JW84	CWE8202110RV	WIRE ASS'Y	WIRE	1
RL45	CSL4A014ZE	RELAY (+12V)	AXICOM	1
SW1	CSH1A008ZV	SW , PUSH (MOMS)	MOMS SW	1
SW95	KST1A010Z	SW , TACT CN	1A010	1
SW96	HSH2B018Z	SW , PUSH	SWITCH	1
SW97	HSH2B018Z	SW , PUSH	SWITCH	1
VR74	CSR2A037Z	ENCODER	ENCODER	1
BOTTOM CHASSIS ASS'Y				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
	CUAAVR247/230	BOTTOM CHASSIS ASS'Y	ASS'Y	1
	CHD1A012ZR	SCREW , SPECIAL	SCREW	2
	CHD1A023R	SCREW , SPECIAL	SCREW	4
	CHD4A012R	SCREW , SPECIAL	SCREW	5
	CHE170	HOLDER , PCB	HOLDER	2
	CHE36-3	CLAMPER , WIRE	CLAMPER	2
	CHG1A104Z	CUSHUON , RUBBER	CUSHION	1
	CHG1A160Z	CUSHION , RUBBER	CUSHION	1
	CHG1A360	CUSHION , FOOT	CUSHION	4
	CHS1A032	TAPE , HEMELON	TAPE	4
	CJA2B043ZA	CORD , POWER(EUR)	POWER CORD	1
	CKF12A319Z	PANEL , REAR AVR247/230	REAR PANEL	1
	CKL2A069H43	FOOT	FOOT	4
	CLZ9W003Z	FERRITE , RING	FERRITE RING	1
	CMD2A487	BRACKET , TRANS	BRACKET	1
	CNVM9014MS171L	MODULE , TUNER(EUR)	TUNER	1
	CQB1A173Y	LABEL, FUSE CAUTION	LABEL	1
	CTB3+10GFZR	SCREW	SCREW	23
	CTB3+6FFZR	SCREW	SCREW	8
	CTB3+6JR	SCREW	SCREW	15
	CTB3+8JR	SCREW	SCREW	10

BOTTOM CHASSIS ASS'Y				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
	CTW3+12JR	SCREW	SCREW	2
	CTW3+8JR	SCREW	SCREW	9
	CUA3A229	CHASSIS , BOTTOM AVR350/230	CHASSIS	1
	KHR1A028	BUSHING , AC CORD	BUSHING	1
CB11	CWC1B2A17A100B	CABLE , CARD (1MM) 17PIN	CARD CABLE	1
CB12	CWC1C4A21B110B	CABLE , CARD	CARD CABLE	1
CB13	CWC1C4A13B080B	CABLE , CARD	CARD CABLE	1
CB14	CWC6F2A17A120B	CABLE , CARD(17PIN, 120MM, 1 MM PI	CARD CABLE	1
CB15	CWCAVR347BN15	CARD CABLE COPPER SHIELD ASS'Y	CARD CABLE	1
CB19	CWC1B2A09A240B	CABLE , CARD	CARD CABLE	1
CB42	CWC1B2A07A120B	CABLE, CARD (1mm PITCH, A-B TYPE)	CARD CABLE	1
CB47	CWC1B2A07A060B	CABLE , CARD	CARD CABLE	1
F901	KBA2C6300TLEZ	FUSE	LITTEL FUSE	1
T901	CLT5W026ZE	TRANS , POWER	MAIN TRANS	1
MAIN PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
	COP11911O	AVR247/230 MAIN PCB ASS'Y	ASS'Y	1
	CHD3A012R	SCREW , SPECIAL	SCREW	3
	CHS1A032	TAPE , HEMELON	TAPE	1
	CTW3+8JR	SCREW	SCREW	2
	C8AGB288	BOND (MAX)	BOND (MAX)	10,2
C501	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C502	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C503	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C504	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C505	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C506	CCKT1H331KB	CAP , CERAMIC	330PF 50V	1
C507	HCBS1H331KBT	CAP , CERAMIC	330PF 50V	1
C508	HCBS1H331KBT	CAP , CERAMIC	330PF 50V	1
C509	CCKT1H331KB	CAP , CERAMIC	330PF 50V	1
C510	HCBS1H331KBT	CAP , CERAMIC	330PF 50V	1
C561	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C562	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C563	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C564	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C565	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C566	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C567	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C568	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C569	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C570	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C571	HCBS1H681KBT	CAP , CERAMIC	680PF 50V	1
C572	HCBS1H681KBT	CAP , CERAMIC	680PF 50V	1
C573	HCBS1H681KBT	CAP , CERAMIC	680PF 50V	1
C574	HCBS1H681KBT	CAP , CERAMIC	680PF 50V	1
C575	HCBS1H681KBT	CAP , CERAMIC	680PF 50V	1
C601	CCCT1H120JC	CAP , CERAMIC	12PF 50V	1
C602	CCCT1H120JC	CAP , CERAMIC	12PF 50V	1
C603	CCCT1H120JC	CAP , CERAMIC	12PF 50V	1
C604	CCCT1H120JC	CAP , CERAMIC	12PF 50V	1
C605	CCCT1H120JC	CAP , CERAMIC	12PF 50V	1
C606	CCCT1H330JC	CAP , CERAMIC	33PF 50V	1
C607	CCCT1H330JC	CAP , CERAMIC	33PF 50V	1
C608	CCCT1H330JC	CAP , CERAMIC	33PF 50V	1
C609	CCCT1H330JC	CAP , CERAMIC	33PF 50V	1
C610	CCCT1H330JC	CAP , CERAMIC	33PF 50V	1

MAIN PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
C681	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C682	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C683	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C684	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C685	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C721	CCKT1H221KB	CAP , CERAMIC	220PF 50V	1
C722	CCKT1H221KB	CAP , CERAMIC	220PF 50V	1
C723	CCKT1H221KB	CAP , CERAMIC	220PF 50V	1
C724	CCKT1H221KB	CAP , CERAMIC	220PF 50V	1
C725	CCKT1H221KB	CAP , CERAMIC	220PF 50V	1
C726	CCKT1H221KB	CAP , CERAMIC	220PF 50V	1
C727	CCKT1H221KB	CAP , CERAMIC	220PF 50V	1
C728	CCKT1H221KB	CAP , CERAMIC	220PF 50V	1
C801	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C802	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C803	CCCT1H330JC	CAP , CERAMIC	33PF 50V	1
C804	CCCT1H330JC	CAP , CERAMIC	33PF 50V	1
C805	CCCT1H120JC	CAP , CERAMIC	12PF 50V	1
C806	CCCT1H120JC	CAP , CERAMIC	12PF 50V	1
C811	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C812	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C813	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C814	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C815	CCKT1H331KB	CAP , CERAMIC	330PF 50V	1
C816	HCBS1H331KBT	CAP , CERAMIC	330PF 50V	1
C817	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C818	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C819	HCBS1H681KBT	CAP , CERAMIC	680PF 50V	1
C820	HCBS1H681KBT	CAP , CERAMIC	680PF 50V	1
C900	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V	1
C901	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V	1
C905	CCFT1H223ZF	CAP , CERAMIC	0.022UP 50V	1
C907	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C908	CCFT1H223ZF	CAP , CERAMIC	0.022UP 50V	1
C910	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V	1
C911	CCEA1CH471T	CAP , ELECT	470UF 16V	1
C912	CCEA1EH221T	CAP , ELECT	220UF 16V	1
C913	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V ZF	1
C914	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
C917	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
C918	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
C919	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
C924	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V ZF	1
C925	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V ZF	1
C932	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C933	CCEA1CH221T	CAP , ELECT	220UF 16V	1
C934	CCFT1H223ZF	CAP , CERAMIC	0.022UP 50V	1
C939	CCEA1HH4R7T	CAP , ELECT	4.7UF 50V	1
C940	CCEA1AH471T	CAP , ELECT	470UF 10V	1
C948	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V ZF	1
C949	CCEA1HH220T	CAP , ELECT	22UF 50V	1
C950	CCEA1AH471T	CAP , ELECT	470UF 10V	1
C971	HCQI1H562JZT	CAP , MYLAR	5600PF 50V	1
C972	HCQI1H562JZT	CAP , MYLAR	5600PF 50V	1
C973	HCQI1H562JZT	CAP , MYLAR	5600PF 50V	1
C974	HCQI1H562JZT	CAP , MYLAR	5600PF 50V	1
C975	HCQI1H562JZT	CAP , MYLAR	5600PF 50V	1
C980	HCQI1H562JZT	CAP , MYLAR	5600PF 50V	1
C981	HCQI1H562JZT	CAP , MYLAR	5600PF 50V	1

MAIN PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
C990	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
C991	CCEA1HH1R0T	CAP , ELECT	1UF 50V	1
C992	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
C993	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
C994	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
C995	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
C996	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
C997	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
C999	CCFT1H223ZF	CAP , CERAMIC	0.022UF 50V ZF	1
D501	CVD1SS133MT	DIODE	1SS133	1
D502	CVD1SS133MT	DIODE	1SS133	1
D503	CVD1SS133MT	DIODE	1SS133	1
D504	CVD1SS133MT	DIODE	1SS133	1
D505	CVD1SS133MT	DIODE	1SS133	1
D581	CVD1SS133MT	DIODE	1SS133	1
D582	CVD1SS133MT	DIODE	1SS133	1
D583	CVD1SS133MT	DIODE	1SS133	1
D584	CVD1SS133MT	DIODE	1SS133	1
D585	CVD1SS133MT	DIODE	1SS133	1
D801	CVD1SS133MT	DIODE	1SS133	1
D802	CVD1SS133MT	DIODE	1SS133	1
D803	CVD1SS133MT	DIODE	1SS133	1
D804	CVD1SS133MT	DIODE	1SS133	1
D901	CVD1N4003SRT	DIODE , RECT	1N4003	1
D902	CVD1SS133MT	DIODE	1SS133	1
D911	CVD1SS133MT	DIODE	1SS133	1
D912	CVD1SS133MT	DIODE	1SS133	1
D914	CVD1SS133MT	DIODE	1SS133	1
D917	CVD1SS133MT	DIODE	1SS133	1
D953	CVD1SS133MT	DIODE	1SS133	1
D954	CVD1N4003SRT	DIODE , RECT	1N4003	1
D955	CVD1N4003SRT	DIODE , RECT	1N4003	1
D956	CVD1N4003SRT	DIODE , RECT	1N4003	1
D957	CVD1N4003SRT	DIODE , RECT	1N4003	1
D961	CVD1N4003ST	DIODE , RECT	1N4003	1
D962	CVD1N4003SRT	DIODE , RECT	1N4003	1
D963	CVD1N4003ST	DIODE , RECT	1N4003	1
D964	CVD1SS133MT	DIODE	1SS133	1
D967	CVD1SS133MT	DIODE	1SS133	1
D968	CVD1SS133MT	DIODE	1SS133	1
D969	CVD1SS133MT	DIODE	1SS133	1
D971	CVD1SS133MT	DIODE	1SS133	1
D972	CVD1SS133MT	DIODE	1SS133	1
D973	CVD1SS133MT	DIODE	1SS133	1
D974	CVD1SS133MT	DIODE	1SS133	1
D979	CVDZJ6.2BT	DIODE , ZENER	MTZJ6.2B	1
D980	CVD1SS133MT	DIODE	1SS133	1
ET90	HJT1A025	PALTE , EARTH	MET37-0002	1
ET91	HJT1A025	PALTE , EARTH	MET37-0002	1
F901	KJCFC5S	HOLDER , FUSE	HOLDER	2
F902	KBA2D2500TLET	FUSE	SAVE FUSETECH	1
Q501	HVTKTA1268GRT	T.R	KTA1268GR	1
Q502	HVTKTA1268GRT	T.R	KTA1268GR	1
Q503	HVTKTA1268GRT	T.R	KTA1268GR	1
Q504	HVTKTA1268GRT	T.R	KTA1268GR	1
Q505	HVTKTA1268GRT	T.R	KTA1268GR	1
Q511	HVTKTC3200GRT	T.R	KTC3200GR	1
Q512	HVTKTC3200GRT	T.R	KTC3200GR	1
Q513	HVTKTC3200GRT	T.R	KTC3200GR	1

MAIN PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
Q514	HVTKTC3200GRT	T.R	KTC3200GR	1
Q515	HVTKTC3200GRT	T.R	KTC3200GR	1
Q516	HVTKTC3200GRT	T.R	KTC3200GR	1
Q517	HVTKTC3200GRT	T.R	KTC3200GR	1
Q518	HVTKTC3200GRT	T.R	KTC3200GR	1
Q519	HVTKTC3200GRT	T.R	KTC3200GR	1
Q520	HVTKTC3200GRT	T.R	KTC3200GR	1
Q541	HVTKTC3198YT	T.R	KTC3198Y	1
Q542	HVTKTC3198YT	T.R	KTC3198Y	1
Q543	HVTKTC3198YT	T.R	KTC3198Y	1
Q544	HVTKTC3198YT	T.R	KTC3198Y	1
Q545	HVTKTC3198YT	T.R	KTC3198Y	1
Q556	HVTKTC3200GRT	T.R	KTC3200GR	1
Q557	HVTKTC3200GRT	T.R	KTC3200GR	1
Q558	HVTKTC3200GRT	T.R	KTC3200GR	1
Q559	HVTKTC3200GRT	T.R	KTC3200GR	1
Q560	HVTKTC3200GRT	T.R	KTC3200GR	1
Q561	HVTKTC3200GRT	T.R	KTC3200GR	1
Q562	HVTKTC3200GRT	T.R	KTC3200GR	1
Q563	HVTKTC3200GRT	T.R	KTC3200GR	1
Q564	HVTKTC3200GRT	T.R	KTC3200GR	1
Q565	HVTKTC3200GRT	T.R	KTC3200GR	1
Q601	HVTKTA1268GRT	T.R	KTA1268GR	1
Q602	HVTKTA1268GRT	T.R	KTA1268GR	1
Q603	HVTKTA1268GRT	T.R	KTA1268GR	1
Q604	HVTKTA1268GRT	T.R	KTA1268GR	1
Q605	HVTKTA1268GRT	T.R	KTA1268GR	1
Q681	HVTKSC2785YT	T.R	KSC2785Y	1
Q682	HVTKSC2785YT	T.R	KSC2785Y	1
Q683	HVTKSC2785YT	T.R	KSC2785Y	1
Q684	HVTKSC2785YT	T.R	KSC2785Y	1
Q685	HVTKSC2785YT	T.R	KSC2785Y	1
Q801	HVTKSC2785YT	T.R	KSC2785Y	1
Q802	HVTKSC2785YT	T.R	KSC2785Y	1
Q812	HVTKTA1268GRT	T.R	KTA1268GR	1
Q813	HVTKTC3200GRT	T.R	KTC3200GR	1
Q814	HVTKTA1268GRT	T.R	KTA1268GR	1
Q815	HVTKTC3200GRT	T.R	KTC3200GR	1
Q816	HVTKTA1268GRT	T.R	KTA1268GR	1
Q817	HVTKTA1268GRT	T.R	KTA1268GR	1
Q818	HVTKTC3200GRT	T.R	KTC3200GR	1
Q819	HVTKTC3200GRT	T.R	KTC3200GR	1
Q820	HVTKTC3200GRT	T.R	KTC3200GR	1
Q821	HVTKTC3200GRT	T.R	KTC3200GR	1
Q822	HVTKTC3200GRT	T.R	KTC3200GR	1
Q823	HVTKTC3200GRT	T.R	KTC3200GR	1
Q824	HVTKTC3198YT	T.R	KTC3198Y	1
Q825	HVTKTC3198YT	T.R	KTC3198Y	1
Q901	HVTKSC2785YT	T.R	KSC2785Y	1
Q911	HVTKTA1271YT	T.R	KTA1271Y	1
Q912	HVTKTA1271YT	T.R	KTA1271Y	1
Q913	HVTKTA1271YT	T.R	KTA1271Y	1
Q914	HVTKTA1271YT	T.R	KTA1271Y	1
Q915	HVTKSC2785YT	T.R	KSC2785Y	1
Q916	HVTKSC2785YT	T.R	KSC2785Y	1
Q917	HVTKSC2785YT	T.R	KSC2785Y	1
Q918	HVTKSC2785YT	T.R	KSC2785Y	1
Q938	HVTKRA107MT	T.R	KRA107M	1
Q939	HVTKRA107MT	T.R	KRA107M	1

MAIN PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
Q942	HVTKSC2785YT	T.R	KSC2785Y	1
Q943	HVTKSC2785YT	T.R	KSC2785Y	1
Q951	HVTKRC107MT	T.R	KRC107M	1
Q952	HVTKRA107MT	T.R	KRA107M	1
Q960	HVTKRC107MT	T.R	KRC107M	1
Q961	HVTKTA1024YT	T.R	KTA1024YT	1
Q991	HVTKRC107MT	T.R	KRC107M	1
Q992	HVTKRA107MT	T.R	KRA107M	1
Q993	HVTKRA107MT	T.R	KRA107M	1
Q994	HVTKRC107MT	T.R	KRC107M	1
Q997	HVTKRA107MT	T.R	KRA107M	1
Q998	HVTKRC107MT	T.R	KRC107M	1
R501	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1
R502	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1
R503	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1
R504	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1
R505	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1
R506	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1
R507	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1
R508	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1
R509	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1
R510	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1
R511	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R512	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R513	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R514	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R515	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R516	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R517	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R518	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R519	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R520	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R521	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1
R522	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1
R523	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1
R524	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1
R525	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1
R531	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R532	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R533	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R534	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R535	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R536	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R537	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R538	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R539	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R540	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R541	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1
R542	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1
R543	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1
R544	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1
R545	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1
R556	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1
R557	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1
R558	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1
R559	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1
R560	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1
R561	CRD20TJ162T	RES , CARBON	1.6K OHM 1/5W J	1
R562	CRD20TJ162T	RES , CARBON	1.6K OHM 1/5W J	1

MAIN PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
R563	CRD20TJ162T	RES , CARBON	1.6K OHM 1/5W J	1
R564	CRD20TJ162T	RES , CARBON	1.6K OHM 1/5W J	1
R565	CRD20TJ162T	RES , CARBON	1.6K OHM 1/5W J	1
R566	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R567	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R568	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R569	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R570	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R571	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R572	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R573	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R574	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R575	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R576	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
R577	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
R578	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
R579	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
R580	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
R581	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R582	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R583	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R584	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R585	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R586	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R587	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R588	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R589	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R590	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R591	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R592	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R593	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R594	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R595	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R596	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R597	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R598	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R599	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R600	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R601	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R602	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R603	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R604	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R605	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R606	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R607	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R608	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R609	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R610	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R611	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
R612	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
R631	CRD25FJ180T	RES , CARBON	18 OHM 1/4W	1
R632	CRD25FJ180T	RES , CARBON	18 OHM 1/4W	1
R633	CRD25FJ180T	RES , CARBON	18 OHM 1/4W	1
R634	CRD25FJ180T	RES , CARBON	18 OHM 1/4W	1
R635	CRD25FJ180T	RES , CARBON	18 OHM 1/4W	1
R636	CRD25FJ180T	RES , CARBON	18 OHM 1/4W	1
R637	CRD25FJ180T	RES , CARBON	18 OHM 1/4W	1
R638	CRD25FJ180T	RES , CARBON	18 OHM 1/4W	1
R639	CRD25FJ180T	RES , CARBON	18 OHM 1/4W	1

MAIN PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
R640	CRD25FJ180T	RES , CARBON	18 OHM 1/4W	1
R646	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
R647	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
R648	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
R649	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
R650	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
R651	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
R652	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
R653	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
R654	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
R655	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
R666	CRD25TJ470T	RES , CARBON	47 OHM 1/4W	1
R667	CRD25TJ470T	RES , CARBON	47 OHM 1/4W	1
R668	CRD25TJ470T	RES , CARBON	47 OHM 1/4W	1
R669	CRD25TJ470T	RES , CARBON	47 OHM 1/4W	1
R670	CRD25TJ470T	RES , CARBON	47 OHM 1/4W	1
R671	CRD20TJ911T	RES , CARBON	910 OHM 1/5W J	1
R672	CRD20TJ911T	RES , CARBON	910 OHM 1/5W J	1
R673	CRD20TJ911T	RES , CARBON	910 OHM 1/5W J	1
R674	CRD20TJ911T	RES , CARBON	910 OHM 1/5W J	1
R675	CRD20TJ911T	RES , CARBON	910 OHM 1/5W J	1
R681	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
R682	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
R683	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
R684	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
R685	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
R686	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R687	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R688	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R689	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R690	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R696	CRD25TJ470T	RES , CARBON	47 OHM 1/4W	1
R697	CRD25TJ470T	RES , CARBON	47 OHM 1/4W	1
R698	CRD25TJ470T	RES , CARBON	47 OHM 1/4W	1
R699	CRD25TJ470T	RES , CARBON	47 OHM 1/4W	1
R700	CRD25TJ470T	RES , CARBON	47 OHM 1/4W	1
R771	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R772	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R773	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R774	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R775	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R776	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R777	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R781	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R782	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R783	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R784	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R785	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R786	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R787	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R801	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R802	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R803	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
R804	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
R805	CRD20TJ911T	RES , CARBON	910 OHM 1/5W J	1
R807	CRD20TJ911T	RES , CARBON	910 OHM 1/5W J	1
R812	CRD25TJ470T	RES , CARBON	47 OHM 1/4W	1
R813	CRD25TJ470T	RES , CARBON	47 OHM 1/4W	1
R814	CRD25TJ470T	RES , CARBON	47 OHM 1/4W	1

MAIN PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
R815	CRD25TJ470T	RES , CARBON	47 OHM 1/4W	1
R817	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
R818	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
R819	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
R820	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
R821	CRD25FJ180T	RES , CARBON	18 OHM 1/4W	1
R822	CRD25FJ180T	RES , CARBON	18 OHM 1/4W	1
R823	CRD25FJ180T	RES , CARBON	18 OHM 1/4W	1
R824	CRD25FJ180T	RES , CARBON	18 OHM 1/4W	1
R830	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R831	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R832	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R833	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R834	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R835	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R836	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R837	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R838	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R839	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R840	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R841	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R842	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R843	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R844	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R845	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R848	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1
R849	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1
R850	CRD20TJ162T	RES , CARBON	1.6K OHM 1/5W J	1
R851	CRD20TJ162T	RES , CARBON	1.6K OHM 1/5W J	1
R852	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R853	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R854	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R855	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R856	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R857	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R858	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R859	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
R860	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1
R861	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1
R862	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1
R863	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1
R870	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1
R871	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1
R872	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1
R873	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1
R900	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R901	CRD25TJ393T	RES , CARBON	39K OHM 1/4W	1
R902	CRD25TJ393T	RES , CARBON	39K OHM 1/4W	1
R903	CRD25TJ393T	RES , CARBON	39K OHM 1/4W	1
R906	CRD25TJ393T	RES , CARBON	39K OHM 1/4W	1
R907	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R908	CRD20TJ105T	RES , CARBON	1M OHM 1/5W J	1
R909	CRD20TJ682T	RES , CARBON	6.8K OHM 1/5W J	1
R910	CRD20TJ105T	RES , CARBON	1M OHM 1/5W J	1
R911	CRD25TJ680T	RES , CARBON	68 OHM 1/4W J	1
R912	CRD20TJ332T	RES , CARBON	3.3K OHM 1/5W J	1
R917	CRD25TJ393T	RES , CARBON	39K OHM 1/4W	1
R918	CRD25TJ393T	RES , CARBON	39K OHM 1/4W	1
R919	CRD25TJ393T	RES , CARBON	39K OHM 1/4W	1

MAIN PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
R920	CRD25TJ393T	RES , CARBON	39K OHM 1/4W	1
R921	CRD25FJ180T	RES , CARBON	18 OHM 1/4W J	1
R922	CRD25TJ470T	RES , CARBON	47 OHM 1/4W J	1
R923	CRD20TJ220T	RES , CARBON	22 OHM 1/5W J	1
R924	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1
R925	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1
R926	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1
R927	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1
R928	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1
R929	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1
R930	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1
R931	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1
R932	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R933	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
R934	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
R935	CRD20TJ154T	RES , CARBON	150K OHM 1/5W J	1
R936	CRD20TJ184T	RES , CARBON	180K OHM 1/5W J	1
R939	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
R940	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
R941	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R942	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R943	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R944	CRD25TJ223T	RES , CARBON	22K OHM 1/4W J	1
R945	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R946	CRD25TJ223T	RES , CARBON	22K OHM 1/4W J	1
R947	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R948	CRD25TJ222T	RES , CARBON	2.2K OHM 1/4W J	1
R949	CRD20TJ822T	RES , CARBON	8.2K OHM 1/5W J	1
R952	CRD25TJ223T	RES , CARBON	22K OHM 1/4W J	1
R953	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R954	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
R955	CRD20TJ203T	RES , CARBON	20K OHM 1/5W J	1
R956	CRD20TJ394T	RES , CARBON	390K OHM 1/5W J	1
R957	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
R958	CRD20TJ563T	RES , CARBON	56K OHM 1/5W J	1
R959	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
R960	CRD20TJ332T	RES , CARBON	3.3K OHM 1/5W J	1
R961	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1
R962	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1
R963	CRD20TJ105T	RES , CARBON	1M OHM 1/5W J	1
R966	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
R967	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
R968	CRD20TJ105T	RES , CARBON	1M OHM 1/5W J	1
R969	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R980	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1
R986	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
R987	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
R988	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
R989	CRD20TJ302T	RES , CARBON	3K OHM 1/5W J	1
R991	CRD20TJ822T	RES , CARBON	8.2K OHM 1/5W J	1
R992	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
R998	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
BN19	CWB3FE03250UP	WIRE ASS'Y	WIRE	1
BN20	CWB3FC04280UP	WIRE ASS'Y	WIRE	1
BN81	CWB1C902050EN	WIRE ASS'Y	WIRE	1
BN82	CWB1C902050EN	WIRE ASS'Y	WIRE	1
BN83	CWB1C902050EN	WIRE ASS'Y	WIRE	1
BN84	CWB1C902050EN	WIRE ASS'Y	WIRE	1
BN85	CWB1C902050EN	WIRE ASS'Y	WIRE	1

MAIN PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
BN86	CWB1C902050EN	WIRE ASS'Y	WIRE	1
BN87	CWB1C902050EN	WIRE ASS'Y	WIRE	1
BN88	CWB2B906070EN	WIRE ASS'Y	WIRE	1
BN89	CWB1C902250BM	WIRE ASS'Y	WIRE	1
BN90	CWB4F232550PU	WIRE ASS'Y	WIRE	1
BN98	HJP08GA130ZK	WAFER	WAFER	1
CN11	CJP17GA117ZY	WAFER	WAFER	1
CN12	CJP21GA115ZY	WAFER , CARD CABLE	WAFER	1
CN61	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	WAFER	1
CN62	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	WAFER	1
CN63	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	WAFER	1
CN64	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	WAFER	1
CN65	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	WAFER	1
CN66	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	WAFER	1
CN67	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	WAFER	1
CN89	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	WAFER	1
CN91	CJP02GA89ZY	WAFER	WAFER	1
CN92	CJP02KA060ZY	WAFER	WAFER	1
CN93	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	WAFER	1
C631	CCEA1JH101E	CAP , ELECT	100UF 63V	1
C632	CCEA1JH101E	CAP , ELECT	100UF 63V	1
C633	CCEA1JH101E	CAP , ELECT	100UF 63V	1
C634	CCEA1JH101E	CAP , ELECT	100UF 63V	1
C635	CCEA1JH101E	CAP , ELECT	100UF 63V	1
C636	CCEA1JH101E	CAP , ELECT	100UF 63V	1
C637	CCEA1JH101E	CAP , ELECT	100UF 63V	1
C638	CCEA1JH101E	CAP , ELECT	100UF 63V	1
C639	CCEA1JH101E	CAP , ELECT	100UF 63V	1
C640	CCEA1JH101E	CAP , ELECT	100UF 63V	1
C807	CCEA1JH101E	CAP , ELECT	100UF 63V	1
C808	CCEA1JH101E	CAP , ELECT	100UF 63V	1
C809	CCEA1JH101E	CAP , ELECT	100UF 63V	1
C810	CCEA1JH101E	CAP , ELECT	100UF 63V	1
C902	CCET50VKL4822NK	CAP , ELECT	8200UF 50V	1
C904	KCKDKS472ME	CAP , CERAMIC(X1/Y2/SC)	0.0047UF 2.5KV	1
C906	CCEA1EH102E	CAP , ELECT	1000UF 25V	1
C909	CCET50VKL4822NK	CAP , ELECT	8200UF 50V	1
C915	CCET50VKL4103NK	CAP , ELECT	10000UF 50V	1
C916	CCET50VKL4103NK	CAP , ELECT	10000UF 50V	1
ET01	CMD1A387	BRACKET , PCB	BRACKET	1
IC94	HVIKIA7805API	REGULATOR, +5V	FAIRCHILD	1
IC97	HVIS-80842CNY-X	I.C RESET	SEIKO	1
JK91	CJJ5R006Z	TERMINAL , SPEAKER	TERMINAL	1
JK92	CJJ5Q012Z	TERMINAL , SPEAKER	TERMINAL	1
JK97	CJJ4P041W	JACK IN/OUT	JACK	1
JK98	CJJ4P042W	JACK IN/OUT	JACK	1
JW90	CWE8212120VV	WIRE , RED	WIRE	1
JW91	CWE8212180VV	WIRE ASS'Y	WIRE	1
JW93	CWEP202110VV	WIRE	WIRE	1
L501	CLEY0R5KAK	COIL , SPEAKER	0.5UH K	1
L502	CLEY0R5KAK	COIL , SPEAKER	0.5UH K	1
L503	CLEY0R5KAK	COIL , SPEAKER	0.5UH K	1
L504	CLEY0R5KAK	COIL , SPEAKER	0.5UH K	1
L505	CLEY0R5KAK	COIL , SPEAKER	0.5UH K	1
L506	CLEY0R5KAK	COIL , SPEAKER	0.5UH K	1
L507	CLEY0R5KAK	COIL , SPEAKER	0.5UH K	1
OL91	KJJ7A022Z	OUTLET , AC(EUR/1P)	A202D0031P(1P)	1
Q858	HVT2SA1360O	T.R	2SA1360O	1
Q871	HVT2SA1360O	T.R	2SA1360O	1

MAIN PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
Q872	HVT2SA1360O	T.R	2SA1360O	1
Q874	HVT2SA1360O	T.R	2SA1360O	1
Q875	HVT2SA1360O	T.R	2SA1360O	1
Q876	HVT2SA1360O	T.R	2SA1360O	1
Q877	HVT2SA1360O	T.R	2SA1360O	1
Q881	HVT2SC3423O	T.R	2SC3423O	1
Q882	HVT2SC3423O	T.R	2SC3423O	1
Q883	HVT2SC3423O	T.R	2SC3423O	1
Q884	HVT2SC3423O	T.R	2SC3423O	1
Q885	HVT2SC3423O	T.R	2SC3423O	1
Q886	HVT2SC3423O	T.R	2SC3423O	1
Q887	HVT2SC3423O	T.R	2SC3423O	1
RY94	HSL1A008ZE	RELAY	SDT-S-112DMR(OEG)	1
R656	CRF5EKR27HX2K	RES , CEMENT	0.27ohm X 2	1
R657	CRF5EKR27HX2K	RES , CEMENT	0.27ohm X 2	1
R658	CRF5EKR27HX2K	RES , CEMENT	0.27ohm X 2	1
R659	CRF5EKR27HX2K	RES , CEMENT	0.27ohm X 2	1
R660	CRF5EKR27HX2K	RES , CEMENT	0.27ohm X 2	1
R676	CRD25TJ182T	RES , CARBON	1.8K OHM	1
R677	CRD25TJ182T	RES , CARBON	1.8K OHM	1
R678	CRD25TJ182T	RES , CARBON	1.8K OHM	1
R679	CRD25TJ182T	RES , CARBON	1.8K OHM	1
R680	CRD25TJ182T	RES , CARBON	1.8K OHM	1
R808	CRD25TJ182T	RES , CARBON	1.8K OHM	1
R809	CRD25TJ182T	RES , CARBON	1.8K OHM	1
R810	CRF5EKR27HX2K	RES , CEMENT	0.27ohm X 2	1
R811	CRF5EKR27HX2K	RES , CEMENT	0.27ohm X 2	1
R905	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1
R990	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1
R993	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1
R994	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1
R995	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1
R996	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1
R997	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1
R999	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1
TH91	KRTP42T7D330B	THERMAL SENSOR , POSISTOR	P42T7D330BW20	1
T902	CLT5J033YE	TRANS , SUB		1
	CMYAVR247/230	**HEAT SINK ASS'Y**		**1**
	CMYAVR247/230	HEAT SINK ASS'Y	ASS`Y	1
	CFNCF12825MS	MOTOR, FAN(80*80*25MM)	FAN	2
	CHD1A012R	SCREW , SPECIAL	SCREW	21
	CHD1A036R	SCREW , SPECIAL	SCREW	6
	CHD3A012R	SCREW , SPECIAL	SCREW	4
	CMD1A398	BRACKET , PCB	BRACKET	2
	CMD1A417	BRACKET , PCB	BRACKET	2
	CMD1A600	BRACKET , FAN	BRACKET	1
	CMD1A615	BRACKET , FAN	BRACKET	1
	CMY1A271	HEAT SINK	HEAT SINK	1
	CMY2A249	HEAT SINK	HEAT SINK	1
	CTB3+10JR	SCREW	SCREW	3
	CTB3+8JR	SCREW	SCREW	6
	K8AYG6260	COMPOUND , SILICONE	COMPOUND , SILICONE	9
Q652	HVT2SB1560-OKM	T.R , POWER	2SB1560	1
Q653	HVT2SB1560-OKM	T.R , POWER	2SB1560	1
Q654	HVT2SB1560-OKM	T.R , POWER	2SB1560	1
Q655	HVT2SB1560-OKM	T.R , POWER	2SB1560	1
Q657	HVT2SD2390-OKM	T.R , POWER	2SD2390	1
Q658	HVT2SD2390-OKM	T.R , POWER	2SD2390	1

	CMYAVR247/230	HEAT SINK ASS'Y		1
Q659	HVT2SD2390-OKM	T.R , POWER	2SD2390	1
Q660	HVT2SD2390-OKM	T.R , POWER	2SD2390	1
Q661	HVT2SB1560-OKM	T.R , POWER	2SB1560	1
Q670	HVT2SD2390-OKM	T.R , POWER	2SD2390	1
Q803	HVT2SD2390-OKM	T.R , POWER	2SD2390	1
Q804	HVT2SB1560-OKM	T.R , POWER	2SB1560	1
Q805	HVT2SD2390-OKM	T.R , POWER	2SD2390	1
Q807	HVT2SB1560-OKM	T.R , POWER	2SB1560	1
INPUT PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
	COP11913O	AVR247/230 INPUT PCB ASS'Y	ASS'Y	1
	CIP11913OSMD	INPUT PCB SMD ASS'Y AVR247/230	ASS'Y	1
C201	CCUS1H221JA	CAP , CHIP	220PF	1
C202	CCUS1H221JA	CAP , CHIP	220PF	1
C203	CCUS1H221JA	CAP , CHIP	220PF	1
C204	CCUS1H221JA	CAP , CHIP	220PF	1
C205	CCUS1H221JA	CAP , CHIP	220PF	1
C206	CCUS1H221JA	CAP , CHIP	220PF	1
C207	CCUS1H221JA	CAP , CHIP	220PF	1
C208	CCUS1H221JA	CAP , CHIP	220PF	1
C209	CCUS1H221JA	CAP , CHIP	220PF	1
C210	CCUS1H221JA	CAP , CHIP	220PF	1
C211	CCUS1H221JA	CAP , CHIP	220PF	1
C212	CCUS1H221JA	CAP , CHIP	220PF	1
C213	CCUS1H221JA	CAP , CHIP	220PF	1
C214	CCUS1H221JA	CAP , CHIP	220PF	1
C215	CCUS1H221JA	CAP , CHIP	220PF	1
C216	CCUS1H221JA	CAP , CHIP	220PF	1
C219	CCUS1H221JA	CAP , CHIP	220PF	1
C220	CCUS1H221JA	CAP , CHIP	220PF	1
C221	CCUS1H221JA	CAP , CHIP	220PF	1
C222	CCUS1H221JA	CAP , CHIP	220PF	1
C223	CCUS1H221JA	CAP , CHIP	220PF	1
C224	CCUS1H221JA	CAP , CHIP	220PF	1
C225	CCUS1H221JA	CAP , CHIP	220PF	1
C226	CCUS1H221JA	CAP , CHIP	220PF	1
C260	CCUS1H104KC	CAP , CHIP	0.1UF	1
C269	CCUS1A105KC	CAP , CHIP	1UF	1
C274	CCUS1A105KC	CAP , CHIP	1UF	1
C277	CCUS1H104KC	CAP , CHIP	0.1UF	1
C278	CCUS1H104KC	CAP , CHIP	0.1UF	1
C279	CCUS1H104KC	CAP , CHIP	0.1UF	1
C280	CCUS1H104KC	CAP , CHIP	0.1UF	1
C289	CCUS1H104KC	CAP , CHIP	0.1UF	1
C290	CCUS1H104KC	CAP , CHIP	0.1UF	1
C291	CCUS1H104KC	CAP , CHIP	0.1UF	1
C293	CCUS1H104KC	CAP , CHIP	0.1UF	1
C295	CCUS1H272KC	CAP , CHIP	2700PF	1
C296	CCUS1H272KC	CAP , CHIP	2700PF	1
C299	CCUS1H104KC	CAP , CHIP	0.1UF	1
C301	CCUS1H152KC	CAP , CHIP	1500PF	1
C302	CCUS1H152KC	CAP , CHIP	1500PF	1
C303	CCUS1H152KC	CAP , CHIP	1500PF	1
C304	CCUS1H152KC	CAP , CHIP	1500PF	1
C305	CCUS1H152KC	CAP , CHIP	1500PF	1
C306	CCUS1H152KC	CAP , CHIP	1500PF	1
C307	CCUS1H152KC	CAP , CHIP	1500PF	1
C308	CCUS1H152KC	CAP , CHIP	1500PF	1
C309	CCUS1H102KC	CAP , CHIP	1000PF	1

INPUT PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
C310	CCUS1H102KC	CAP , CHIP	1000PF	1
C311	CCUS1H102KC	CAP , CHIP	1000PF	1
C312	CCUS1H102KC	CAP , CHIP	1000PF	1
C313	CCUS1H102KC	CAP , CHIP	1000PF	1
C314	CCUS1H102KC	CAP , CHIP	1000PF	1
C315	CCUS1H102KC	CAP , CHIP	1000PF	1
C316	CCUS1H102KC	CAP , CHIP	1000PF	1
C317	CCUS1H223KC	CAP , CHIP	0.022UF	1
C318	CCUS1H223KC	CAP , CHIP	0.022UF	1
C319	CCUS1H223KC	CAP , CHIP	0.022UF	1
C320	CCUS1H223KC	CAP , CHIP	0.022UF	1
C321	CCUS1H681JA	CAP , CHIP	680PF	1
C322	CCUS1H681JA	CAP , CHIP	680PF	1
C323	CCUS1H681JA	CAP , CHIP	680PF	1
C324	CCUS1H681JA	CAP , CHIP	680PF	1
C325	CCUS1H681JA	CAP , CHIP	680PF	1
C326	CCUS1H681JA	CAP , CHIP	680PF	1
C327	CCUS1H681JA	CAP , CHIP	680PF	1
C328	CCUS1H681JA	CAP , CHIP	680PF	1
C329	CCUS1H681JA	CAP , CHIP	680PF	1
C330	CCUS1H681JA	CAP , CHIP	680PF	1
C331	CCUS1H681JA	CAP , CHIP	680PF	1
C332	CCUS1H681JA	CAP , CHIP	680PF	1
C333	CCUS1H681JA	CAP , CHIP	680PF	1
C334	CCUS1H681JA	CAP , CHIP	680PF	1
C335	CCUS1H681JA	CAP , CHIP	680PF	1
C336	CCUS1H681JA	CAP , CHIP	680PF	1
C337	CCUS1H223KC	CAP , CHIP	0.022UF	1
C338	CCUS1H223KC	CAP , CHIP	0.022UF	1
C339	CCUS1H223KC	CAP , CHIP	0.022UF	1
C340	CCUS1H223KC	CAP , CHIP	0.022UF	1
C350	CCUS1H102KC	CAP , CHIP	1000PF	1
C351	CCUS1H102KC	CAP , CHIP	1000PF	1
C352	CCUS1H102KC	CAP , CHIP	1000PF	1
C353	CCUS1H102KC	CAP , CHIP	1000PF	1
C354	CCUS1H102KC	CAP , CHIP	1000PF	1
C355	CCUS1H102KC	CAP , CHIP	1000PF	1
C356	CCUS1H102KC	CAP , CHIP	1000PF	1
C357	CCUS1H102KC	CAP , CHIP	1000PF	1
C369	CCUS1H223KC	CAP , CHIP	0.022UF	1
C370	CCUS1H223KC	CAP , CHIP	0.022UF	1
C381	CCUS1H223KC	CAP , CHIP	0.022UF	1
C382	CCUS1H223KC	CAP , CHIP	0.022UF	1
C383	CCUS1H223KC	CAP , CHIP	0.022UF	1
C384	CCUS1H223KC	CAP , CHIP	0.022UF	1
C385	CCUS1H223KC	CAP , CHIP	0.022UF	1
C386	CCUS1H223KC	CAP , CHIP	0.022UF	1
C387	CCUS1H223KC	CAP , CHIP	0.022UF	1
C388	CCUS1H223KC	CAP , CHIP	0.022UF	1
C391	CCUS1H151JA	CAP , CHIP	150PF	1
C392	CCUS1H151JA	CAP , CHIP	150PF	1
C393	CCUS1H151JA	CAP , CHIP	150PF	1
C394	CCUS1H102KC	CAP , CHIP	1000PF	1
C395	CCUS1H151JA	CAP , CHIP	150PF	1
C396	CCUS1H151JA	CAP , CHIP	150PF	1
C397	CCUS1H151JA	CAP , CHIP	150PF	1
C398	CCUS1H151JA	CAP , CHIP	150PF	1
C400	CCUS1H104KC	CAP , CHIP	0.1UF	1
C401	CCUS1H104KC	CAP , CHIP	0.1UF	1

INPUT PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
C402	CCUS1H471JA	CAP , CHIP	470PF	1
C403	CCUS1H471JA	CAP , CHIP	470PF	1
C405	CCUC1C225ZF	CAP , CHIP(2.2UF/16V/2012/Y5V)	2.2UF	1
C406	CCUC1C225ZF	CAP , CHIP(2.2UF/16V/2012/Y5V)	2.2UF	1
C410	CCUS1A105KC	CAP , CHIP	1UF	1
C411	CCUS1A105KC	CAP , CHIP	1UF	1
C416	CCUS1H473KC	CAP , CHIP	0.047UF	1
C420	CCUS1A105KC	CAP , CHIP	1UF	1
C421	CCUS1A105KC	CAP , CHIP	1UF	1
C422	CCUS1A105KC	CAP , CHIP	1UF	1
C423	CCUS1H220JA	CAP , CHIP	22PF	1
C424	CCUS1H220JA	CAP , CHIP	22PF	1
C425	CCUS1H223KC	CAP , CHIP	0.022UF	1
C426	CCUS1H223KC	CAP , CHIP	0.022UF	1
C427	CCUS1H223KC	CAP , CHIP	0.022UF	1
C432	HCEC1CRV2220T	CAP , CHIP ELECT	22UF/16V	1
C435	CCUS1H070DA	CAP , CHIP	7PF	1
C436	CCUS1H120JA	CAP , CHIP(12PF/50V/COG/1608)	12PF	1
C440	CCUS1H223KC	CAP , CHIP	0.022UF	1
C445	HCEC1CRV2220T	CAP , CHIP ELECT	22UF/16V	1
C459	CCUS1H151JA	CAP , CHIP	150PF	1
C532	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	0.1UF	1
C534	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF/50V	1
C535	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF/50V	1
C536	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF/50V	1
C537	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF/50V	1
C538	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF/50V	1
C539	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF/50V	1
C540	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF/50V	1
C601	CCUS1H104KC	CAP , CHIP	0.1UF	1
C603	CCUS1H104KC	CAP , CHIP	0.1UF	1
C605	CCUS1H104KC	CAP , CHIP	0.1UF	1
C607	CCUS1H104KC	CAP , CHIP	0.1UF	1
C609	CCUS1H104KC	CAP , CHIP	0.1UF	1
C611	CCUS1H104KC	CAP , CHIP	0.1UF	1
C613	CCUS1H104KC	CAP , CHIP	0.1UF	1
C615	CCUS1H104KC	CAP , CHIP	0.1UF	1
C617	CCUS1H104KC	CAP , CHIP	0.1UF	1
C619	CCUS1H104KC	CAP , CHIP	0.1UF	1
C621	CCUS1H104KC	CAP , CHIP	0.1UF	1
C623	CCUS1H104KC	CAP , CHIP	0.1UF	1
C625	CCUS1H104KC	CAP , CHIP	0.1UF	1
C627	CCUS1H104KC	CAP , CHIP	0.1UF	1
C629	CCUS1H104KC	CAP , CHIP	0.1UF	1
C631	CCUS1H104KC	CAP , CHIP	0.1UF	1
C701	CCUS1H150JA	CAP , CHIP(15PF/50V)	15PF/50V	1
C702	CCUS1H150JA	CAP , CHIP(15PF/50V)	15PF/50V	1
C704	CCUS1H104KC	CAP , CHIP	0.1UF	1
C705	CCUS1H104KC	CAP , CHIP	0.1UF	1
C707	CCUS1H102KC	CAP , CHIP	1000PF	1
C708	CCUS1H104KC	CAP , CHIP	0.1UF	1
C709	CCUS1H102KC	CAP , CHIP	1000PF	1
C711	CCUS1H102KC	CAP , CHIP	1000PF	1
C712	CCUS1H223KC	CAP , CHIP	0.022UF	1
C713	CCUS1H390JA	CAP , CHIP	39PF	1
C714	CCUS1H390JA	CAP , CHIP	39PF	1
C716	CCUS1H151JA	CAP , CHIP	150PF	1
C718	CCUS1H104KC	CAP , CHIP	0.1UF	1
C719	CCUS1H104KC	CAP , CHIP	0.1UF	1

INPUT PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
C722	CCUS1H104KC	CAP , CHIP	0.1UF	1
C723	CCUS1H473KC	CAP , CHIP	0.047UF	1
C725	CCUS1H104KC	CAP , CHIP	0.1UF	1
C727	CCUS1H104KC	CAP , CHIP	0.1UF	1
C729	CCUS1H104KC	CAP , CHIP	0.1UF	1
C731	CCUS1H104KC	CAP , CHIP	0.1UF	1
C733	CCUS1H104KC	CAP , CHIP	0.1UF	1
C734	CCUS1H102KC	CAP , CHIP	1000PF	1
C735	CCUS1H470JA	CAP , CHIP	47PF	1
C738	CCUS1A105KC	CAP , CHIP	1UF	1
C739	CCUS1H103KC	CAP , CHIP	0.01UF	1
C741	CCUS1H104KC	CAP , CHIP	0.1UF	1
C742	CCUS1H180JA	CAP , CHIP(18PF/50V)	18PF	1
C743	CCUS1H104KC	CAP , CHIP	0.1UF	1
C744	CCUS1H180JA	CAP , CHIP(18PF/50V)	18PF	1
C745	CCUS1H104KC	CAP , CHIP	0.1UF	1
C746	CCUS1H104KC	CAP , CHIP	0.1UF	1
C747	CCUS1H104KC	CAP , CHIP	0.1UF	1
C748	CCUS1H104KC	CAP , CHIP	0.1UF	1
C751	CCUS1H104KC	CAP , CHIP	0.1UF	1
C754	CCUS1H104KC	CAP , CHIP	0.1UF	1
C755	CCUS1H561JA	CAP , CHIP	560PF	1
C756	CCUS1H104KC	CAP , CHIP	0.1UF	1
C757	CCUS1H104KC	CAP , CHIP	0.1UF	1
C758	CCUS1H104KC	CAP , CHIP	0.1UF	1
C759	CCUS1H104KC	CAP , CHIP	0.1UF	1
C760	CCUS1H104KC	CAP , CHIP	0.1UF	1
C761	CCUS1H104KC	CAP , CHIP	0.1UF	1
C762	CCUS1H104KC	CAP , CHIP	0.1UF	1
C763	CCUS1H104KC	CAP , CHIP	0.1UF	1
C765	CCUS1H104KC	CAP , CHIP	0.1UF	1
C768	CCUS1H104KC	CAP , CHIP	0.1UF	1
C769	CCUS1H104KC	CAP , CHIP	0.1UF	1
C770	CCUS1H104KC	CAP , CHIP	0.1UF	1
C771	CCUS1H104KC	CAP , CHIP	0.1UF	1
C772	CCUS1H104KC	CAP , CHIP	0.1UF	1
C773	CCUS1H104KC	CAP , CHIP	0.1UF	1
C780	CCUS1H102KC	CAP , CHIP	1000PF	1
C781	CCUS1H223KC	CAP , CHIP	0.022UF	1
C782	CCUS1H103KC	CAP , CHIP	0.01UF	1
C783	CCUS1H103KC	CAP , CHIP	0.01UF	1
C784	CCUS1H103KC	CAP , CHIP	0.01UF	1
C785	CCUS1H103KC	CAP , CHIP	0.01UF	1
C786	CCUS1H103KC	CAP , CHIP	0.01UF	1
C787	CCUS1H103KC	CAP , CHIP	0.01UF	1
C789	CCUS1H103KC	CAP , CHIP	0.01UF	1
C790	CCUS1H103KC	CAP , CHIP	0.01UF	1
C791	CCUS1H104KC	CAP , CHIP	0.1UF	1
C792	CCUS1H104KC	CAP , CHIP	0.1UF	1
D201	CVD1SS355T	DIODE , CHIP	1SS355T	1
D202	CVD1SS355T	DIODE , CHIP	1SS355T	1
D203	CVD1SS355T	DIODE , CHIP	1SS355T	1
D204	CVD1SS355T	DIODE , CHIP	1SS355T	1
D205	CVD1SS355T	DIODE , CHIP	1SS355T	1
D206	CVD1SS355T	DIODE , CHIP	1SS355T	1
D207	CVD1SS355T	DIODE , CHIP	1SS355T	1
D208	CVD1SS355T	DIODE , CHIP	1SS355T	1
D209	CVD1SS355T	DIODE , CHIP	1SS355T	1
D210	CVD1SS355T	DIODE , CHIP	1SS355T	1

INPUT PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
D211	CVD1SS355T	DIODE , CHIP	1SS355T	1
D212	CVD1SS355T	DIODE , CHIP	1SS355T	1
D213	CVD1SS355T	DIODE , CHIP	1SS355T	1
D214	CVD1SS355T	DIODE , CHIP	1SS355T	1
D215	CVD1SS355T	DIODE , CHIP	1SS355T	1
D216	CVD1SS355T	DIODE , CHIP	1SS355T	1
D400	CVD1SS355T	DIODE , CHIP	1SS355T	1
D401	CVD1SS355T	DIODE , CHIP	1SS355T	1
D725	CVD1SS355T	DIODE , CHIP	1SS355T	1
D727	CVD1SS355T	DIODE , CHIP	1SS355T	1
IC20	CVINJW1197FC2	IC , SW(WITH VOLUME)	JRC	1
IC21	HVINJM2068MDTE1	I.C , OP AMP	JRC	1
IC22	HVINJM2068MDTE1	I.C , OP AMP	JRC	1
IC23	HVINJM2068MDTE1	I.C , OP AMP	JRC	1
IC24	HVINJM2068MDTE1	I.C , OP AMP	JRC	1
IC25	HVINJM2068MDTE1	I.C , OP AMP	JRC	1
IC31	HVINJM2068MDTE1	I.C , OP AMP	JRC	1
IC32	HVINJM2068MDTE1	I.C , OP AMP	JRC	1
IC33	HVINJM2068MDTE1	I.C , OP AMP	JRC	1
IC34	HVINJM2068MDTE1	I.C , OP AMP	JRC	1
IC41	HVINJM2068MDTE1	I.C , OP AMP	JRC	1
IC42	HVINJM2068MDTE1	I.C , OP AMP	JRC	1
IC43	HVINJM2137MTE1	I.C	JRC	1
IC70	HVITC74VHC157FT	I.C , 2-CHANNEL MUX	ST	1
IC71	HVITC74VHC157FT	I.C , 2-CHANNEL MUX	ST	1
IC72	HVI74HCU04AFNG	I.C , INVERTER	TOSHIBA	1
IC73	HVICS42528-CQ	I.C , CODEC + DIR	CIRRUS LOGIC	1
IC74	HVILC72723M	IC , PLL (RDS)	SANYO	1
IC75	CVICS49510-CQ	I.C , DSP	CIRRUS LOGIC	1
IC76	CVIES29LV800ET70TG	IC , FLASH MEMORY (8Mbit)	EXCELSEMI	1
IC77	HVI57V161610ET7	SDRAM 16M 7NS	HYNIX	1
IC78	HVINJM2391DL133	I.C , CHIP REGULATOR (+3.3V)	JRC	1
IC79	CVIKIA1117S18	I.C , REGULATOR(SOT-223)	HTC	1
IC88	CVIKIA1117S33	I.C , REGULATOR(SOT-223)	HTC	1
IC89	CVIM24C32WMN6TP	I.C , EEPROM (32 Kbit)	ST	1
IC90	CVIT5CC1	I.C , FLASH U-COM	TOSHIBA	1
IC91	HVI74ACT04MTR	I.C , HEX	TOSHIBA	1
JK40	HJJ9L003Z	JACK , IPOD	IPOD JACK	1
L701	HLZ9Z014Z	CHIP , BEAD	HU-1H4516-600JT	1
L702	HLZ9Z014Z	CHIP , BEAD	HU-1H4516-600JT	1
L703	HLZ9Z014Z	CHIP , BEAD	HU-1H4516-600JT	1
L704	HLZ9R005Z	BEAD CHIP 60(1608 SIZE)	HH-1M1608-600	1
L705	HLZ9R005Z	BEAD CHIP 60(1608 SIZE)	HH-1M1608-600	1
Q402	HVTKRC102S	TR , CHIP	KRC102S	1
Q729	HVTKRC107S	T.R , CHIP	KRC107S	1
Q730	HVTKRC107S	T.R , CHIP	KRC107S	1
Q732	HVTKRC107S	T.R , CHIP	KRC107S	1
Q734	HVTKRC107S	T.R , CHIP	KRC107S	1
RN61	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K OHM/1608*4	1
RN62	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K OHM/1608*4	1
RN63	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K OHM/1608*4	1
RN64	CRJ104DJ101T	RES , CHIP NETWORK(1/16W, 100OHM	100 OHM/1608*4	1
RN65	CRJ104DJ101T	RES , CHIP NETWORK(1/16W, 100OHM	100 OHM/1608*4	1
RN66	CRJ104DJ101T	RES , CHIP NETWORK(1/16W, 100OHM	100 OHM/1608*4	1
RN71	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K OHM/1608*4	1
RN72	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K OHM/1608*4	1
RN73	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K OHM/1608*4	1
RN74	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
RN75	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1

INPUT PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
RN76	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
RN77	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
RN78	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
RN79	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
RN80	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
RN81	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
RN82	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
RN83	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
RN84	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
RN85	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
RN86	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K OHM/1608*4	1
RN87	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
RN88	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K OHM/1608*4	1
RN89	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K OHM/1608*4	1
RN90	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
RN91	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
RN92	CRJ104DJ101T	RES , CHIP NETWORK(1/16W, 100OHM	100 OHM/1608*4	1
R201	CRJ10DJ101T	RES , CHIP	100 OHM	1
R202	CRJ10DJ101T	RES , CHIP	100 OHM	1
R203	CRJ10DJ101T	RES , CHIP	100 OHM	1
R204	CRJ10DJ101T	RES , CHIP	100 OHM	1
R205	CRJ10DJ101T	RES , CHIP	100 OHM	1
R206	CRJ10DJ101T	RES , CHIP	100 OHM	1
R207	CRJ10DJ101T	RES , CHIP	100 OHM	1
R208	CRJ10DJ101T	RES , CHIP	100 OHM	1
R209	CRJ10DJ101T	RES , CHIP	100 OHM	1
R210	CRJ10DJ101T	RES , CHIP	100 OHM	1
R211	CRJ10DJ101T	RES , CHIP	100 OHM	1
R212	CRJ10DJ101T	RES , CHIP	100 OHM	1
R213	CRJ10DJ101T	RES , CHIP	100 OHM	1
R214	CRJ10DJ101T	RES , CHIP	100 OHM	1
R215	CRJ10DJ101T	RES , CHIP	100 OHM	1
R216	CRJ10DJ101T	RES , CHIP	100 OHM	1
R219	CRJ10DJ101T	RES , CHIP	100 OHM	1
R220	CRJ10DJ101T	RES , CHIP	100 OHM	1
R221	CRJ10DJ101T	RES , CHIP	100 OHM	1
R222	CRJ10DJ101T	RES , CHIP	100 OHM	1
R223	CRJ10DJ101T	RES , CHIP	100 OHM	1
R224	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R225	CRJ10DJ101T	RES , CHIP	100 OHM	1
R226	CRJ10DJ101T	RES , CHIP	100 OHM	1
R227	CRJ10DJ474T	RES , CHIP	470K OHM	1
R228	CRJ10DJ474T	RES , CHIP	470K OHM	1
R229	CRJ10DJ474T	RES , CHIP	470K OHM	1
R230	CRJ10DJ474T	RES , CHIP	470K OHM	1
R231	CRJ10DJ474T	RES , CHIP	470K OHM	1
R232	CRJ10DJ474T	RES , CHIP	470K OHM	1
R233	CRJ10DJ474T	RES , CHIP	470K OHM	1
R234	CRJ10DJ474T	RES , CHIP	470K OHM	1
R235	CRJ10DJ474T	RES , CHIP	470K OHM	1
R236	CRJ10DJ474T	RES , CHIP	470K OHM	1
R237	CRJ10DJ474T	RES , CHIP	470K OHM	1
R238	CRJ10DJ474T	RES , CHIP	470K OHM	1
R239	CRJ10DJ474T	RES , CHIP	470K OHM	1
R240	CRJ10DJ474T	RES , CHIP	470K OHM	1
R241	CRJ10DJ474T	RES , CHIP	470K OHM	1
R242	CRJ10DJ474T	RES , CHIP	470K OHM	1
R245	CRJ10DJ474T	RES , CHIP	470K OHM	1
R246	CRJ10DJ474T	RES , CHIP	470K OHM	1

INPUT PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
R247	CRJ10DJ474T	RES , CHIP	470K OHM	1
R248	CRJ10DJ474T	RES , CHIP	470K OHM	1
R249	CRJ10DJ474T	RES , CHIP	470K OHM	1
R250	CRJ10DJ103T	RES , CHIP	10K OHM	1
R251	CRJ10DJ474T	RES , CHIP	470K OHM	1
R252	CRJ10DJ474T	RES , CHIP	470K OHM	1
R253	CRJ10DJ4R7T	RES , CHIP	4.7 OHM	1
R254	CRJ10DJ4R7T	RES , CHIP	4.7 OHM	1
R255	CRJ10DJ4R7T	RES , CHIP	4.7 OHM	1
R256	CRJ10DJ4R7T	RES , CHIP	4.7 OHM	1
R257	CRJ10DJ4R7T	RES , CHIP	4.7 OHM	1
R258	CRJ10DJ4R7T	RES , CHIP	4.7 OHM	1
R259	CRJ10DJ4R7T	RES , CHIP	4.7 OHM	1
R260	CRJ10DJ4R7T	RES , CHIP	4.7 OHM	1
R261	CRJ10DJ184T	RES , CHIP	180K OHM	1
R262	CRJ10DJ184T	RES , CHIP	180K OHM	1
R263	CRJ10DJ184T	RES , CHIP	180K OHM	1
R264	CRJ10DJ184T	RES , CHIP	180K OHM	1
R265	CRJ10DJ184T	RES , CHIP	180K OHM	1
R266	CRJ10DJ184T	RES , CHIP	180K OHM	1
R267	CRJ10DJ184T	RES , CHIP	180K OHM	1
R268	CRJ10DJ184T	RES , CHIP	180K OHM	1
R271	CRJ10DJ102T	RES , CHIP	1K OHM	1
R272	CRJ10DJ102T	RES , CHIP	1K OHM	1
R273	CRJ10DJ102T	RES , CHIP	1K OHM	1
R274	CRJ10DJ102T	RES , CHIP	1K OHM	1
R275	CRJ10DJ102T	RES , CHIP	1K OHM	1
R276	CRJ10DJ102T	RES , CHIP	1K OHM	1
R277	CRJ10DJ102T	RES , CHIP	1K OHM	1
R278	CRJ10DJ102T	RES , CHIP	1K OHM	1
R279	CRJ10DJ101T	RES , CHIP	100 OHM	1
R280	CRJ10DJ101T	RES , CHIP	100 OHM	1
R281	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R282	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R283	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R284	CRJ10DJ912T	RES , CHIP	9.1K OHM/1608	1
R285	CRJ10DJ512T	RES , CHIP	9.1K OHM	1
R286	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R287	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R288	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R289	CRJ10DJ101T	RES , CHIP	100 OHM	1
R290	CRJ10DJ101T	RES , CHIP	100 OHM	1
R291	CRJ10DJ184T	RES , CHIP	180K OHM	1
R292	CRJ10DJ184T	RES , CHIP	180K OHM	1
R293	CRJ10DJ184T	RES , CHIP	180K OHM	1
R294	CRJ10DJ184T	RES , CHIP	180K OHM	1
R295	CRJ10DJ184T	RES , CHIP	180K OHM	1
R296	CRJ10DJ184T	RES , CHIP	180K OHM	1
R297	CRJ10DJ184T	RES , CHIP	180K OHM	1
R298	CRJ10DJ184T	RES , CHIP	180K OHM	1
R301	CRJ10DJ122T	RES , CHIP	1.2K OHM	1
R302	CRJ10DJ122T	RES , CHIP	1.2K OHM	1
R303	CRJ10DJ122T	RES , CHIP	1.2K OHM	1
R304	CRJ10DJ122T	RES , CHIP	1.2K OHM	1
R305	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R306	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R307	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R308	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R309	CRJ10DJ272T	RES , CHIP	2.7K OHM	1

INPUT PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
R310	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R311	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R312	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R313	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R314	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R315	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R316	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R317	CRJ10DJ561T	RES , CHIP	560 OHM	1
R318	CRJ10DF3920T	RES. CHIP (392R 1%)	392 OHM	1
R321	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R322	CRJ10DJ821T	RES , CHIP	820 OHM	1
R323	CRJ10DJ821T	RES , CHIP	820 OHM	1
R324	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R325	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R326	CRJ10DJ821T	RES , CHIP	820 OHM	1
R327	CRJ10DJ821T	RES , CHIP	820 OHM	1
R328	CRJ10DJ103T	RES , CHIP	10K OHM	1
R329	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R330	CRJ10DJ821T	RES , CHIP	820 OHM	1
R331	CRJ10DJ821T	RES , CHIP	820 OHM	1
R332	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R333	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R334	CRJ10DJ821T	RES , CHIP	820 OHM	1
R335	CRJ10DJ821T	RES , CHIP	820 OHM	1
R336	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R341	CRJ10DJ821T	RES , CHIP	820 OHM	1
R344	CRJ10DJ821T	RES , CHIP	820 OHM	1
R345	CRJ10DJ821T	RES , CHIP	820 OHM	1
R348	CRJ10DJ821T	RES , CHIP	820 OHM	1
R349	CRJ10DJ821T	RES , CHIP	820 OHM	1
R352	CRJ10DJ821T	RES , CHIP	820 OHM	1
R353	CRJ10DJ821T	RES , CHIP	820 OHM	1
R356	CRJ10DJ821T	RES , CHIP	820 OHM	1
R361	CRJ10DJ104T	RES , CHIP	100K OHM	1
R362	CRJ10DJ104T	RES , CHIP	100K OHM	1
R363	CRJ10DJ104T	RES , CHIP	100K OHM	1
R364	CRJ10DJ104T	RES , CHIP	100K OHM	1
R365	CRJ10DJ104T	RES , CHIP	100K OHM	1
R366	CRJ10DJ104T	RES , CHIP	100K OHM	1
R367	CRJ10DJ104T	RES , CHIP	100K OHM	1
R368	CRJ10DJ104T	RES , CHIP	100K OHM	1
R371	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R372	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R373	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R374	CRJ10DJ103T	RES , CHIP	10K OHM	1
R375	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R376	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R377	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R378	CRJ10DJ512T	RES , CHIP	5.1K OHM	1
R381	CRJ10DJ561T	RES , CHIP	560 OHM	1
R382	CRJ10DJ561T	RES , CHIP	560 OHM	1
R383	CRJ10DJ561T	RES , CHIP	560 OHM	1
R384	CRJ10DJ561T	RES , CHIP	560 OHM	1
R385	CRJ10DJ561T	RES , CHIP	560 OHM	1
R386	CRJ10DJ561T	RES , CHIP	560 OHM	1
R387	CRJ10DJ561T	RES , CHIP	560 OHM	1
R388	CRJ10DJ561T	RES , CHIP	560 OHM	1
R389	CRJ10DJ184T	RES , CHIP	180K OHM	1
R390	CRJ10DJ184T	RES , CHIP	180K OHM	1

INPUT PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
R391	CRJ10DF3920T	RES. CHIP (392R 1%)	392 OHM	1
R392	CRJ10DF3920T	RES. CHIP (392R 1%)	392 OHM	1
R393	CRJ10DF3920T	RES. CHIP (392R 1%)	392 OHM	1
R394	CRJ10DF3920T	RES. CHIP (392R 1%)	392 OHM	1
R395	CRJ10DF3920T	RES. CHIP (392R 1%)	392 OHM	1
R396	CRJ10DF3920T	RES. CHIP (392R 1%)	392 OHM	1
R397	CRJ10DF3920T	RES. CHIP (392R 1%)	392 OHM	1
R398	CRJ10DF3920T	RES. CHIP (392R 1%)	392 OHM	1
R400	CRJ10DJ4R7T	RES , CHIP	4.7 OHM	1
R401	CRJ10DJ4R7T	RES , CHIP	4.7 OHM	1
R402	CRJ10DF5493T	RES , CHIP 549KOHM/1608/1%	543K OHM	1
R403	CRJ10DJ0R0T	RES , CHIP	0 OHM	1
R404	CRJ10DJ103T	RES , CHIP	10K OHM	1
R405	CRJ10DJ103T	RES , CHIP	10K OHM	1
R406	CRJ10DJ474T	RES , CHIP	470K OHM	1
R407	CRJ10DJ474T	RES , CHIP	470K OHM	1
R421	CRJ10DJ222T	RES , CHIP	2.2K OHM	1
R422	CRJ10DJ474T	RES , CHIP	470K OHM	1
R430	CRJ10DJ473T	RES , CHIP	47K OHM	1
R431	CRJ10DJ473T	RES , CHIP	47K OHM	1
R432	CRJ18AJ221T	RES , CHIP	220 OHM	1
R433	CRJ18AJ221T	RES , CHIP	220 OHM	1
R434	CRJ10DJ103T	RES , CHIP	10K OHM	1
R435	CRJ10DJ103T	RES , CHIP	10K OHM	1
R436	CRJ10DJ222T	RES , CHIP	2.2K OHM	1
R437	CRJ10DJ222T	RES , CHIP	2.2K OHM	1
R438	CRJ10DJ222T	RES , CHIP	2.2K OHM	1
R439	CRJ10DJ222T	RES , CHIP	2.2K OHM	1
R440	CRJ10DJ220T	RES , CHIP	2.2K OHM	1
R441	CRJ10DJ472T	RES , CHIP	4.7K OHM	1
R442	CRJ10DJ472T	RES , CHIP	4.7K OHM	1
R443	CRJ10DJ202T	RES , CHIP	2K OHM	1
R445	CRJ10DJ202T	RES , CHIP	2K OHM	1
R446	CRJ10DJ431T	RES , CHIP	430 OHM	1
R447	CRJ10DJ821T	RES , CHIP	820 OHM	1
R449	CRJ10DJ0R0T	RES , CHIP	0 OHM	1
R453	CRJ10DJ220T	RES , CHIP	22 OHM	1
R531	CRJ10DJ152T	RES , CHIP	1.5K OHM	1
R532	CRJ10DJ152T	RES , CHIP	1.5K OHM	1
R533	CRJ10DJ152T	RES , CHIP	1.5K OHM	1
R534	CRJ10DJ152T	RES , CHIP	1.5K OHM	1
R701	CRJ10DJ103T	RES , CHIP	10K OHM	1
R702	CRJ10DJ103T	RES , CHIP	10K OHM	1
R703	CRJ10DJ103T	RES , CHIP	10K OHM	1
R706	CRJ10DJ222T	RES , CHIP	2.2 KOHM	1
R707	CRJ10DJ222T	RES , CHIP	2.2 KOHM	1
R708	CRJ10DJ101T	RES , CHIP	100 OHM	1
R709	CRJ10DJ103T	RES , CHIP	10K OHM	1
R710	CRJ10DJ103T	RES , CHIP	10K OHM	1
R711	CRJ10DJ101T	RES , CHIP	100 OHM	1
R712	CRJ10DJ820T	RES , CHIP	82 OHM	1
R713	CRJ10DJ101T	RES , CHIP	100 OHM	1
R714	CRJ10DJ104T	RES , CHIP	100K OHM	1
R715	CRJ10DJ104T	RES , CHIP	100K OHM	1
R716	CRJ10DJ472T	RES , CHIP	4.7 OHM	1
R717	CRJ10DJ0R0T	RES , CHIP	0 OHM	1
R718	CRJ10DJ332T	RES , CHIP	3.3K. OHM	1
R719	CRJ10DJ0R0T	RES , CHIP	0 OHM	1
R720	CRJ10DJ0R0T	RES , CHIP	0 OHM	1

INPUT PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
R721	CRJ10DJ330T	RES , CHIP	33 OHM	1
R724	CRJ10DJ101T	RES , CHIP	100 OHM	1
R725	CRJ10DJ0R0T	RES , CHIP	0 OHM	1
R726	CRJ10DJ100T	RES , CHIP	10 OHM	1
R727	CRJ10DJ0R0T	RES , CHIP	0 OHM	1
R728	CRJ10DJ102T	RES , CHIP	1K OHM	1
R729	CRJ10DJ102T	RES , CHIP	1K OHM	1
R730	CRJ10DJ102T	RES , CHIP	1K OHM	1
R731	CRJ10DJ102T	RES , CHIP	1K OHM	1
R737	CRJ10DJ330T	RES , CHIP	33 OHM	1
R738	CRJ10DJ103T	RES , CHIP	10K OHM	1
R739	CRJ10DJ1R0T	RES , CHIP	1 OHM	1
R740	CRJ10DJ820T	RES , CHIP	82 OHM	1
R741	CRJ10DJ330T	RES , CHIP	33 OHM	1
R742	CRJ10DJ330T	RES , CHIP	33 OHM	1
R743	CRJ10DJ330T	RES , CHIP	33 OHM	1
R744	CRJ10DJ0R0T	RES , CHIP	0 OHM	1
R747	CRJ10DJ330T	RES , CHIP	33 OHM	1
R748	CRJ10DJ330T	RES , CHIP	33 OHM	1
R751	CRJ10DJ820T	RES , CHIP	82 OHM	1
R752	CRJ10DJ101T	RES , CHIP	100 OHM	1
R753	CRJ10DJ103T	RES , CHIP	10K OHM	1
R754	CRJ10DJ103T	RES , CHIP	10K OHM	1
R756	CRJ10DJ103T	RES , CHIP	10K OHM	1
R759	CRJ10DJ101T	RES , CHIP	100 OHM	1
R760	CRJ10DJ105T	RES , CHIP	1M OHM	1
R761	CRJ10DJ102T	RES , CHIP	1K OHM	1
R762	CRJ10DJ102T	RES , CHIP	1K OHM	1
R763	CRJ10DJ472T	RES , CHIP	4.7K OHM	1
R765	CRJ10DJ103T	RES , CHIP	10K OHM	1
R766	CRJ10DJ103T	RES , CHIP	10K OHM	1
R767	CRJ10DJ301T	RES , CHIP	300 OHM	1
R768	CRJ10DJ562T	RES , CHIP	5.6K OHM	1
R770	CRJ10DJ100T	RES , CHIP	10 OHM	1
R771	CRJ10DJ103T	RES , CHIP	10K OHM	1
R772	CRJ10DJ473T	RES , CHIP	47K OHM	1
R773	CRJ10DJ332T	RES , CHIP	3.3K OHM	1
R774	CRJ10DJ332T	RES , CHIP	3.3K OHM	1
R775	CRJ10DJ332T	RES , CHIP	3.3K OHM	1
R776	CRJ10DJ332T	RES , CHIP	3.3K OHM	1
R777	CRJ10DJ102T	RES , CHIP	1K OHM	1
R778	CRJ10DJ103T	RES , CHIP	10K OHM	1
R779	CRJ10DJ103T	RES , CHIP	10K OHM	1
R780	CRJ10DJ103T	RES , CHIP	10K OHM	1
R781	CRJ10DJ103T	RES , CHIP	10K OHM	1
R782	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R783	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R784	CRJ10DJ473T	RES , CHIP	47K OHM	1
R785	CRJ10DJ104T	RES , CHIP	100K OHM	1
R786	CRJ10DJ471T	RES , CHIP	470 OHM	1
R787	CRJ10DJ103T	RES , CHIP	10K OHM	1
R788	CRJ10DJ103T	RES , CHIP	10K OHM	1
R789	CRJ10DJ103T	RES , CHIP	10K OHM	1
R790	CRJ10DJ103T	RES , CHIP	10K OHM	1
R793	CRJ10DJ103T	RES , CHIP	10K OHM	1
R799	CRJ10DJ103T	RES , CHIP	10K OHM	1
X702	HOX27000E180S	CRYSTAL , CHIP(27MHZ,SMD)	27MHz	1
C261	CCEA1EH470T	CAP , ELECT	47UF 25V	1
C262	CCEA1EH470T	CAP , ELECT	47UF 25V	1

INPUT PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
C263	CCEA1EH470T	CAP , ELECT	47UF 25V	1
C264	CCEA1EH470T	CAP , ELECT	47UF 25V	1
C265	CCEA1EH470T	CAP , ELECT	47UF 25V	1
C266	CCEA1EH470T	CAP , ELECT	47UF 25V	1
C267	CCEA1EH470T	CAP , ELECT	47UF 25V	1
C268	CCEA1EH470T	CAP , ELECT	47UF 25V	1
C270	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C271	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C272	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C273	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C275	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C276	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C281	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C282	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C283	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C284	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C285	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C286	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C287	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C288	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C292	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C294	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C341	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C342	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C343	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C344	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C345	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C346	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C347	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C348	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C349	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C358	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C359	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C360	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C371	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C372	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C373	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C374	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C375	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C376	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C377	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C378	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C389	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C390	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C417	CCEA1CH471T	CAP , ELECT	470UF 16V	1
C430	CCEA1AH331T	CAP , ELECT	330UF 10V	1
C431	CCEA1CH221T	CAP , ELECT	220UF 16V	1
C433	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C600	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C602	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C604	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C606	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C608	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C610	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C612	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C614	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C616	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C618	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C620	CCEA1CH101T	CAP , ELECT	100UF 16V	1

INPUT PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
C622	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C624	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C626	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C628	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C630	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C703	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C706	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C715	CCEA1HH4R7T	CAP , ELECT	4.7UF 50V	1
C717	CCEA1HH4R7T	CAP , ELECT	4.7UF 50V	1
C720	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C721	CCEA1AH471T	CAP , ELECT	470UF 10V	1
C724	CCEA1AH471T	CAP , ELECT	470UF 10V	1
C726	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C728	CCEA1AH471T	CAP , ELECT	470UF 10V	1
C730	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C736	CCEA1HH2R2T	CAP , ELECT	2.2UF 50V	1
C737	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C740	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C749	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C750	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C752	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C753	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C764	CCEA0JH102T	CAP , ELECT	1000UF 6.3V	1
C766	CCEA0JH102T	CAP , ELECT	1000UF 6.3V	1
C767	CCEA1CKS100T	CAP , ELECT	10UF 16V	1
C774	CCEA1CH101T	CAP , ELECT	100UF 16V	1
D221	CVD1N4003ST	DIODE , RECT	1N4003	1
D222	CVD1N4003ST	DIODE , RECT	1N4003	1
D402	CVD1N4003SRT	DIODE , RECT	1N4003	1
D703	CVD1N4003ST	DIODE , RECT	1N4003	1
D704	CVD1N4003SRT	DIODE , RECT	1N4003	1
IC87	HVIRE5VL28CATZ	IC , RESET	RICOH	1
Q301	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
Q302	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
Q303	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
Q304	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
Q305	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
Q306	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
Q307	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
Q308	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
Q311	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
Q731	HVTKSA1175YT	T.R	KSA1175Y(DEAD)	1
Q733	HVTKSC2785YT	T.R	KSC2785Y	1
BN11	CWZAVR145BN46	WIRE ASS'Y (SHIELD)	WIRE ASS'Y (SHIELD)	1
BN19	CJP09GA117ZY	WAFER	WAFER	1
BN44	CJP07GA117ZY	WAFER	WAFER	1
BN49	CWB2B905080EN	WIRE ASS'Y	WIRE	1
CN10	CJP04GB46ZY	WAFER	WAFER	1
CN11	CJP17GA117ZY	WAFER	WAFER	1
CN12	CJP21GA115ZY	WAFER , CARD CABLE	WAFER	1
CN13	CJP13GA115ZY	WAFER , CARD CABLE	WAFER	1
CN14	CJP17GA117ZY	WAFER	WAFER	1
CN15	CJP15GA117ZY	WAFER , CARD CABLE	WAFER	1
CN17	CJP12GB142ZB	PIN HEADER(12PIN, 2.54mm, ANGLE)	PIN HEADER	1
CN18	CJP05GA19ZY	WAFER, STRAIGHT, 5PIN	WAFER	1
CN19	CJP09GA117ZY	WAFER	WAFER	1
CN20	CJP05GA01ZY	WAFER(YMW025-05R)	WAFER	1
CN22	CJP06GA19ZY	WAFER , STRAIGHT DVD LOADER	WAFER	1
CN46	CJP03GB46ZY	WAFER , ANGLE , 3PIN	WAFER	1

INPUT PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
CN47	CJP07GA117ZY	WAFER	WAFER	1
CN49	CJP05GA19ZY	WAFER, STRAIGHT, 5PIN	WAFER	1
CN72	CJP17GA117ZY	WAFER	WAFER	1
C732	CCEA0JKR3222E	CAP , ELECT	2200UF 6.3V	1
ET02	CMD1A570	BRACKET , PCB	BARCKET	1
IC36	HVIKIA7808API	I.C , REGULATOR +8V	KIA7808 (KEC)	1
IC37	CVIKIA7908PI	I.C , REGULATOR(TO-220IS)	KIA7908PI TO-220IS	1
JK11	CJJ4R019W	TERMINAL , IN/OUT	TERMINAL	1
JK12	CJJ4R019W	TERMINAL , IN/OUT	TERMINAL	1
JK13	CJJ4R019W	TERMINAL , IN/OUT	TERMINAL	1
JK14	CJJ4R037W	JACK , BOARD	JACK	1
X701	HOX24576E150TF	CRYSTAL	24.576MHZ	1
X703	HOX04332E200C	CRYSTAL	4.332MHZ	1
HUDSON PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
	COP11915O	AVR247/230 HUDSON PCB ASS'Y	ASS'Y	1
	CHG1A306	CUSHION	CUSHION	2,5
CN81	CJP44HA213ZB	WAFER , HOUSING(2MM PITCH)	WAFER	1
C803	CCUS1H104KC	CAP , CHIP	0.1UF	1
C804	CCUS1H104KC	CAP , CHIP	0.1UF	1
C805	CCUS1H101JA	CAP , CHIP	100PF	1
C806	CCUS1H470JA	CAP , CHIP	47UF	1
C807	CCUS1H470JA	CAP , CHIP	47UF	1
C808	CCUS1H104KC	CAP , CHIP	0.1UF	1
C809	CCUS1H104KC	CAP , CHIP	0.1UF	1
C810	CCUS1H104KC	CAP , CHIP	0.1UF	1
C811	CCUS1H104KC	CAP , CHIP	0.1UF	1
C812	CCUS1H104KC	CAP , CHIP	0.1UF	1
C813	CCUS1H104KC	CAP , CHIP	0.1UF	1
C814	CCUS1H104KC	CAP , CHIP	0.1UF	1
C815	CCUS1H104KC	CAP , CHIP	0.1UF	1
C816	CCUS1H104KC	CAP , CHIP	0.1UF	1
C817	CCUS1H104KC	CAP , CHIP	0.1UF	1
C818	CCUS1H104KC	CAP , CHIP	0.1UF	1
C819	CCUS1H104KC	CAP , CHIP	0.1UF	1
C820	CCUS1H104KC	CAP , CHIP	0.1UF	1
C821	CCUS1H104KC	CAP , CHIP	0.1UF	1
C822	CCUS1H104KC	CAP , CHIP	0.1UF	1
C823	CCUS1H104KC	CAP , CHIP	0.1UF	1
C824	CCUS1H104KC	CAP , CHIP	0.1UF	1
C825	CCUS1H104KC	CAP , CHIP	0.1UF	1
C826	CCUS1H104KC	CAP , CHIP	0.1UF	1
C827	CCUS1H104KC	CAP , CHIP	0.1UF	1
C828	CCUS1H104KC	CAP , CHIP	0.1UF	1
C829	CCUS1H104KC	CAP , CHIP	0.1UF	1
C830	CCUS1H104KC	CAP , CHIP	0.1UF	1
C831	CCUS1H104KC	CAP , CHIP	0.1UF	1
C832	CCUS1H104KC	CAP , CHIP	0.1UF	1
C833	CCUS1H104KC	CAP , CHIP	0.1UF	1
C834	CCUS1H104KC	CAP , CHIP	0.1UF	1
C835	CCUS1H104KC	CAP , CHIP	0.1UF	1
C836	CCUS1H104KC	CAP , CHIP	0.1UF	1
C837	CCUS1H104KC	CAP , CHIP	0.1UF	1
C838	CCUS1H104KC	CAP , CHIP	0.1UF	1
C839	CCUS1H104KC	CAP , CHIP	0.1UF	1
C840	CCUS1H104KC	CAP , CHIP	0.1UF	1
C841	CCUS1H104KC	CAP , CHIP	0.1UF	1
C842	CCUS1H104KC	CAP , CHIP	0.1UF	1

HUDSON PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
C843	CCUS1H104KC	CAP , CHIP	0.1UF	1
C844	CCUS1H104KC	CAP , CHIP	0.1UF	1
C845	CCUS1H104KC	CAP , CHIP	0.1UF	1
C846	CCUS1H104KC	CAP , CHIP	0.1UF	1
C847	CCUS1H392KC	CAP , CHIP CERAMIC(1608, 3900p)	3900PF	1
C848	CCUS1H821JA	CAP , CHIP	820PF	1
C849	CCUS1H104KC	CAP , CHIP	0.1UF	1
C850	CCUS1H104KC	CAP , CHIP	0.1UF	1
C851	CCUS1H104KC	CAP , CHIP	0.1UF	1
C852	CCUS1H104KC	CAP , CHIP	0.1UF	1
C853	CCUS1H104KC	CAP , CHIP	0.1UF	1
C854	CCUS1H104KC	CAP , CHIP	0.1UF	1
C855	CCUS1H104KC	CAP , CHIP	0.1UF	1
C856	CCUS1A105KC	CAP , CHIP	1UF	1
C857	CCUS1A105KC	CAP , CHIP	1UF	1
C858	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C859	CCUS1H104KC	CAP , CHIP	0.1UF	1
C860	CCUS1H104KC	CAP , CHIP	0.1UF	1
C861	CCUS1H104KC	CAP , CHIP	0.1UF	1
C862	CCUS1H104KC	CAP , CHIP	0.1UF	1
C863	CCUS1H104KC	CAP , CHIP	0.1UF	1
C864	CCUS1H104KC	CAP , CHIP	0.1UF	1
C865	CCUS1H104KC	CAP , CHIP	0.1UF	1
C866	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C867	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C868	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C869	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C870	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C871	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C872	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C873	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C874	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C875	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C876	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C877	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C878	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C879	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C880	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C881	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C882	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C883	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C884	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C885	CCUS1H104KC	CAP , CHIP	0.1UF	1
C886	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C887	CCUS1H104KC	CAP , CHIP	0.1UF	1
C888	CCUS1H104KC	CAP , CHIP	0.1UF	1
C889	CCUS1H104KC	CAP , CHIP	0.1UF	1
C891	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C892	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C893	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C894	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C895	HCEC0JRV2101T	CAP , CHIP ELECT	100UF/6.3V	1
C896	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C897	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C898	CCUS1H104KC	CAP , CHIP	0.1UF	1
C899	CCUS1H104KC	CAP , CHIP	0.1UF	1
C900	CCUS1H104KC	CAP , CHIP	0.1UF	1
C901	CCUS1H104KC	CAP , CHIP	0.1UF	1

HUDSON PCB ASSY				
Ref. #	Part Number	Description	Value	Qty
C902	CCUS1H104KC	CAP , CHIP	0.1UF	1
C903	CCUS1H104KC	CAP , CHIP	0.1UF	1
C904	CCUS1H104KC	CAP , CHIP	0.1UF	1
C905	CCUS1H104KC	CAP , CHIP	0.1UF	1
C906	CCUS1H104KC	CAP , CHIP	0.1UF	1
C907	CCUS1H104KC	CAP , CHIP	0.1UF	1
C908	CCUS1H104KC	CAP , CHIP	0.1UF	1
C909	CCUS1H104KC	CAP , CHIP	0.1UF	1
C910	CCUS1H103KC	CAP , CHIP	0.01UF	1
C911	CCUS1H103KC	CAP , CHIP	0.01UF	1
C912	CCUS1H104KC	CAP , CHIP	0.1UF	1
C913	CCUS1H104KC	CAP , CHIP	0.1UF	1
C914	CCUS1H104KC	CAP , CHIP	0.1UF	1
C915	CCUS1H104KC	CAP , CHIP	0.1UF	1
C916	CCUS1H104KC	CAP , CHIP	0.1UF	1
C917	CCUS1H104KC	CAP , CHIP	0.1UF	1
C918	CCUS1H104KC	CAP , CHIP	0.1UF	1
C919	CCUS1H104KC	CAP , CHIP	0.1UF	1
C920	CCUS1H104KC	CAP , CHIP	0.1UF	1
C921	CCUS1H104KC	CAP , CHIP	0.1UF	1
C922	CCUS1H180JA	CAP , CHIP(18PF/50V)	18PF	1
C923	CCUS1H180JA	CAP , CHIP(18PF/50V)	18PF	1
C924	CCUS1H104KC	CAP , CHIP	0.1UF	1
C925	CCUS1H104KC	CAP , CHIP	0.1UF	1
C926	CCUS1H104KC	CAP , CHIP	0.1UF	1
C927	CCUS1H104KC	CAP , CHIP	0.1UF	1
C928	CCUS1H104KC	CAP , CHIP	0.1UF	1
C929	CCUS1H104KC	CAP , CHIP	0.1UF	1
C930	CCUS1H104KC	CAP , CHIP	0.1UF	1
C931	CCUS1H104KC	CAP , CHIP	0.1UF	1
C932	CCUS1H104KC	CAP , CHIP	0.1UF	1
C933	CCUS1H104KC	CAP , CHIP	0.1UF	1
C934	CCUS1H104KC	CAP , CHIP	0.1UF	1
C935	CCUS1H104KC	CAP , CHIP	0.1UF	1
C936	CCUS1H103KC	CAP , CHIP	0.01UF	1
C937	CCUS1H104KC	CAP , CHIP	0.1UF	1
C938	CCUS1H104KC	CAP , CHIP	0.1UF	1
C939	CCUS1H104KC	CAP , CHIP	0.1UF	1
C941	CCUS1H104KC	CAP , CHIP	0.1UF	1
C942	CCUS1H104KC	CAP , CHIP	0.1UF	1
C944	CCUS1H104KC	CAP , CHIP	0.1UF	1
C945	CCUS1H104KC	CAP , CHIP	0.1UF	1
C946	CCUS1H104KC	CAP , CHIP	0.1UF	1
C947	CCUS1H104KC	CAP , CHIP	0.1UF	1
C948	CCUS1H104KC	CAP , CHIP	0.1UF	1
C949	CCUS1H104KC	CAP , CHIP	0.1UF	1
C950	CCUS1H104KC	CAP , CHIP	0.1UF	1
C951	CCUS1H104KC	CAP , CHIP	0.1UF	1
C952	CCUS1H104KC	CAP , CHIP	0.1UF	1
C953	CCUS1H104KC	CAP , CHIP	0.1UF	1
C954	CCUS1H104KC	CAP , CHIP	0.1UF	1
C955	CCUS1H104KC	CAP , CHIP	0.1UF	1
C956	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C957	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C958	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C959	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C960	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C961	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C962	HCEC1CRV2100T	CAP , CHIP ELECT	10UF / 16V	1

HUDSON PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
C963	CCUS1H104KC	CAP , CHIP	0.1UF	1
C964	CCUS1H104KC	CAP , CHIP	0.1UF	1
C965	CCUS1A105KC	CAP , CHIP	1UF	1
C966	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C967	HCEC0JRV2101T	CAP , CHIP ELECT	100UF/6.3V	1
C975	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C976	HCEC0JRV2101T	CAP , CHIP ELECT	100UF/6.3V	1
C978	HCEC0JRV2101T	CAP , CHIP ELECT	100UF/6.3V	1
C979	HCEC0JRV2101T	CAP , CHIP ELECT	100UF/6.3V	1
C980	HCEC0JRV2220T	CAP , CHIP ELECT	22UF/6.3V	1
C991	CCUS1H104KC	CAP , CHIP	0.1UF	1
C992	CCUS1H104KC	CAP , CHIP	0.1UF	1
C993	CCUS1H104KC	CAP , CHIP	0.1UF	1
C994	CCUS1H104KC	CAP , CHIP	0.1UF	1
D801	HVD1SR159-200	DIODE , SCHOTTKEY BARRIER	DIODE	1
D811	CVDAD1580BRT	I.C, 1.2V MICROPOWER,PRECISION	MICROPOWER	1
D926	CVD1SS378	DIODE , SCHOTTKY BARRIER	DIODE	1
D927	CVD1SS378	DIODE , SCHOTTKY BARRIER	DIODE	1
IC78	CVIST232CDR	IC , RS232C(SO-16TYPE)	ST	1
IC79	HVIKIC7SZ08FU	I.C ,INPUT AND GATE (USV PACKAGE)	KEC	1
IC80	CVIAT26DF081ASU	I.C , 8MBIT SERIAL Flash(2.7V,8S2)	ATMEL	1
IC81	CVIM24C32WMN6TP	I.C , EEPROM (32 Kbit)	ST	1
IC82	CVIFLI8125LFBC	I.C , HUDSON FAMILY	GENESIS	1
IC83	CVIADV7322KSTZ	I.C , VIDEO ENCODER	ANALOG DEVICES	1
IC84	CVINJM2566V	I.C , NJM2566AV(TE1)	JRC	1
IC85	HVINJM2391DL133	I.C , CHIP REGULATOR (+3.3V)	JRC	1
IC86	HVINJM2391DL125	I.C , CHIP REGULATOR (+2.5V)	JRC	1
IC87	CVINJM2845DL118	IC, NJM2845DL1-18(TE1)	JRC	1
IC88	CVIIDTQS3VH16233PA	I.C , 32:16 BUS SWITCH	IDT	1
IC89	CVIIDTQS3VH16233PA	I.C , 32:16 BUS SWITCH	IDT	1
IC90	HVINJM2391DL133	I.C , CHIP REGULATOR (+3.3V)	JRC	1
IC91	CVISII9031CTU7	I.C , HDMI RX	SILICON IMAGE	1
IC92	CVISII9030CTU7	I.C , HDMI TX	SILICON IMAGE	1
IC93	HVI74VHC08TTR	I.C , AND-GATE	74VHC08	1
IC94	CVITC7MZ4052FK	I.C , 4CH MUX	ST	1
IC95	CVIAT24C02NSU18	I.C , EEPROM (2K)	ATMEL	1
IC96	CVITC7MZ4052FK	I.C , 4CH MUX	TOSHIBA	1
IC97	CVIAT24C02NSU18	I.C , EEPROM (2K)	ATMEL	1
IC98	HVIRN5RZ50BA	REGULATOR 5V (SOT-23-5)	RICOH	1
IC99	CVINJM2845DL118	IC, NJM2845DL1-18(TE1)	JRC	1
JK91	HJJ9H003Z	JACK , HDMI(JALCO)	JACK	1
JK92	HJJ9H003Z	JACK , HDMI(JALCO)	JACK	1
JK93	HJJ9H003Z	JACK , HDMI(JALCO)	JACK	1
L801	HLZ9R006Z	BEAD , CHIP	HH-1H2012-221JT	1
L802	HLZ9Z014Z	CHIP , BEAD	HU-1H4516-600JT	1
L803	HLZ9R006Z	BEAD , CHIP	HH-1H2012-221JT	1
L804	HLZ9Z014Z	CHIP , BEAD	HU-1H4516-600JT	1
L805	HLZ9Z014Z	CHIP , BEAD	HU-1H4516-600JT	1
L806	HLZ9R006Z	BEAD , CHIP	HH-1H2012-221JT	1
L807	HLZ9R006Z	BEAD , CHIP	HH-1H2012-221JT	1
L808	HLZ9R006Z	BEAD , CHIP	HH-1H2012-221JT	1
L809	HLZ9R006Z	BEAD , CHIP	HH-1H2012-221JT	1
L810	HLZ9Z014Z	CHIP , BEAD	HU-1H4516-600JT	1
L811	HLZ9R006Z	BEAD , CHIP	HH-1H2012-221JT	1
L812	HLZ9Z014Z	CHIP , BEAD	HU-1H4516-600JT	1
L813	HLZ9Z014Z	CHIP , BEAD	HU-1H4516-600JT	1
L814	HLZ9Z014Z	CHIP , BEAD	HU-1H4516-600JT	1
L816	HLZ9Z014Z	CHIP , BEAD	HU-1H4516-600JT	1
L817	HLZ9Z014Z	CHIP , BEAD	HU-1H4516-600JT	1

HUDSON PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
L901	HLZ9Z014Z	CHIP , BEAD	HU-1H4516-600JT	1
L902	HLZ9Z014Z	CHIP , BEAD	HU-1H4516-600JT	1
L903	HLZ9Z014Z	CHIP , BEAD	HU-1H4516-600JT	1
L904	HLZ9Z014Z	CHIP , BEAD	HU-1H4516-600JT	1
L921	CLZ9R009Z	CHOKE COIL, CHIP (FOR HDMI)	TDK	1
L922	CLZ9R009Z	CHOKE COIL, CHIP (FOR HDMI)	TDK	1
L923	CLZ9R009Z	CHOKE COIL, CHIP (FOR HDMI)	TDK	1
L924	CLZ9R009Z	CHOKE COIL, CHIP (FOR HDMI)	TDK	1
Q902	CVTKRC103S	T.R , CHIP	KRC103S	1
Q903	HVTKRA102S	T.R , CHIP	KRA102S	1
Q904	CVTKRC103S	T.R , CHIP	KRC103S	1
Q905	HVTKRA102S	T.R , CHIP	KRA102S	1
Q906	CVTKRC103S	T.R , CHIP	KRC103S	1
Q907	CVTKRC103S	T.R , CHIP	KRC103S	1
Q908	CVTUPA672T	F.E.T	UPA672T	1
Q909	CVTUPA672T	F.E.T	UPA672T	1
Q910	CVTUPA672T	F.E.T	UPA672T	1
RN80	CRJ104DJ220T	RES,4ARRAY	22 OHM/1608*4	1
RN81	CRJ104DJ220T	RES,4ARRAY	22 OHM/1608*4	1
RN82	CRJ104DJ220T	RES,4ARRAY	22 OHM/1608*4	1
RN83	CRJ104DJ220T	RES,4ARRAY	22 OHM/1608*4	1
RN84	CRJ104DJ220T	RES,4ARRAY	22 OHM/1608*4	1
RN85	CRJ104DJ220T	RES,4ARRAY	22 OHM/1608*4	1
RN86	CRJ104DJ220T	RES,4ARRAY	22 OHM/1608*4	1
RN87	CRJ104DJ220T	RES,4ARRAY	22 OHM/1608*4	1
RN88	CRJ104DJ220T	RES,4ARRAY	22 OHM/1608*4	1
RN89	CRJ104DJ220T	RES,4ARRAY	22 OHM/1608*4	1
RN91	CRJ104DJ220T	RES,4ARRAY	22 OHM/1608*4	1
RN92	CRJ104DJ220T	RES,4ARRAY	22 OHM/1608*4	1
RN93	CRJ104DJ220T	RES,4ARRAY	22 OHM/1608*4	1
RN94	CRJ104DJ220T	RES,4ARRAY	22 OHM/1608*4	1
RN95	CRJ104DJ220T	RES,4ARRAY	22 OHM/1608*4	1
RN96	CRJ104DJ220T	RES,4ARRAY	22 OHM/1608*4	1
RN97	CRJ104DJ100T	RES, ARRAY, 10R (1608)	10 OHM/1608*4	1
R522	CRJ10DJ301T	RES , CHIP	300 OHM	1
R801	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R802	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R803	CRJ10DJ473T	RES , CHIP	47K OHM	1
R804	CRJ10DJ103T	RES , CHIP	10K OHM	1
R805	CRJ10DJ102T	RES , CHIP	1K OHM	1
R806	CRJ10DJ103T	RES , CHIP	10K OHM	1
R807	CRJ10DJ103T	RES , CHIP	10K OHM	1
R809	CRJ10DJ103T	RES , CHIP	10K OHM	1
R810	CRJ10DJ222T	RES , CHIP	2.2K OHM	1
R811	CRJ10DJ103T	RES , CHIP	10K OHM	1
R812	CRJ10DJ103T	RES , CHIP	10K OHM	1
R813	CRJ10DJ103T	RES , CHIP	10K OHM	1
R814	CRJ10DJ103T	RES , CHIP	10K OHM	1
R815	CRJ10DJ220T	RES , CHIP	22 OHM	1
R816	CRJ10DJ560T	RES , CHIP	56 OHM	1
R817	CRJ10DJ220T	RES , CHIP	22 OHM	1
R818	CRJ10DJ220T	RES , CHIP	22 OHM	1
R819	CRJ10DJ220T	RES , CHIP	22 OHM	1
R820	CRJ10DJ560T	RES , CHIP	56 OHM	1
R821	CRJ10DJ560T	RES , CHIP	56 OHM	1
R822	CRJ10DJ220T	RES , CHIP	22 OHM	1
R823	CRJ10DJ220T	RES , CHIP	22 OHM	1
R824	CRJ10DJ560T	RES , CHIP	56 OHM	1
R825	CRJ10DJ103T	RES , CHIP	10K OHM	1

HUDSON PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
R826	CRJ10DJ112T	RES , CHIP	1.1K OHM	1
R827	CRJ10DJ302T	RES , CHIP	3K OHM	1
R828	CRJ10DJ302T	RES , CHIP	3K OHM	1
R829	CRJ10DJ681T	RES , CHIP	680 OHM	1
R830	CRJ10DJ681T	RES , CHIP	680 OHM	1
R831	CRJ10DJ100T	RES , CHIP	10 OHM	1
R832	CRJ10DJ100T	RES , CHIP	10 OHM	1
R833	CRJ10DJ100T	RES , CHIP	10 OHM	1
R834	CRJ10DJ472T	RES , CHIP	4.7K OHM	1
R835	CRJ10DJ472T	RES , CHIP	4.7K OHM	1
R836	CRJ10DJ103T	RES , CHIP	10K OHM	1
R837	CRJ10DJ103T	RES , CHIP	10K OHM	1
R838	CRJ10DJ103T	RES , CHIP	10K OHM	1
R839	CRJ10DJ1R0T	RES , CHIP	1 OHM	1
R841	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R842	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R843	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R844	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R851	CRJ10DJ301T	RES , CHIP	300 OHM	1
R853	CRJ10DJ301T	RES , CHIP	300 OHM	1
R854	CRJ10DJ301T	RES , CHIP	300 OHM	1
R855	CRJ10DJ272T	RES , CHIP	2.7K OHM	1
R856	CRJ10DJ301T	RES , CHIP	300 OHM	1
R857	CRJ10DJ301T	RES , CHIP	300 OHM	1
R858	CRJ10DJ103T	RES , CHIP	10K OHM	1
R859	CRJ10DJ103T	RES , CHIP	10K OHM	1
R871	CRJ10DJ5R6T	RES , CHIP	5.6 OHM	1
R872	CRJ10DJ100T	RES , CHIP	10 OHM	1
R873	CRJ10DJ9R1T	RES , CHIP	9.1 OHM	1
R874	CRJ10DJ750T	RES , CHIP	75 OHM	1
R875	CRJ10DJ750T	RES , CHIP	75 OHM	1
R876	CRJ10DJ750T	RES , CHIP	75 OHM	1
R880	CRJ10DJ680T	RES , CHIP	68 OHM	1
R881	CRJ10DJ820T	RES , CHIP	82 OHM	1
R882	CRJ10DJ820T	RES , CHIP	82 OHM	1
R899	CRJ10DJ0R0T	RES , CHIP	0 OHM	1
R907	CRJ10DJ102T	RES , CHIP	1K OHM	1
R908	CRJ10DJ223T	RES , CHIP	22K OHM	1
R909	CRJ10DJ101T	RES , CHIP	100 OHM	1
R910	CRJ10DJ101T	RES , CHIP	100 OHM	1
R911	CRJ10DJ101T	RES , CHIP	100 OHM	1
R912	CRJ10DJ101T	RES , CHIP	100 OHM	1
R913	CRJ10DJ102T	RES , CHIP	1K OHM	1
R914	CRJ10DJ223T	RES , CHIP	22K OHM	1
R915	CRJ10DJ103T	RES , CHIP	10K OHM	1
R916	CRJ10DJ473T	RES , CHIP	47K OHM	1
R917	CRJ10DJ103T	RES , CHIP	10K OHM	1
R918	CRJ10DJ103T	RES , CHIP	10K OHM	1
R919	CRJ10DJ103T	RES , CHIP	10K OHM	1
R920	CRJ10DJ473T	RES , CHIP	47K OHM	1
R921	CRJ10DJ103T	RES , CHIP	10K OHM	1
R922	CRJ10DJ103T	RES , CHIP	10K OHM	1
R923	CRJ10DJ181T	RES , CHIP	180 OHM	1
R928	CRJ10DJ101T	RES , CHIP	100 OHM	1
R929	CRJ10DJ101T	RES , CHIP	100 OHM	1
R933	CRJ10DJ332T	RES , CHIP	3.3K OHM	1
R934	CRJ10DJ332T	RES , CHIP	3.3K OHM	1
R935	CRJ10DJ332T	RES , CHIP	3.3K OHM	1
R936	CRJ10DJ473T	RES , CHIP	47K OHM	1

HUDSON PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
R937	CRJ10DJ101T	RES , CHIP	100 OHM	1
R938	CRJ10DJ101T	RES , CHIP	100 OHM	1
R939	CRJ10DJ473T	RES , CHIP	47K OHM	1
R940	CRJ10DJ473T	RES , CHIP	47K OHM	1
R941	CRJ10DJ101T	RES , CHIP	100 OHM	1
R942	CRJ10DJ220T	RES , CHIP	22 OHM	1
R943	CRJ10DJ220T	RES , CHIP	22 OHM	1
R944	CRJ10DJ220T	RES , CHIP	22 OHM	1
R945	CRJ10DJ330T	RES , CHIP	33 OHM	1
R946	CRJ10DJ105T	RES , CHIP	1M OHM	1
R947	CRJ10DJ103T	RES , CHIP	10K OHM	1
R948	CRJ10DJ103T	RES , CHIP	10K OHM	1
R949	CRJ10DJ182T	RES , CHIP	1.8K OHM	1
R950	CRJ10DJ103T	RES , CHIP	10K OHM	1
R951	CRJ10DJ182T	RES , CHIP	1.8K OHM	1
R952	CRJ10DJ182T	RES , CHIP	1.8K OHM	1
R953	CRJ10DJ471T	RES , CHIP	470 OHM	1
R962	CRJ10DJ101T	RES , CHIP	100 OHM	1
R963	CRJ10DJ103T	RES , CHIP	10K OHM	1
R964	CRJ10DJ101T	RES , CHIP	100 OHM	1
R966	CRJ10DJ222T	RES , CHIP	2.2K OHM	1
R967	CRJ10DJ222T	RES , CHIP	2.2K OHM	1
R975	CRJ10DJ473T	RES , CHIP	47K OHM	1
R976	CRJ10DJ473T	RES , CHIP	47K OHM	1
X801	COX19660E330S	X-TAL, CHIP, 19.6608 MHz (33P)	19.6608 MHz	1
X901	HOX27000E180S	CRYSTAL , CHIP(27MHZ,SMD)	HC-49/US	1
CN80	CJP03GA19ZY	WAFER , STRAIGHT, 3PIN	27MHz	1
C711	CCCT1H100DC	CAP , CERAMIC	WAFER	1
J801	CRD25TJ100T	RES , CARBON	10 OHM/ 1/4W	1
J802	CRD25TJ100T	RES , CARBON	10 OHM/ 1/4W	1
POWER PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
	COP11916O	AVR247/230 POWER PCB ASS'Y	ASS'Y	1
	CHG1A218	CUSHION	CUSHION	1
C104	HCBS1H103ZFT	CAP , CERAMIC	0.01UF 50V	1
C105	HCBS1H103ZFT	CAP , CERAMIC	0.01UF 50V	1
C106	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V ZF	1
C107	HCBS1H103ZFT	CAP , CERAMIC	0.01UF 50V	1
C108	HCBS1H103ZFT	CAP , CERAMIC	0.01UF 50V	1
C109	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V ZF	1
C117	CCEA1HH4R7T	CAP , ELECT	4.7UF 50V	1
C118	HCBS1H103ZFT	CAP , CERAMIC	0.01UF 50V	1
C119	CCEA1JH470TS	CAP , ELECT	47UF 63V	1
C120	CCEA1JH470TS	CAP , ELECT	47UF 63V	1
C121	HCBS1H103ZFT	CAP , CERAMIC	0.01UF 50V	1
C123	CCFT1H473ZF	CAP , CERAMIC	0.047UF 50V ZF	1
C125	CCFT1H473ZF	CAP , CERAMIC	0.047UF 50V ZF	1
C126	CCFT1H473ZF	CAP , CERAMIC	0.047UF 50V ZF	1
C131	CCEA1HH4R7T	CAP , ELECT	0.047UF 50V ZF	1
C750	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C751	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C753	HCBS1H181KBT	CAP , CERAMIC	180PF 50V	1
C754	HCBS1H181KBT	CAP , CERAMIC	180PF 50V	1
C756	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V ZF	1
C757	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V ZF	1
C759	HCBS1H101KBT	CAP , CERAMIC	100PF 50V	1
C762	CCEA1CH101T	CAP , ELECT	100UF 16V	1

POWER PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
C763	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V ZF	1
C851	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C852	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C853	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C854	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C855	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C856	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C857	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C919	CCKT1H102KB	CAP , CERAMIC	1000PF 50V	1
C920	CCEA1HH470T	CAP , ELECT	47UF 50V	1
C921	HCQI1H104JZT	CAP , MYLAR	0.1UF 50V J	1
C922	HCQI1H104JZT	CAP , MYLAR	0.1UF 50V J	1
C923	HCQI1H104JZT	CAP , MYLAR	0.1UF 50V J	1
C924	HCQI1H104JZT	CAP , MYLAR	0.1UF 50V J	1
C925	HCQI1H103JZT	CAP , MYLAR	0.01UF 50V J	1
C926	HCQI1H103JZT	CAP , MYLAR	0.01UF 50V J	1
C927	HCQI1H103JZT	CAP , MYLAR	0.01UF 50V J	1
C928	HCQI1H103JZT	CAP , MYLAR	0.01UF 50V J	1
C931	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
C932	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
C933	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
C934	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
C935	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V	1
C936	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V	1
C937	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V	1
C938	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C939	CCEA1EH101T	CAP , ELECT	100UF 25V	1
C940	CCEA1EH101T	CAP , ELECT	100UF 25V	1
C971	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V ZF	1
D101	CVDZJ15BT	DIODE , ZENER	ZJ15B 1/2W	1
D102	CVDZJ27BT	DIODE , ZENER	ZJ27B 1/2W	1
D104	CVD1N4003ST	DIODE , RECT	1N4003	1
D105	CVD1N4003ST	DIODE , RECT	1N4003	1
D108	CVD1N4003ST	DIODE , RECT	1N4003	1
D109	CVDZJ12BT	DIODE , ZENER	MTZJ12B 1/2W	1
D111	CVDZJ12BT	DIODE , ZENER	MTZJ12B 1/2W	1
D112	CVD1N4003ST	DIODE , RECT	1N4003	1
D113	CVD1N4003ST	DIODE , RECT	1N4003	1
D114	CVD1N4003ST	DIODE , RECT	1N4003	1
D115	CVD1N4003ST	DIODE , RECT	1N4003	1
D116	CVD1N4003ST	DIODE , RECT	1N4003	1
D117	CVD1N4003ST	DIODE , RECT	1N4003	1
D118	CVD1N4003ST	DIODE , RECT	1N4003	1
D119	CVD1N4003ST	DIODE , RECT	1N4003	1
D124	CVD1N4003ST	DIODE , RECT	1N4003	1
D125	CVD1N4003ST	DIODE , RECT	1N4003	1
D921	CVD1SS133MT	DIODE	1SS133	1
Q104	HVTKSC2316YT	T.R	KSC2316Y	1
Q911	HVTKTA1267YT	T.R	KTA1267Y	1
Q912	HVTKTC3198YT	T.R	KTC3198Y	1
Q913	HVTKTC3198YT	T.R	KTC3198Y	1
Q995	HVTKRA107MT	T.R	KRA107M	1
Q997	HVTKRC107MT	T.R	KRC107M	1
R101	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
R108	CRD20TJ4R7T	RES , CARBON	4.7 OHM 1/5W J	1
R109	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
R110	CRD20TJ4R7T	RES , CARBON	4.7 OHM 1/5W J	1
R112	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1
R113	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1

POWER PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
R120	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R750	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R751	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R756	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R757	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R759	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
R760	CRD20TJ241T	RES , CARBON	240OHM 1/5W J	1
R761	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
R874	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1
R875	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1
R876	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1
R877	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1
R878	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1
R879	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1
R880	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1
R882	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1
R883	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1
R884	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1
R885	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1
R886	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1
R887	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1
R888	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1
R912	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
R913	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
R917	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
R918	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
R919	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
R920	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
R921	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
R922	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
R923	CRD25TJ153T	RES , CARBON	10K OHM 1/4W J	1
R924	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
R925	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R926	CRD25TJ103T	RES , CARBON	10K OHM 1/4W J	1
R927	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
R928	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1
R970	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R971	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
R972	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1
R973	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1
R974	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1
R975	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1
R976	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J	1
R977	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
VR81	HVN1RA221B01T	RES , SEMI FIXED(220 OHM)	RH0615C100221	1
VR82	HVN1RA221B01T	RES , SEMI FIXED(220 OHM)	RH0615C100221	1
VR83	HVN1RA221B01T	RES , SEMI FIXED(220 OHM)	RH0615C100221	1
VR84	HVN1RA221B01T	RES , SEMI FIXED(220 OHM)	RH0615C100221	1
VR85	HVN1RA221B01T	RES , SEMI FIXED(220 OHM)	RH0615C100221	1
VR86	HVN1RA221B01T	RES , SEMI FIXED(220 OHM)	RH0615C100221	1
VR87	HVN1RA221B01T	RES , SEMI FIXED(220 OHM)	RH0615C100221	1
BN17	CJP12GB143ZB	PIN HEADER , DIP SOCKET(12PIN,2.54	DIP SOCKET	1
BN20	CWB1C905220BM	WIRE ASS'Y (2.5mm Pitch, 220mm)	2.5MM PITCH, 220MM	1
BN95	CWB1C903080EN	WIRE ASS'Y	WIRE	1
BN96	CWB1C909150BM	WIRE ASS'Y	WIRE	1
BN99	CWB1B908270EN	WIRE ASS'Y	WIRE	1
CN13	CJP05GA01ZY	WAFER(YMW025-05R)	WAFER	1
CN19	CJP03GA90ZY	WAFER	WAFER	1
CN20	CJP04GA90ZM	WAFER	WAFER	1

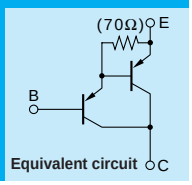
POWER PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
CN31	CJP02GA19ZY	WAFER , 2PIN	WAFER	1
CN32	CJP02GA19ZY	WAFER , 2PIN	WAFER	1
CN33	CJP02GA19ZY	WAFER , 2PIN	WAFER	1
CN34	CJP02GA19ZY	WAFER , 2PIN	WAFER	1
CN35	CJP02GA19ZY	WAFER , 2PIN	WAFER	1
CN36	CJP02GA19ZY	WAFER , 2PIN	WAFER	1
CN37	CJP02GA19ZY	WAFER , 2PIN	WAFER	1
CN81	CJP08GA01ZY	WAFER, STRAIGHT, 8PIN	WAFER	1
CN88	CJP06GA19ZY	WAFER , STRAIGHT DVD LOADER	WAFER	1
CN96	CJP09GA01ZY	CON WAFER YMW025-09R	WAFER	1
CN98	HJP08GB131ZK	WAFER	WAFER	1
C122	CCEA1JH101E	CAP , ELECT	100UF 63V	1
C124	CCEA1VH102E	CAP , ELECT	1000UF 35V	1
C128	CCEA1EH102E	CAP , ELECT	1000UF 25V	1
C129	CCEA1EH222E	CAP , ELECT	2200UF 25V	1
C132	CCEA1EH822F	CAP, ELECT(8200uF/25V, ANGLE TYPE	8200UF 25V	1
C912	CCEA0JKR3222E	CAP , ELECT	2200UF 6.3V	1
C929	CCEA1VH102E	CAP , ELECT	1000UF 35V	1
C930	CCEA1VH102E	CAP , ELECT	1000UF 35V	1
C941	CCEA1CH103E	CAP , ELECT	10000UF 16V	1
D120	HVDSB2100	DIODE , SCHOTTKY		1
D121	HVDSB2100	DIODE , SCHOTTKY		1
D991	CVDKBU804FMA	BRIDGE DIODE ASS'Y	ASS'Y	1
	CMY1A219	HEAT SINK (BRIDGE DIODE)	HEAT SINK	1
	CTB3+12JR	SCREW	SCREW	1
	HVDKBU804F	DIODE , BRIDGE	KBU804F	1
	K8AYG6260	COMPOUND , SILICONE	SILICONE	0,5
D992	CVDKBU804FMA	BRIDGE DIODE ASS'Y	ASS'Y	1
	CMY1A219	HEAT SINK (BRIDGE DIODE)	HEAT SINK	1
	CTB3+12JR	SCREW	SCREW	1
	HVDKBU804F	DIODE , BRIDGE	KBU804F	1
	K8AYG6260	COMPOUND , SILICONE	SILICONE	0,5
ET04	CMD1A569	BRACKET , PCB	BRACKET	1
ET05	CMD1A569	BRACKET , PCB	BRACKET	1
IC89	HVIL7805CP	I.C, REGULATOR	ST	1
IC90	HVIL7815CP	I.C, REGULATOR	ST	1
IC91	HVIL7915CP	I.C, REGULATOR	ST	1
IC97	BVIKP1010B	IC, PHOTO COUPLER	COSMO	1
IC98	BVIKP1010B	IC, PHOTO COUPLER	COSMO	1
IC99	HVI74LCX32TTR	I.C , OR-GATE	ST	1
JK74	HJSTOTX177L	MODULE , OPTICAL(TX)	OPT JACK(TX)	1
JK75	HJSTORX177L	MODULE , OPTICAL(RX)	OPT JACK(RX)	1
JK76	HJSTORX177L	MODULE , OPTICAL(RX)	OPT JACK(RX)	1
JK78	CJJ4S022Z	JACK , BOARD	JACK	1
JK94	CJJ2D008Z	JACK , STEREO	JACK	1
JK95	CJJ2D008Z	JACK , STEREO	JACK	1
JK96	CJJ2D008Z	JACK , STEREO	JACK	1
Q851	HVTKTD600KGR	T.R , BIAS	KTD600KGR	1
Q852	HVTKTD600KGR	T.R , BIAS	KTD600KGR	1
Q853	HVTKTD600KGR	T.R , BIAS	KTD600KGR	1
Q854	HVTKTD600KGR	T.R , BIAS	KTD600KGR	1
Q855	HVTKTD600KGR	T.R , BIAS	KTD600KGR	1
Q856	HVTKTD600KGR	T.R , BIAS	KTD600KGR	1
Q857	HVTKTD600KGR	T.R , BIAS	KTD600KGR	1
R104	KRQ1AJR47H	RES , FUSE	0.47 OHM 1W J	1
R105	KRQ1AJR47H	RES , FUSE	0.47 OHM 1W J	1
R106	CRQ1AJR33H	RES , FUSE	0.33 OHM 1W J	1
R107	CRQ1AJR33H	RES , FUSE	0.33 OHM 1W J	1
R114	KRQ1AJR47H	RES , FUSE	0.47 OHM 1W J	1

POWER PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
R115	KRQ1AJR47H	RES , FUSE	0.47 OHM 1W J	1
R116	CRQ1AJR33H	RES , FUSE	0.33 OHM 1W J	1
R117	CRQ1AJR33H	RES , FUSE	0.33 OHM 1W J	1
VIDEO PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
	COP11918O	AVR247/230 VIDEO PCB ASS'Y	ASS'Y	1
C401	CCUS1H101JA	CAP , CHIP	100PF	1
C402	CCUS1H101JA	CAP , CHIP	100PF	1
C403	CCUS1H101JA	CAP , CHIP	100PF	1
C461	CCUS1H223KC	CAP , CHIP	0.022UF	1
C463	CCUS1H223KC	CAP , CHIP	0.022UF	1
C465	CCUS1H470JA	CAP , CHIP	47PF	1
C466	CCUS1H223KC	CAP , CHIP	0.022UF	1
C468	CCUS1H223KC	CAP , CHIP	0.022UF	1
C470	CCUS1H470JA	CAP , CHIP	47PF	1
C471	CCUS1H223KC	CAP , CHIP	0.022UF	1
C473	CCUS1H223KC	CAP , CHIP	0.022UF	1
C475	CCUS1H470JA	CAP , CHIP	47PF	1
C485	CCUS1H223KC	CAP , CHIP	0.022UF	1
C487	CCUS1H223KC	CAP , CHIP	0.022UF	1
C491	CCUS1H101JA	CAP , CHIP	100PF	1
C492	CCUS1H101JA	CAP , CHIP	100PF	1
C493	CCUS1H101JA	CAP , CHIP	100PF	1
C601	CCUS1H220JA	CAP , CHIP	22PF	1
C603	CCUS1H220JA	CAP , CHIP	22PF	1
C605	CCUS1H220JA	CAP , CHIP	22PF	1
C611	CCUS1H220JA	CAP , CHIP	22PF	1
C613	CCUS1H220JA	CAP , CHIP	22PF	1
C615	CCUS1H220JA	CAP , CHIP	22PF	1
C621	CCUS1H220JA	CAP , CHIP	22PF	1
C623	CCUS1H220JA	CAP , CHIP	22PF	1
C625	CCUS1H220JA	CAP , CHIP	22PF	1
C631	CCUS1H220JA	CAP , CHIP	22PF	1
C633	CCUS1H220JA	CAP , CHIP	22PF	1
C635	CCUS1H220JA	CAP , CHIP	22PF	1
C672	CCUS1H104KC	CAP , CHIP	0.1UF	1
C677	CCUS1H473KC	CAP , CHIP	0.047UF	1
IC41	CVINJM2595MTE1	I.C , VIDEO S/W	JRC	1
IC42	CVINJM2595MTE1	I.C , VIDEO S/W	JRC	1
IC43	CVINJM2595MTE1	I.C , VIDEO S/W	JRC	1
IC48	HVIHCF4053M013T	I.C	ST	1
IC61	CVINJW1321FP1	I.C , VIDEO S/W	JRC	1
R401	CRJ10DJ750T	RES , CHIP	75 OHM	1
R402	CRJ10DJ750T	RES , CHIP	75 OHM	1
R403	CRJ10DJ750T	RES , CHIP	75 OHM	1
R411	CRJ10DJ750T	RES , CHIP	75 OHM	1
R412	CRJ10DJ750T	RES , CHIP	75 OHM	1
R413	CRJ10DJ750T	RES , CHIP	75 OHM	1
R421	CRJ10DJ750T	RES , CHIP	75 OHM	1
R422	CRJ10DJ750T	RES , CHIP	75 OHM	1
R423	CRJ10DJ750T	RES , CHIP	75 OHM	1
R431	CRJ10DJ750T	RES , CHIP	75 OHM	1
R432	CRJ10DJ750T	RES , CHIP	75 OHM	1
R433	CRJ10DJ750T	RES , CHIP	75 OHM	1
R451	CRJ10DJ750T	RES , CHIP	75 OHM	1
R452	CRJ10DJ750T	RES , CHIP	75 OHM	1
R453	CRJ10DJ750T	RES , CHIP	75 OHM	1

VIDEO PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
R461	CRJ10DJ102T	RES , CHIP	1K OHM	1
R462	CRJ10DJ820T	RES , CHIP	82 OHM	1
R463	CRJ10DJ910T	RES , CHIP	91 OHM	1
R466	CRJ10DJ102T	RES , CHIP	1K OHM	1
R467	CRJ10DJ750T	RES , CHIP	75 OHM	1
R468	CRJ10DJ910T	RES , CHIP	91 OHM	1
R471	CRJ10DJ102T	RES , CHIP	1K OHM	1
R472	CRJ10DJ820T	RES , CHIP	82 OHM	1
R473	CRJ10DJ910T	RES , CHIP	91 OHM	1
R485	CRJ10DJ100T	RES , CHIP	10 OHM	1
R487	CRJ10DJ100T	RES , CHIP	10 OHM	1
R491	CRJ10DJ750T	RES , CHIP	75 OHM	1
R492	CRJ10DJ750T	RES , CHIP	75 OHM	1
R493	CRJ10DJ750T	RES , CHIP	75 OHM	1
R494	CRJ10DJ102T	RES , CHIP	1K OHM	1
R601	CRJ10DJ820T	RES , CHIP	82 OHM	1
R603	CRJ10DJ680T	RES , CHIP	68 OHM	1
R604	CRJ10DJ0R0T	RES , CHIP	0 OHM	1
R605	CRJ10DJ680T	RES , CHIP	68 OHM	1
R611	CRJ10DJ750T	RES , CHIP	75 OHM	1
R612	CRJ10DJ750T	RES , CHIP	75 OHM	1
R613	CRJ10DJ750T	RES , CHIP	75 OHM	1
R614	CRJ10DJ0R0T	RES , CHIP	0 OHM	1
R615	CRJ10DJ0R0T	RES , CHIP	0 OHM	1
R616	CRJ10DJ0R0T	RES , CHIP	0 OHM	1
R621	CRJ10DJ750T	RES , CHIP	75 OHM	1
R622	CRJ10DJ750T	RES , CHIP	75 OHM	1
R623	CRJ10DJ750T	RES , CHIP	75 OHM	1
R624	CRJ10DJ0R0T	RES , CHIP	0 OHM	1
R625	CRJ10DJ0R0T	RES , CHIP	0 OHM	1
R626	CRJ10DJ0R0T	RES , CHIP	0 OHM	1
R631	CRJ10DJ750T	RES , CHIP	75 OHM	1
R633	CRJ10DJ750T	RES , CHIP	75 OHM	1
R635	CRJ10DJ750T	RES , CHIP	75 OHM	1
C404	CCEA0JH102T	CAP , ELECT	1000UF 6.3V	1
C405	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C406	CCEA0JH102T	CAP , ELECT	1000UF 6.3V	1
C411	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C412	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C413	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C421	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C422	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C423	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C431	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C432	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C433	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C451	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C452	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C453	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C462	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C464	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C467	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C469	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C472	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C474	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C486	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C488	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C602	CCEA0JH102T	CAP , ELECT	1000UF 6.3V	1
C604	CCEA0JH102T	CAP , ELECT	1000UF 6.3V	1

VIDEO PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
C606	CCEA0JH102T	CAP , ELECT	1000UF 6.3V	1
C612	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C614	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C616	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C622	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C624	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C626	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C632	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C634	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C636	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C641	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C643	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C645	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C671	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C673	CCEA1HH100T	CAP , ELECT	10UF 50V	1
C676	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C678	CCEA1CH101T	CAP , ELECT	100UF 16V	1
BN14	CJP17GA117ZY	WAFER	WAFER	1
BN15	CJP15GB113ZY	WAFER	WAFER	1
BN81	CJP44TT212ZB	PIN , HEADER (2.00MM PITCH, DIP TYP	PIN HEADER	1
CN41	CJP06GA19ZY	WAFER , STRAIGHT DVD LOADER	WAFER	1
CN42	CJP07GB113ZY	WAFER , CARD CABLE	WAFER	1
CN43	CJP03GB03ZY	WAFER	WAFER	1
IC62	HVIKIA7809API	I.C , REGULATOR +9V	FAIRCHILD	1
JK40	CJJ9R001Z	JACK , (S-VIDEO + CVBS)	JACK	1
JK41	CJJ9R001Z	JACK , (S-VIDEO + CVBS)	JACK	1
JK62	CJJ4R045Z	JACK , BOARD	JACK	1
JK69	CJJ4R045Z	JACK , BOARD	JACK	1
REGULATOR A PCB ASSY				
Ref. #	**Part Number**	**Description**	**Value**	**Qty**
	COP12014O	AVR247/230 REGULATOR A PCB ASS`\	ASS`Y	1
C902	HCBS1H223ZFT	CAP , CERAMIC	0.02UF 50V Z	1
C903	HCBS1H223ZFT	CAP , CERAMIC	0.02UF 50V Z	1
C906	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C907	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C908	CCEA1CH101T	CAP , ELECT	100UF 16V	1
C910	CCEA1VH221T	CAP , ELECT	220UF 35V	1
R903	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
	C8AGB288	BOND (MAX)	BOND	2
BN43	CWB1C903200BM	WIRE ASS'Y	WIRE	1
CN89	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN	WAFER	1
CN95	CJP03GA19ZY	WAFER , STRAIGHT, 3PIN	WAFER	1
CN99	CJP08GA19ZY	WAFER, STRAIGHT, 8PIN	WAFER	1
IC93	CVIKIA7905PI	I.C , REGULATOR(-5V)		1
IC94	HVIKIA278R05PI	REGULATOR (5V OUTPUT LOW DROP)	KIA278R05PI	1
IC95	HVIKIA7812API	I.C , REGULATOR	KIA78XXAPI	1
	C4B120202	TUBE , UL(20PIE, BK, UL)	20PIE, BK, UL	0,13

Darlington 2SB1560



Silicon PNP Epitaxial Planar Transistor (Complement to type 2SD2390)

Application : Audio, Series Regulator and General Purpose

Absolute maximum ratings (Ta=25°C)

Symbol	2SB1560	Unit
V_{CBO}	–160	V
V_{CEO}	–150	V
V_{EBO}	–5	V
I_C	–10	A
I_B	–1	A
P_C	100(Tc=25°C)	W
Tj	150	°C
Tstg	–55 to +150	°C

Electrical Characteristics (Ta=25°C)

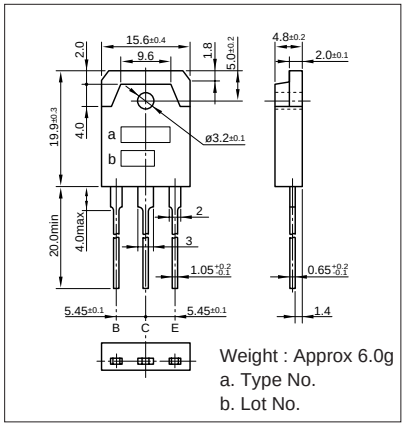
Symbol	Conditions	2SB1560	Unit
I_{CBO}	V_{CB}=–160V	–100max	μA
I_{EBO}	V_{EB}=–5V	–100max	μA
$V_{(BR)CEO}$	I_C=–30mA	–150min	V
h_{FE}	V_{CE}=–4V, I_C=–7A	5000min*	
$V_{CE(sat)}$	I_C=–7A, I_B=–7mA	–2.5max	V
$V_{BE(sat)}$	I_C=–7A, I_B=–7mA	–3.0max	V
fr	V_{CE}=–12V, I_E=2A	50typ	MHz
C_{OB}	V_{CB}=–10V, f=1MHz	230typ	pF

*h_{FE} Rank O(5000 to 12000), P(6500 to 20000), Y(15000 to 30000)

Typical Switching Characteristics (Common Emitter)

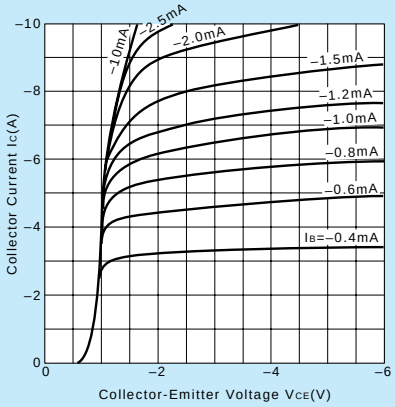
V_{CC} (V)	R_L (Ω)	I_C (A)	V_{BB1} (V)	V_{BB2} (V)	I_{B1} (mA)	I_{B2} (mA)	ton (μs)	tstg (μs)	tf (μs)
–70	10	–7	–10	5	–7	7	0.8typ	3.0typ	1.2typ

External Dimensions MT-100(TO3P)

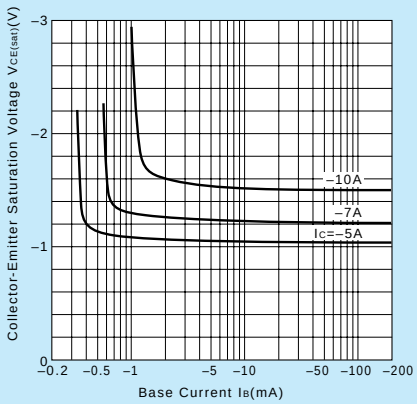


Weight : Approx 6.0g
a. Type No.
b. Lot No.

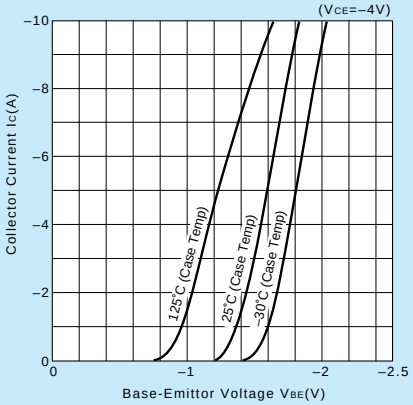
I_C–V_{CE} Characteristics (Typical)



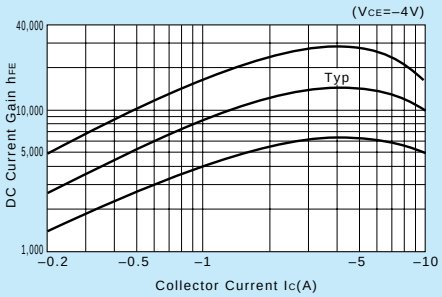
$V_{CE(sat)}$–I_B Characteristics (Typical)



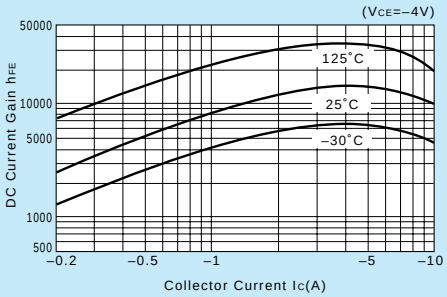
I_C–V_{BE} Temperature Characteristics (Typical)



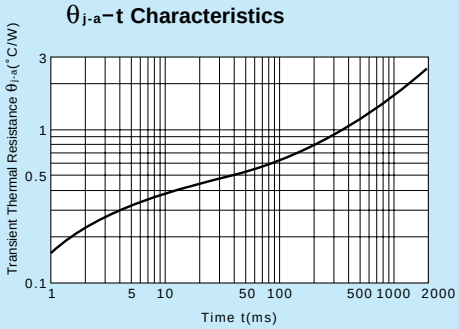
h_{FE}–I_C Characteristics (Typical)



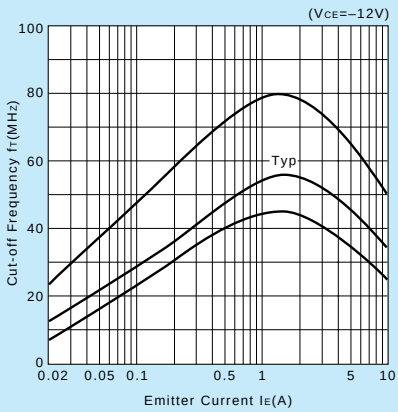
h_{FE}–I_C Temperature Characteristics (Typical)



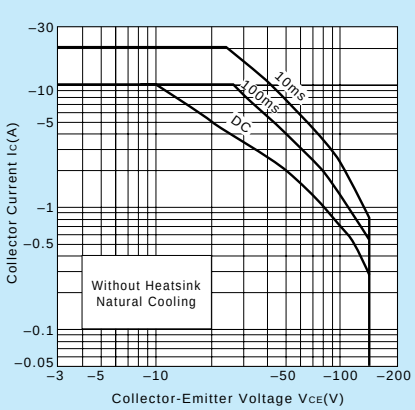
$\theta_{j\text{-}a}$–t Characteristics



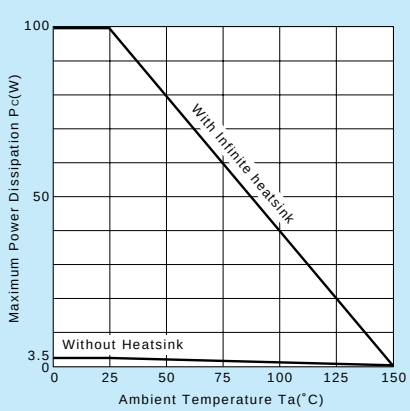
f_T–I_E Characteristics (Typical)



Safe Operating Area (Single Pulse)

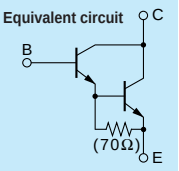


P_C–Ta Derating



Darlington 2SD2390

Equivalent circuit



Silicon NPN Triple Diffused Planar Transistor (Complement to type 2SB1560)

Application : Audio, Series Regulator and General Purpose

Absolute maximum ratings (Ta=25°C)

Symbol	2SD2390	Unit
V_{CBO}	160	V
V_{CEO}	150	V
V_{EBO}	5	V
I_C	10	A
I_B	1	A
P_C	100(Tc=25°C)	W
Tj	150	°C
Tstg	–55 to +150	°C

Electrical Characteristics (Ta=25°C)

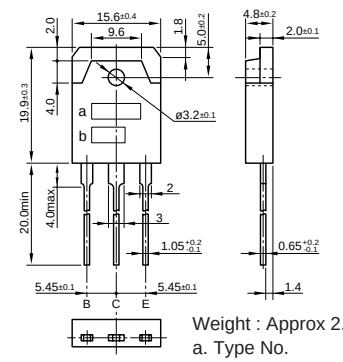
Symbol	Conditions	2SD2390	Unit
I_{CBO}	V_{CB}=160V	100max	μA
I_{EBO}	V_{EB}=5V	100max	μA
$V_{(BR)CEO}$	I_C=30mA	150min	V
h_{FE}	V_{CE}=4V, I_C=7A	5000min*	
$V_{CE(sat)}$	I_C=7A, I_B=7mA	2.5max	V
$V_{BE(sat)}$	I_C=7A, I_B=7mA	3.0max	V
f_T	V_{CE}=12V, I_E=–2A	55typ	MHz
C_{OB}	V_{CB}=10V, f=1MHz	95typ	pF

*h_{FE} Rank O(5000 to 12000), P(6500 to 20000), Y(15000 to 30000)

Typical Switching Characteristics (Common Emitter)

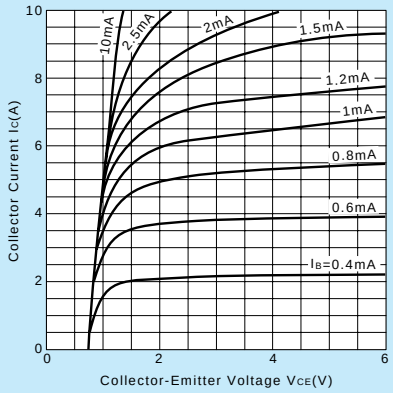
V_{CC} (V)	R_L (Ω)	I_C (A)	V_{BB1} (V)	V_{BB2} (V)	I_{B1} (mA)	I_{B2} (mA)	ton (μs)	tstg (μs)	tf (μs)
70	10	7	10	–5	7	–7	0.5typ	10.0typ	1.1typ

External Dimensions MT-100(TO3P)

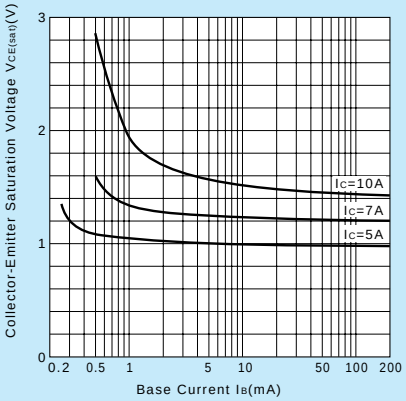


Weight : Approx 2.0g
a. Type No.
b. Lot No.

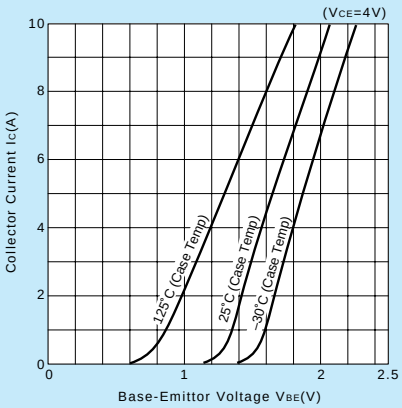
I_C–V_{CE} Characteristics (Typical)



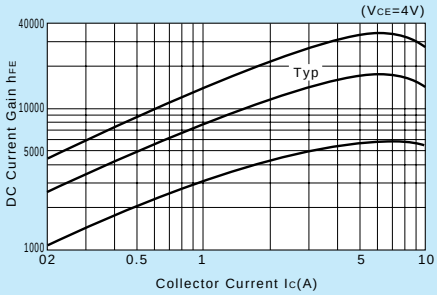
$V_{CE(sat)}$–I_B Characteristics (Typical)



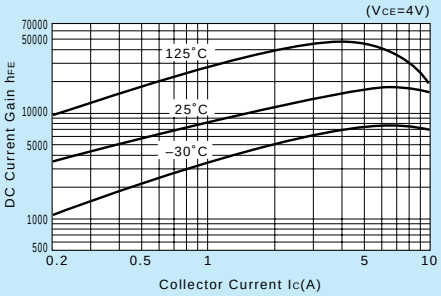
I_C–V_{BE} Temperature Characteristics (Typical)



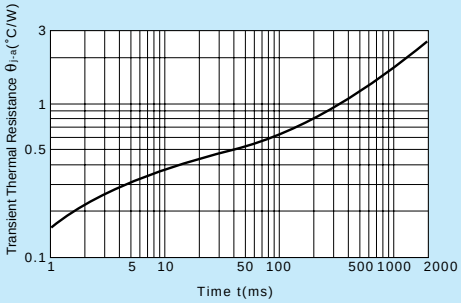
h_{FE}–I_C Characteristics (Typical)



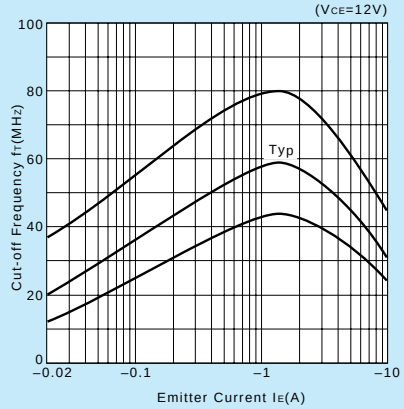
h_{FE}–I_C Temperature Characteristics (Typical)



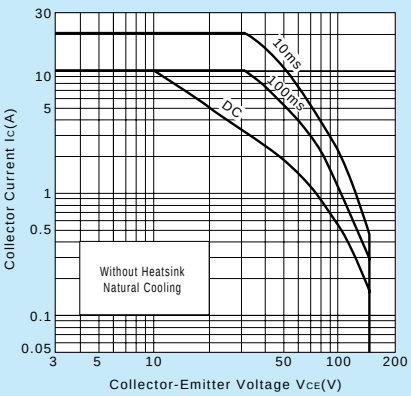
$\theta_{j\text{-}a}$–t Characteristics



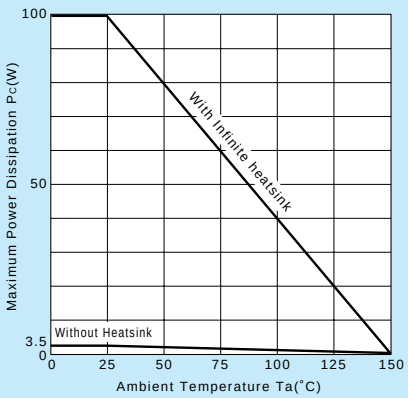
f_T–I_E Characteristics (Typical)



Safe Operating Area (Single Pulse)



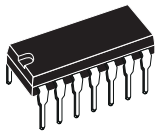
Pc–Ta Derating



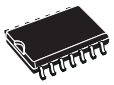
74ACT04

HEX INVERTER

- HIGH SPEED: t_{PD} = 5.0ns (TYP.) at V_{CC} = 5V
- LOW POWER DISSIPATION: I_{CC} = 2µA(MAX.) at T_A=25°C
- COMPATIBLE WITH TTL OUTPUTS V_{IH} = 2V (MIN.), V_{IL} = 0.8V (MAX.)
- 50Ω TRANSMISSION LINE DRIVING CAPABILITY
- SYMMETRICAL OUTPUT IMPEDANCE: $|I_{OH}| = I_{OL}$ = 24mA (MIN)
- BALANCED PROPAGATION DELAYS: $t_{PLH} \cong t_{PHL}$
- OPERATING VOLTAGE RANGE: V_{CC} (OPR) = 4.5V to 5.5V
- PIN AND FUNCTION COMPATIBLE WITH 74 SERIES 04
- IMPROVED LATCH-UP IMMUNITY



DIP



SOP

TSSOP

ORDER CODES

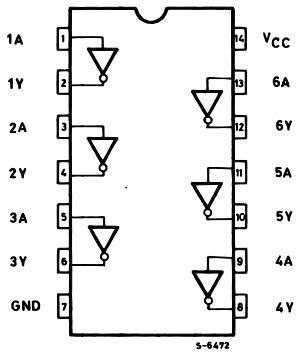
PACKAGE	TUBE	T & R
DIP	74ACT04B	
SOP	74ACT04M	74ACT04MTR
TSSOP		74ACT04TTR

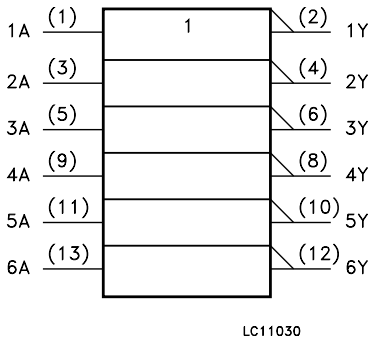
DESCRIPTION

The 74ACT04 is an advanced high-speed CMOS HEX INVERTER fabricated with sub-micron silicon gate and double-layer metal wiring C^2MOS technology.
The internal circuit is composed of 3 stages including buffer output, which enables high noise immunity and stable output.

The device is designed to interface directly High Speed CMOS systems with TTL, NMOS and CMOS output voltage levels.
All inputs and outputs are equipped with protection circuits against static discharge, giving them 2KV ESD immunity and transient excess voltage.

PIN CONNECTION AND IEC LOGIC SYMBOLS



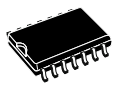


July 2001

74LCX32

LOW VOLTAGE CMOS QUAD 2-INPUT OR GATE WITH 5V TOLERANT INPUTS

- 5V TOLERANT INPUTS
- HIGH SPEED:
  t_{PD} = 5.2ns (MAX.) at V_{CC} = 3V
- POWER DOWN PROTECTION ON INPUTS AND OUTPUTS
- SYMMETRICAL OUTPUT IMPEDANCE:
  $|I_{OH}| = I_{OL}$ = 24mA (MIN) at V_{CC} = 3V
- PCI BUS LEVELS GUARANTEED AT 24 mA
- BALANCED PROPAGATION DELAYS:
  $t_{PLH} \cong t_{PHL}$
- OPERATING VOLTAGE RANGE:
  V_{CC}(OPR) = 2.0V to 3.6V (1.5V Data Retention)
- PIN AND FUNCTION COMPATIBLE WITH 74 SERIES 32
- LATCH-UP PERFORMANCE EXCEEDS 500mA (JESD 17)
- ESD PERFORMANCE:
  HBM > 2000V (MIL STD 883 method 3015);
  MM > 200V



SOP

TSSOP

Table 1: Order Codes

PACKAGE	T & R
SOP	74LCX32MTR
TSSOP	74LCX32TTR

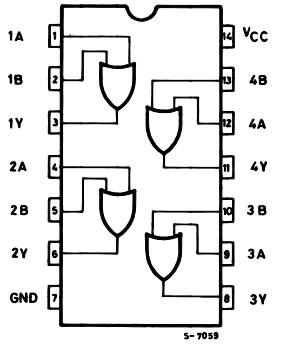
DESCRIPTION

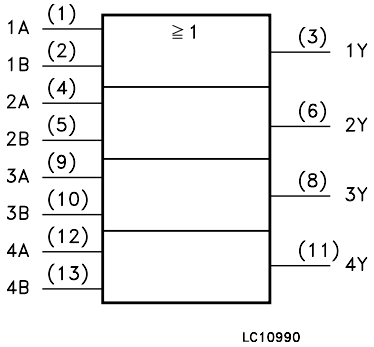
The 74LCX32 is a low voltage CMOS QUAD 2-INPUT OR GATE fabricated with sub-micron silicon gate and double-layer metal wiring C^2MOS technology. It is ideal for low power and high speed 3.3V applications; it can be interfaced to 5V signal environment for inputs.

It has same speed performance at 3.3V than 5V AC/ACT family, combined with a lower power consumption.

All inputs and outputs are equipped with protection circuits against static discharge, giving them 2KV ESD immunity and transient excess voltage.

Figure 1: Pin Connection And IEC Logic Symbols





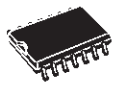
Rev. 6

September 2004

74LCX74

LOW VOLTAGE CMOS DUAL D-TYPE FLIP FLOP WITH 5V TOLERANT INPUTS

- 5V TOLERANT INPUTS
- HIGH SPEED :
  f_{MAX} = 150 MHz (MAX.) at V_{CC} = 3V
- POWER DOWN PROTECTION ON INPUTS AND OUTPUTS
- SYMMETRICAL OUTPUT IMPEDANCE:
  $|I_{OH}| = I_{OL}$ = 24mA (MIN) at V_{CC} = 3V
- PCI BUS LEVELS GUARANTEED AT 24 mA
- BALANCED PROPAGATION DELAYS:
  $t_{PLH} \cong t_{PHL}$
- OPERATING VOLTAGE RANGE:
  V_{CC}(OPR) = 2.0V to 3.6V (1.5V Data Retention)
- PIN AND FUNCTION COMPATIBLE WITH 74 SERIES 74
- LATCH-UP PERFORMANCE EXCEEDS 500mA (JESD 17)
- ESD PERFORMANCE:
  HBM > 2000V (MIL STD 883 method 3015);
  MM > 200V



SOP

TSSOP

ORDER CODES

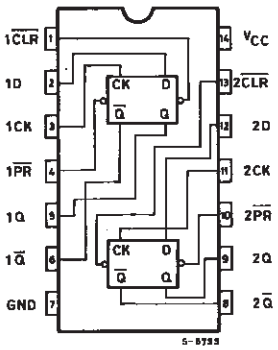
PACKAGE	TUBE	T & R
SOP	74LCX74M	74LCX74MTR
TSSOP		74LCX74TTR

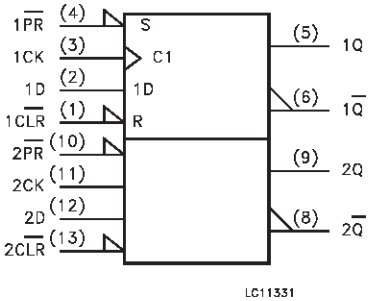
DESCRIPTION

The 74LCX74 is a low voltage CMOS DUAL D-TYPE FLIP FLOP WITH PRESET AND CLEAR NON INVERTING fabricated with sub-micron silicon gate and double-layer metal wiring C^2MOS technology. It is ideal for low power and high speed 3.3V applications; it can be interfaced to 5V signal environment for inputs.

A signal on the D INPUT is transferred to the Q OUTPUT during the positive going transition of the clock pulse.
$\overline{CLR}$ and $\overline{PR}$ are independent of the clock and accomplished by a low setting on the appropriate input.
It has same speed performance at 3.3V than 5V AC/ACT family, combined with a lower power consumption.
All inputs and outputs are equipped with protection circuits against static discharge, giving them 2KV ESD immunity and transient excess voltage.

PIN CONNECTION AND IEC LOGIC SYMBOLS

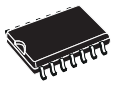




74VHC08

QUAD 2-INPUT AND GATE

- HIGH SPEED: t_{PD} = 4.3 ns (TYP.) at V_{CC} = 5V
- LOW POWER DISSIPATION: I_{CC} = 2 µA (MAX.) at T_A=25°C
- HIGH NOISE IMMUNITY: $V_{NIH} = V_{NIL}$ = 28% V_{CC} (MIN.)
- POWER DOWN PROTECTION ON INPUTS
- SYMMETRICAL OUTPUT IMPEDANCE: $|I_{OH}| = I_{OL}$ = 8mA (MIN)
- BALANCED PROPAGATION DELAYS: $t_{PLH} \cong t_{PHL}$
- OPERATING VOLTAGE RANGE: V_{CC}(OPR) = 2V to 5.5V
- PIN AND FUNCTION COMPATIBLE WITH 74 SERIES 08
- IMPROVED LATCH-UP IMMUNITY
- LOW NOISE: V_{OLP} = 0.8V (MAX.)



SOP

TSSOP

ORDER CODES

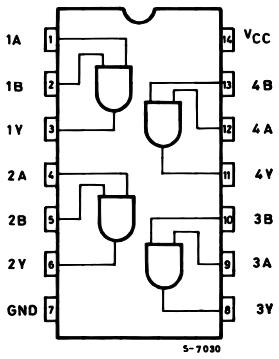
PACKAGE	TUBE	T & R
SOP	74VHC08M	74VHC08MTR
TSSOP		74VHC08TTR

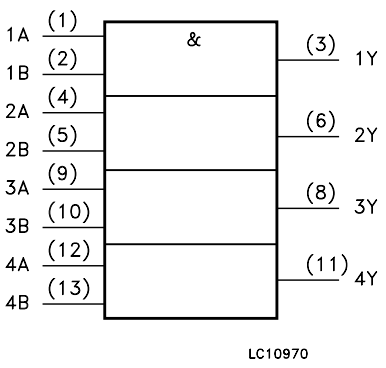
DESCRIPTION

The 74VHC08 is an advanced high-speed CMOS QUAD 2-INPUT AND GATE fabricated with sub-micron silicon gate and double-layer metal wiring C^2MOS technology.
The internal circuit is composed of 2 stages including buffer output, which provides high noise immunity and stable output.

Power down protection is provided on all inputs and 0 to 7V can be accepted on inputs with no regard to the supply voltage. This device can be used to interface 5V to 3V.
All inputs and outputs are equipped with protection circuits against static discharge, giving them 2KV ESD immunity and transient excess voltage.

PIN CONNECTION AND IEC LOGIC SYMBOLS





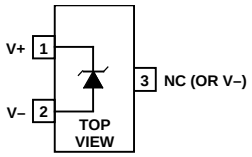
June 2001

1.2 V Micropower, Precision Shunt Voltage Reference

AD1580

FEATURES
Wide Operating Range: 50 μA–10 mA
Initial Accuracy: ±0.1% max
Temperature Drift: ±50 ppm/°C max
Output Impedance: 0.5 Ω max
Wideband Noise (10 Hz–10 kHz): 20 μV rms
Operating Temperature Range: –40°C to +85°C
High ESD Rating
4 kV Human Body Model
400 V Machine Model
Compact, Surface-Mount, SOT-23 Package

PIN CONFIGURATION
SOT-23 Package



NC = NO CONNECT

GENERAL DESCRIPTION

The AD1580 is a low cost, two-terminal (shunt), precision bandgap reference. It provides an accurate 1.225 V output for input currents between 50 μA and 10 mA.

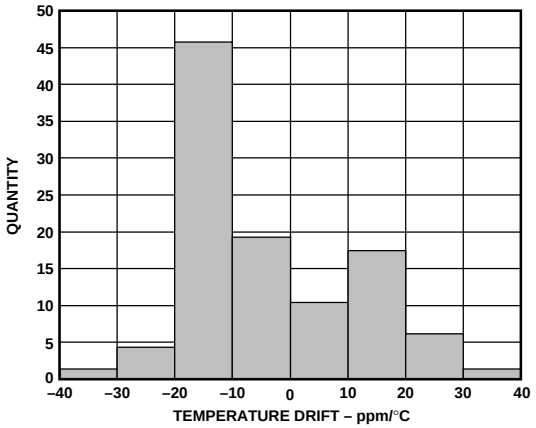
The AD1580's superior accuracy and stability is made possible by the precise matching and thermal tracking of on-chip components. Proprietary curvature correction design techniques have been used to minimize the nonlinearities in the voltage output temperature characteristics. The AD1580 is stable with any value of capacitive load.

The low minimum operating current makes the AD1580 ideal for use in battery powered 3 V or 5 V systems. However, the wide operating current range means that the AD1580 is extremely versatile and suitable for use in a wide variety of high current applications.

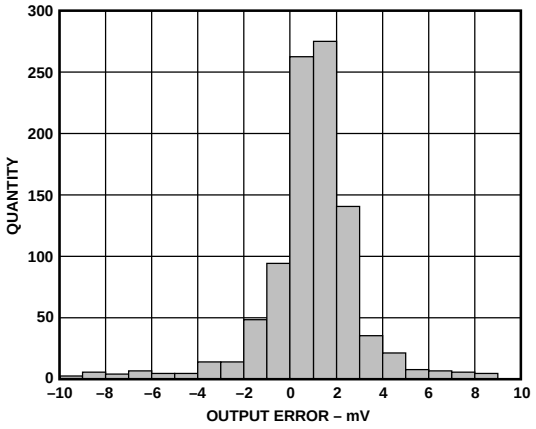
The AD1580 is available in two grades, A and B, both of which are provided in an SOT-23 package, the smallest surface mount package available on the market. Both grades are specified over the industrial temperature range of –40°C to +85°C.

TARGET APPLICATIONS

1. Portable, Battery-Powered Equipment:
   Cellular Phones, Notebook Computers, PDAs, GPS and DMM.
2. Computer Workstations
   Suitable for use with a wide range of video RAMDACs.
3. Smart Industrial Transmitters
4. PCMCIA Cards.
5. Automotive.
6. 3 V/5 V 8–12-Bit Data Converters.



Reverse Voltage Temperature Drift Distribution



Reverse Voltage Error Distribution

REV. 0

One Technology Way, P.O. Box 9106, Norwood, MA 02062-9106, U.S.A.
Tel: 617/329-4700 **Fax: 617/326-8703**

PIN CONFIGURATION AND FUNCTION DESCRIPTIONS

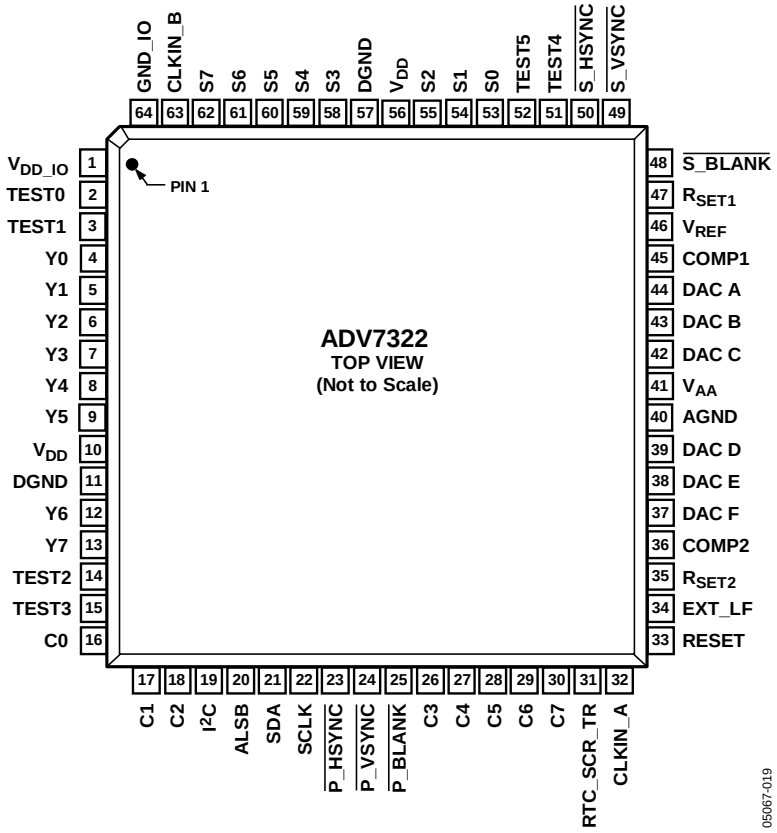


Figure 19. Pin Configuration

Table 6. Pin Function Descriptions

Mnemonic	Input/Output	Function
DGND	G	Digital Ground.
AGND	G	Analog Ground.
CLKIN_A	I	Pixel Clock Input for HD (74.25 MHz Only, PS Only (27 MHz), SD Only (27 MHz).
CLKIN_B	I	Pixel Clock Input. Requires a 27 MHz reference clock for progressive scan mode or a 74.25 MHz (74.1758 MHz) reference clock in HDTV mode. This clock is only used in dual modes.
COMP1, COMP2	O	Compensation Pin for DACs. Connect 0.1 µF capacitor from COMP pin to V_{AA}.
DAC A	O	CVBS/Green/Y/Y Analog Output.
DAC B	O	Chroma/Blue/U/Pb Analog Output.
DAC C	O	Luma/Red/V/Pr Analog Output.
DAC D	O	In SD Only Mode: CVBS/Green/Y Analog Output; in HD Only Mode and Simultaneous HD/SD Mode: Y/Green [HD] Analog Output.
DAC E	O	In SD Only Mode: Luma/Blue/U Analog Output; in HD Only Mode and Simultaneous HD/SD Mode: Pr/Red Analog Output.
DAC F	O	In SD Only Mode: Chroma/Red/V Analog Output; in HD Only Mode and Simultaneous HD/SD Mode: Pb/Blue [HD] Analog Output.
$\overline{\text{P\_HSYNC}}$	I	Video Horizontal Sync Control Signal for HD in Simultaneous SD/HD Mode and HD Only Mode.
$\overline{\text{P\_VSYNC}}$	I	Video Vertical Sync Control Signal for HD in Simultaneous SD/HD Mode and HD Only Mode.
$\overline{\text{P\_BLANK}}$	I	Video Blanking Control Signal for HD in Simultaneous SD/HD Mode and HD Only Mode.
$\overline{\text{S\_BLANK}}$	I/O	Video Blanking Control Signal for SD Only.
$\overline{\text{S\_HSYNC}}$	I/O	Video Horizontal Sync Control Signal for SD Only.
$\overline{\text{S\_VSYNC}}$	I/O	Video Vertical Sync Control Signal for SD Only.
Y7 to Y0	I	SD or Progressive Scan/HDTV Input Port for Y Data. Input port for interleaved progressive scan data. The LSB is set up on Pin Y0.
C7 to C0	I	Progressive Scan/HDTV Input Port 4:4:4 Input Mode. This port is used for the Cb [Blue/U] data. The LSB is set up on Pin C0.
S7 to S0	I	SD or Progressive Scan/HDTV Input Port for Cr [Red/V] data in 4:4:4 input mode. LSB is set up on Pin S0.
$\overline{\text{RESET}}$	I	This input resets the on-chip timing generator and sets the ADV7322 into default register setting. $\overline{\text{RESET}}$ is an active low signal.
R_{SET1}, R_{SET2}	I	A 3040 Ω resistor must be connected from this pin to AGND and is used to control the amplitudes of the DAC outputs.
SCLK	I	I^2C Port Serial Interface Clock Input.
SDA	I/O	I^2C Port Serial Data Input/Output.
ALSB	I	TTL Address Input. This signal sets up the LSB of the I^2C address. When this pin is tied low, the I^2C filter is activated, which reduces noise on the I^2C interface.
V_{DD_IO}	P	Power Supply for Digital Inputs and Outputs.
V_{DD}	P	Digital Power Supply.
V_{AA}	P	Analog Power Supply.
V_{REF}	I/O	Optional External Voltage Reference Input for DACs or Voltage Reference Output (1.235 V).
EXT_LF	I	External Loop Filter for the Internal PLL.
RTC_SCR_TR	I	Multifunctional Input. Real time control (RTC) input, timing reset input, subcarrier reset input.
I^2C	I	This input pin must be tied high (V_{DD_IO}) for the ADV7322 to interface over the I^2C port.
GND_IO		Digital Input/Output Ground.
TEST0 to TEST5	I	Not used. Tie to DGND

Features

- **Low-voltage and Standard-voltage Operation**
  - **2.7 (V_{CC} = 2.7V to 5.5V)**
  - **1.8 (V_{CC} = 1.8V to 5.5V)**
- **Internally Organized 128 x 8 (1K), 256 x 8 (2K), 512 x 8 (4K), 1024 x 8 (8K) or 2048 x 8 (16K)**
- **Two-wire Serial Interface**
- **Schmitt Trigger, Filtered Inputs for Noise Suppression**
- **Bidirectional Data Transfer Protocol**
- **100 kHz (1.8V) and 400 kHz (2.7V, 5V) Compatibility**
- **Write Protect Pin for Hardware Data Protection**
- **8-byte Page (1K, 2K), 16-byte Page (4K, 8K, 16K) Write Modes**
- **Partial Page Writes Allowed**
- **Self-timed Write Cycle (5 ms max)**
- **High-reliability**
  - **Endurance: 1 Million Write Cycles**
  - **Data Retention: 100 Years**
- **Automotive Grade and Lead-free/Halogen-free Devices Available**
- **8-lead PDIP, 8-lead JEDEC SOIC, 8-lead MAP, 5-lead SOT23, 8-lead TSSOP and 8-ball dBGA2 Packages**
- **Die Sales: Wafer Form, Waffle Pack and Bumped Wafers**

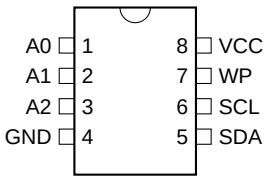
Description

The AT24C01A/02/04/08A/16A provides 1024/2048/4096/8192/16384 bits of serial electrically erasable and programmable read-only memory (EEPROM) organized as 128/256/512/1024/2048 words of 8 bits each. The device is optimized for use in many industrial and commercial applications where low-power and low-voltage operation are essential. The AT24C01A/02/04/08A/16A is available in space-saving 8-lead PDIP, 8-lead JEDEC SOIC, 8-lead MAP, 5-lead SOT23 (AT24C01A/AT24C02/AT24C04), 8-lead TSSOP, and 8-ball dBGA2 packages and is accessed via a Two-wire serial interface. In addition, the entire family is available in 2.7V (2.7V to 5.5V) and 1.8V (1.8V to 5.5V) versions.

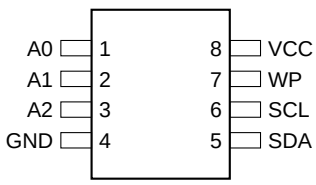
Table 1. Pin Configuration

Pin Name	Function
A0 - A2	Address Inputs
SDA	Serial Data
SCL	Serial Clock Input
WP	Write Protect
NC	No Connect
GND	Ground
VCC	Power Supply

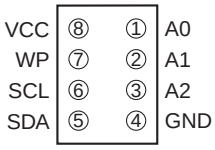
8-lead TSSOP



8-lead SOIC

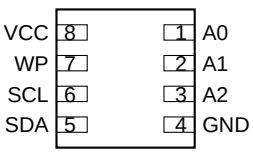


8-ball dBGA2



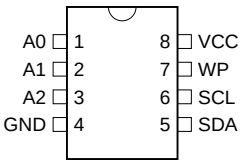
Bottom View

8-lead MAP



Bottom View

8-lead PDIP



5-lead SOT23

Two-wire Serial EEPROM

1K (128 x 8)

2K (256 x 8)

4K (512 x 8)

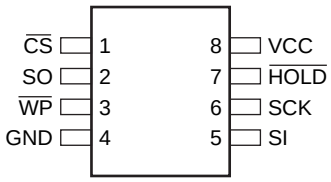
8K (1024 x 8)

16K (2048 x 8)

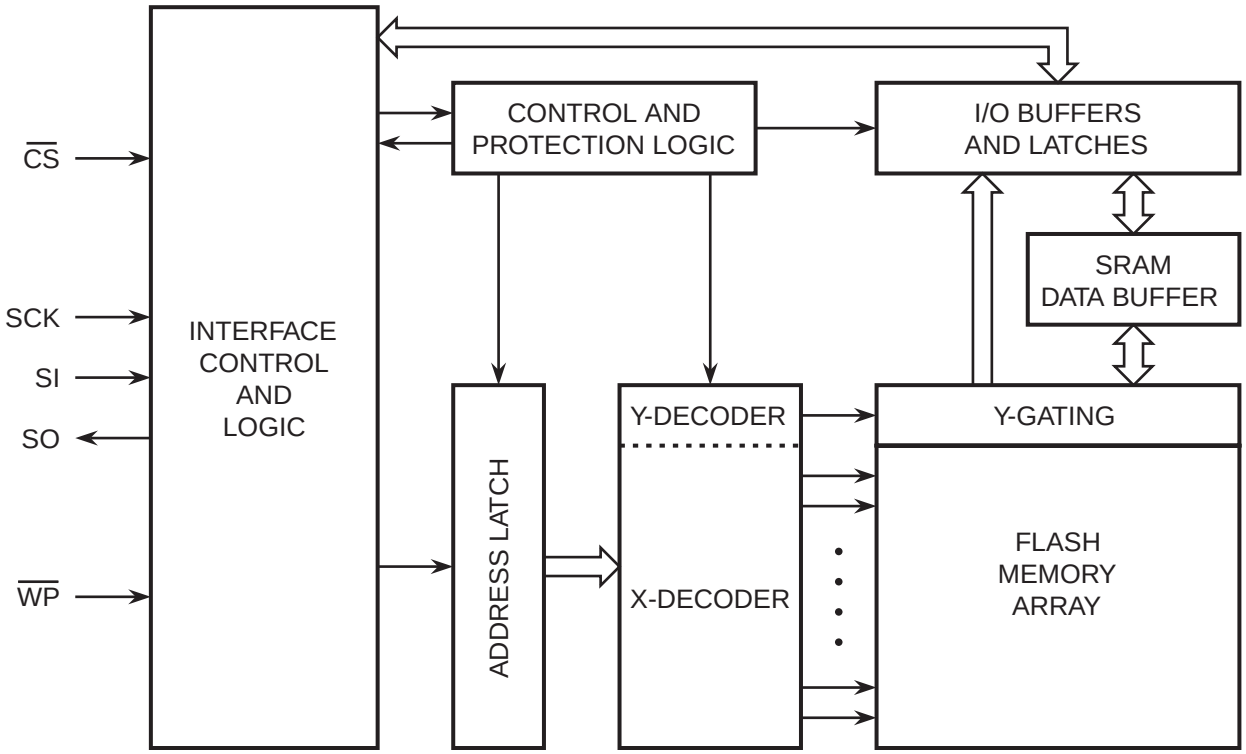
AT24C01A
AT24C02
AT24C04
AT24C08A
AT24C16A

0180V–SEEPR–8/05

Figure 2-1. 8-SOIC Top View



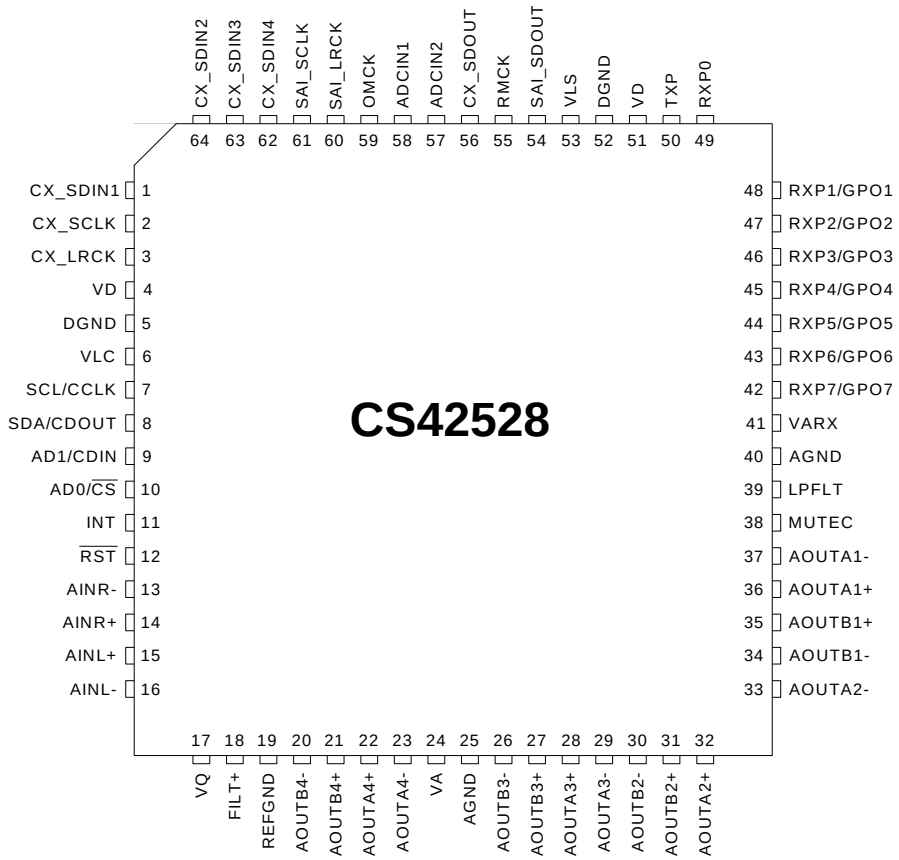
3. Block Diagram



4. Memory Array

To provide the greatest flexibility, the memory array of the AT26DF081A can be erased in four levels of granularity including a full chip erase. In addition, the array has been divided into physical sectors of various sizes, of which each sector can be individually protected from program and erase operations. The sizes of the physical sectors are optimized for both code and data storage applications, allowing both code and data segments to reside in their own isolated regions. The Figure 4-1 on page 4 illustrates the breakdown of each erase level as well as the breakdown of each physical sector.

2. PIN DESCRIPTIONS

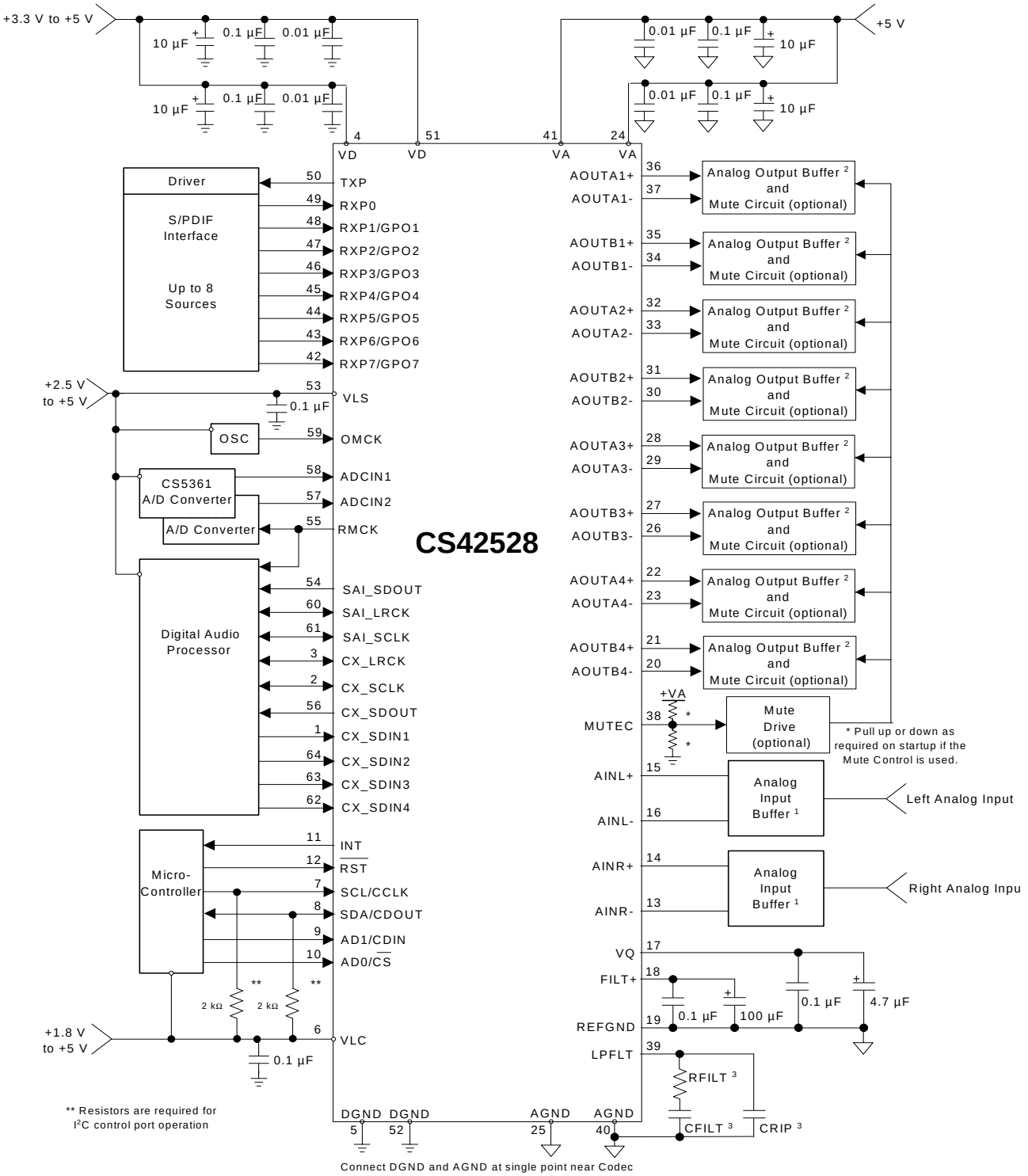


Pin Name	#	Pin Description
CX_SDIN1 **CX_SDIN2** **CX_SDIN3** **CX_SDIN4**	1 64 63 62	**Codec Serial Audio Data Input** (*Input*) - Input for two's complement serial audio data.
CX_SCLK	2	**CODEC Serial Clock** *(Input/Output)* - Serial clock for the CODEC serial audio interface.
CX_LRCK	3	**CODEC Left Right Clock** (*Input*/*Output*) - Determines which channel, Left or Right, is currently active on the CODEC serial audio data line.
VD	4 51	**Digital Power** (*Input*) - Positive power supply for the digital section.
DGND	5 52	**Digital Ground** (*Input*) - Ground reference. Should be connected to digital ground.
VLC	6	**Control Port Power** (*Input*) **-** Determines the required signal level for the control port.
SCL/CCLK	7	**Serial Control Port Clock** (*Input*) - Serial clock for the serial control port. Requires an external pull-up resistor to the logic interface voltage in I^2C mode as shown in the Typical Connection Diagram.
SDA/CDOUT	8	**Serial Control Data** (*Input/Output*) **-** SDA is a data I/O line in I^2C mode and requires an external pull-up resistor to the logic interface voltage, as shown in the Typical Connection Diagram. CDOUT is the output data line for the control port interface in SPI mode.
AD1/CDIN	9	**Address Bit 1 (I^2C)/Serial Control Data (SPI)** (*Input*) - AD1 is a chip address pin in I^2C mode; CDIN is the input data line for the control port interface in SPI mode.

AD0/$\overline{CS}$	10	**Address Bit 0 (I^2C)/Control Port Chip Select (SPI)** *(Input)* **-** AD0 is a chip address pin in I^2C mode; $\overline{CS}$ is the chip select signal in SPI mode.
INT	11	**Interrupt** *(Output)* - The CS42528 will generate an interrupt condition as per the Interrupt Mask register. See “Interrupts” on page 40 for more details.
$\overline{RST}$	12	**Reset** (*Input*) - The device enters a low power mode and all internal registers are reset to their default settings when low.
AINR- **AINR+**	13 14	**Differential Right Channel Analog Input** (*Input*) - Signals are presented differentially to the delta-sigma modulators via the AINR+/- pins.
AINL+ **AINL-**	15 16	**Differential Left Channel Analog Input** (*Input*) - Signals are presented differentially to the delta-sigma modulators via the AINL+/- pins.
VQ	17	**Quiescent Voltage** (*Output*) **-** Filter connection for internal quiescent reference voltage.
FILT+	18	**Positive Voltage Reference** (*Output*) - Positive reference voltage for the internal sampling circuits.
REFGND	19	**Reference Ground** (*Input*) - Ground reference for the internal sampling circuits.
AOUTA1 +,- **AOUTB1 +,-** **AOUTA2 +,-** **AOUTB2 +,-** **AOUTA3 +,-** **AOUTB3 +,-** **AOUTA4 +,-** **AOUTB4 +,-**	36,37 35,34 32,33 31,30 28,29 27,26 22,23 21,20	**Differential Analog Output** (*Output*) - The full-scale differential analog output level is specified in the Analog Characteristics specification table.
VA **VARX**	24 41	**Analog Power** (*Input*) - Positive power supply for the analog section.
AGND	25 40	**Analog Ground** (*Input*) - Ground reference. Should be connected to analog ground.
MUTEC	38	**Mute Control** (*Output*) - The Mute Control pin outputs high impedance following an initial power-on condition or whenever the PDN bit is set to a ‘1’, forcing the codec into power-down mode. The signal will remain in a high impedance state as long as the part is in power-down mode. The Mute Control pin goes to the selected “active” state during reset, muting, or if the master clock to left/right clock frequency ratio is incorrect. This pin is intended to be used as a control for external mute circuits to prevent the clicks and pops that can occur in any single supply system. The use of external mute circuits are not mandatory but may be desired for designs requiring the absolute minimum in extraneous clicks and pops.
LPFLT	39	**PLL Loop Filter** (*Output*) - An RC network should be connected between this pin and ground.
RXP7/GPO7 **RXP6/GPO6** **RXP5/GPO5** **RXP4/GPO4** **RXP3/GPO3** **RXP2/GPO2** **RXP1/GPO1**	42 43 44 45 46 47 48	**S/PDIF Receiver Input/ General Purpose Output** (*Input/Output*) - Receiver inputs for S/PDIF encoded data. The CS42528 has an internal 8:2 multiplexer to select the active receiver port, according to the Receiver Mode Control 2 register. These pins can also be configured as general purpose output pins, ADC Overflow indicators or Mute Control outputs according to the RXP/General Purpose Pin Control registers.
RXP0	49	**S/PDIF Receiver Input** (*Input*) - Dedicated receiver input for S/PDIF encoded data.
TXP	50	**S/PDIF Transmitter Output** (*Output*) - S/PDIF encoded data output, mapped directly from one of the receiver inputs as indicated by the Receiver Mode Control 2 register.
VLS	53	**Serial Port Interface Power** (*Input*) - Determines the required signal level for the serial port interfaces.
SAI_SDOUT	54	**Serial Audio Interface Serial Data Output** (*Output*) - Output for two’s complement serial audio PCM data from the S/PDIF incoming stream. This pin can also be configured to transmit the output of the internal and external ADCs.
RMCK	55	**Recovered Master Clock** (*Output*) - Recovered master clock output from the External Clock Reference (OMCK, pin 59) or the PLL which is locked to the incoming S/PDIF stream or CX_LRCK.

CX_SDOUT	56	**CODEC Serial Data Output** (*Output*) - Output for two's complement serial audio data from the internal and external ADCs.
ADCIN1 **ADCIN2**	58 57	**External ADC Serial Input** (*Input*) - The CS42528 provides for up to two external stereo analog to digital converter inputs to provide a maximum of six channels on one serial data output line when the CS42528 is placed in One Line mode.
OMCK	59	**External Reference Clock** (*Input*) - External clock reference that must be within the ranges specified in the register "OMCK Frequency (OMCK Freqx)" on page 54.
SAI_LRCK	60	**Serial Audio Interface Left/Right Clock** (*Input*/*Output*) - Determines which channel, Left or Right, is currently active on the serial audio data line.
SAI_SCLK	61	**Serial Audio Interface Serial Clock** *(Input/Output)* - Serial clock for the Serial Audio Interface.

3. TYPICAL CONNECTION DIAGRAM



1. See the ADC Input Filter section in the Appendix.
2. See the DAC Output Filter section in the Appendix.
3. See the PLL Filter section in the Appendix.

Figure 5. Typical Connection Diagram

7. Package Pinout, 144-Pin QFP/LQFP

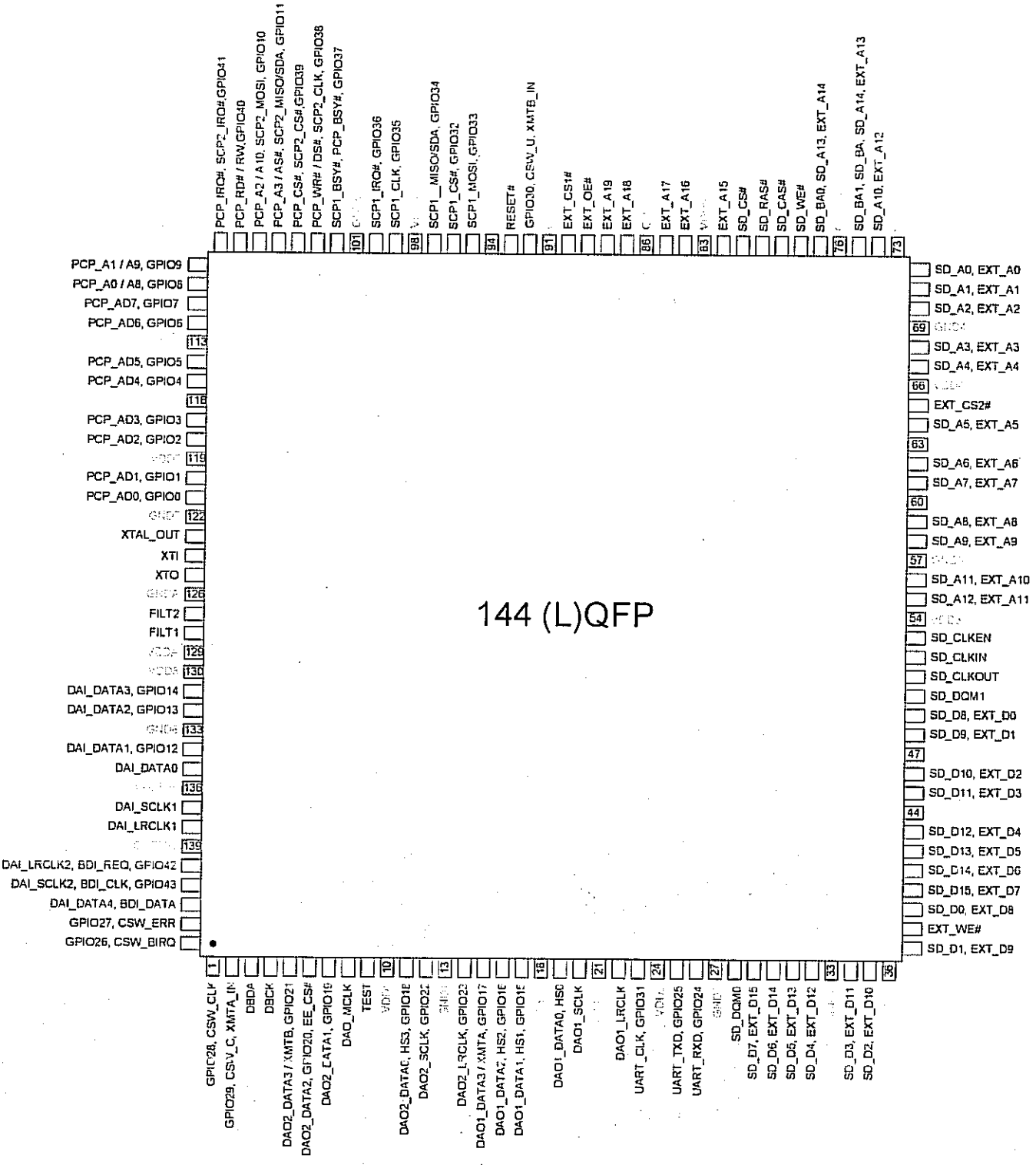
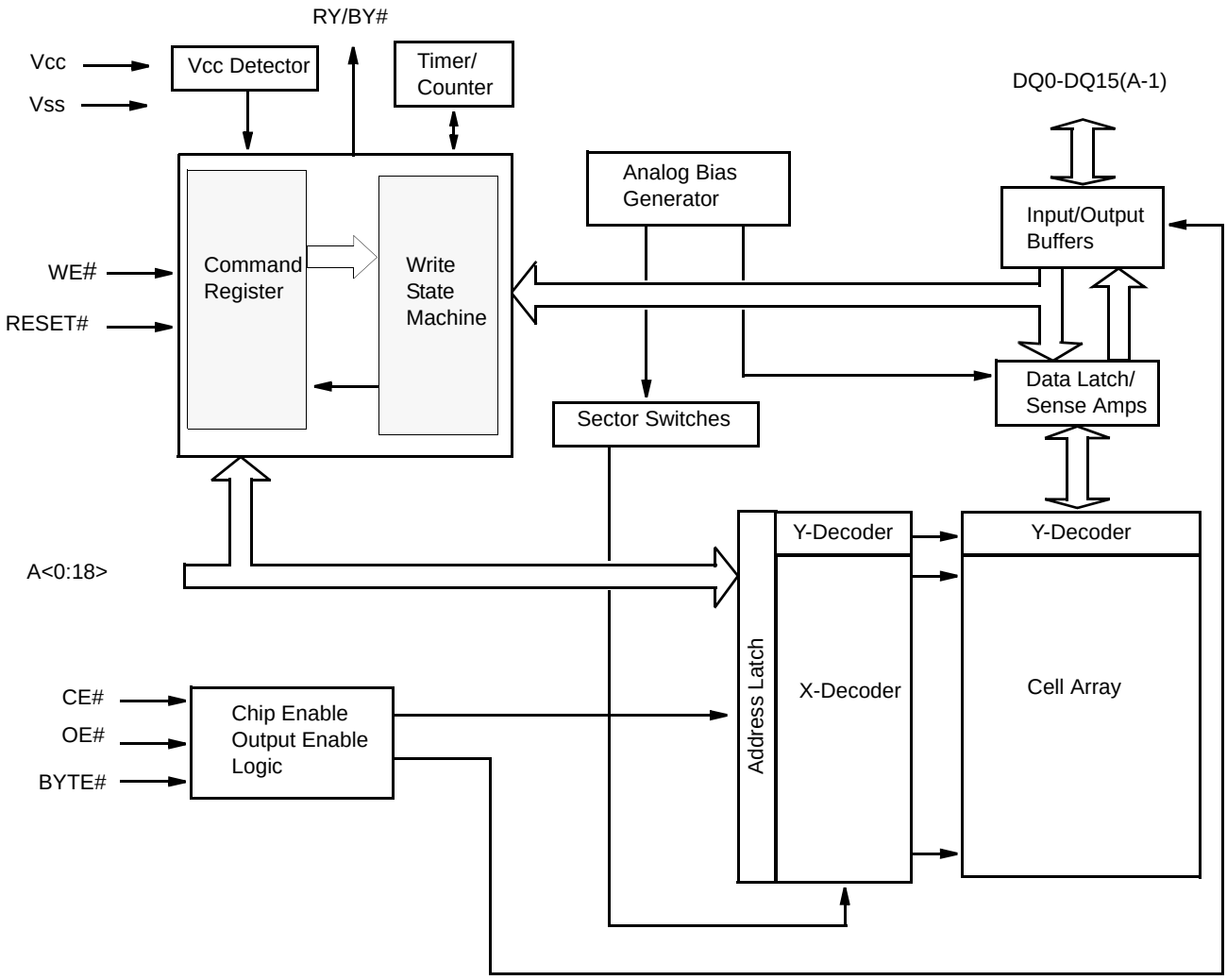


Figure 23. 144-Pin (L)QFP Package Pinout

PRODUCT SELECTOR GUIDE

Family Part Number	ES29LV800		
Voltage Range	2.7 ~ 3.6V		
Speed Option	**70**	**90**	**120**
Max Access Time (ns)	70	90	120
CE# Access (ns)	70	90	120
OE# Access (ns)	30	35	50

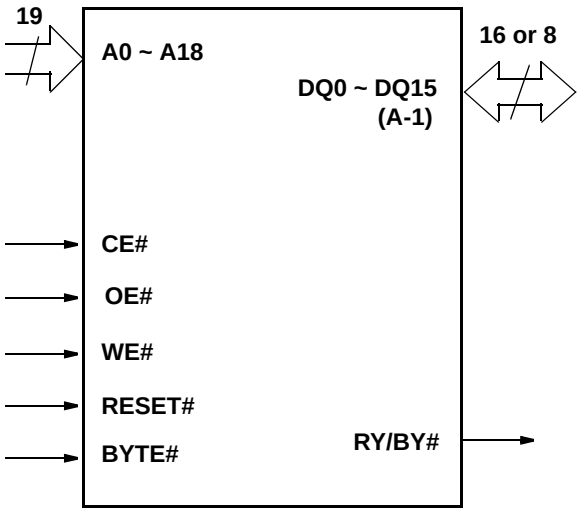
FUNCTION BLOCK DIAGRAM



PIN DESCRIPTION

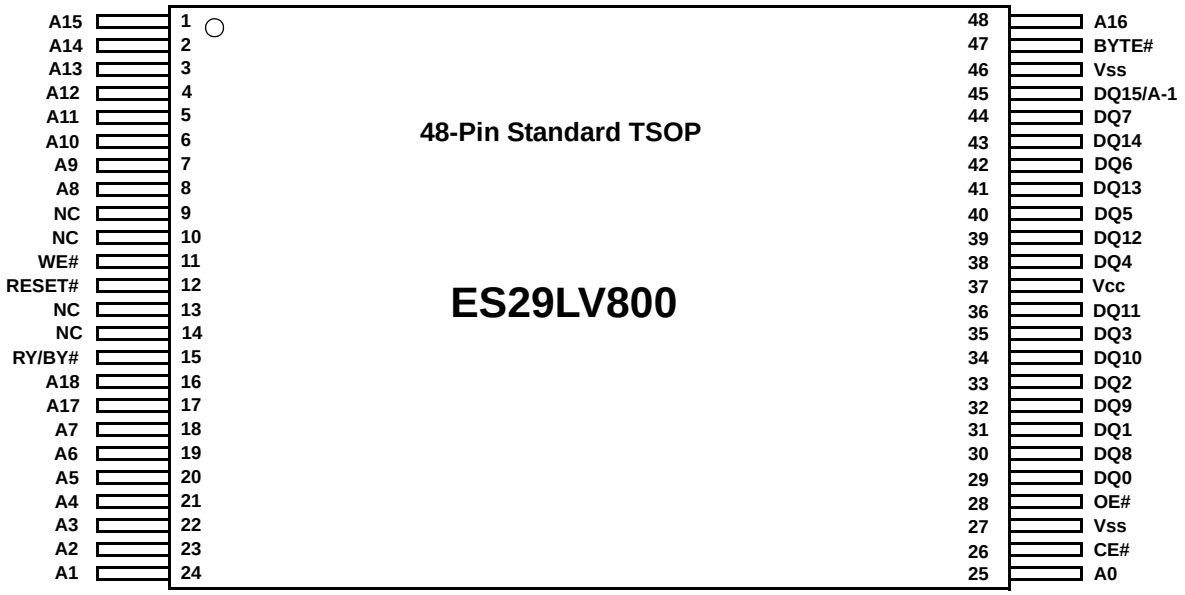
Pin	Description
A0-A18	19 Addresses
DQ0-DQ14	15 Data Inputs/Outputs
DQ15/A-1	DQ15 (Data Input/Output, Word Mode) A-1 (LSB Address Input, Byte Mode)
CE#	Chip Enable
OE#	Output Enable
WE#	Write Enable
RESET#	Hardware Reset Pin, Active Low
BYTE#	Selects 8-bit or 16-bit mode
RY/BY#	Ready/Busy Output
Vcc	3.0 volt-only single power supply (see Product Selector Guide for speed options and voltage supply tolerances)
Vss	Device Ground
NC	Pin Not Connected Internally

LOGIC SYMBOL



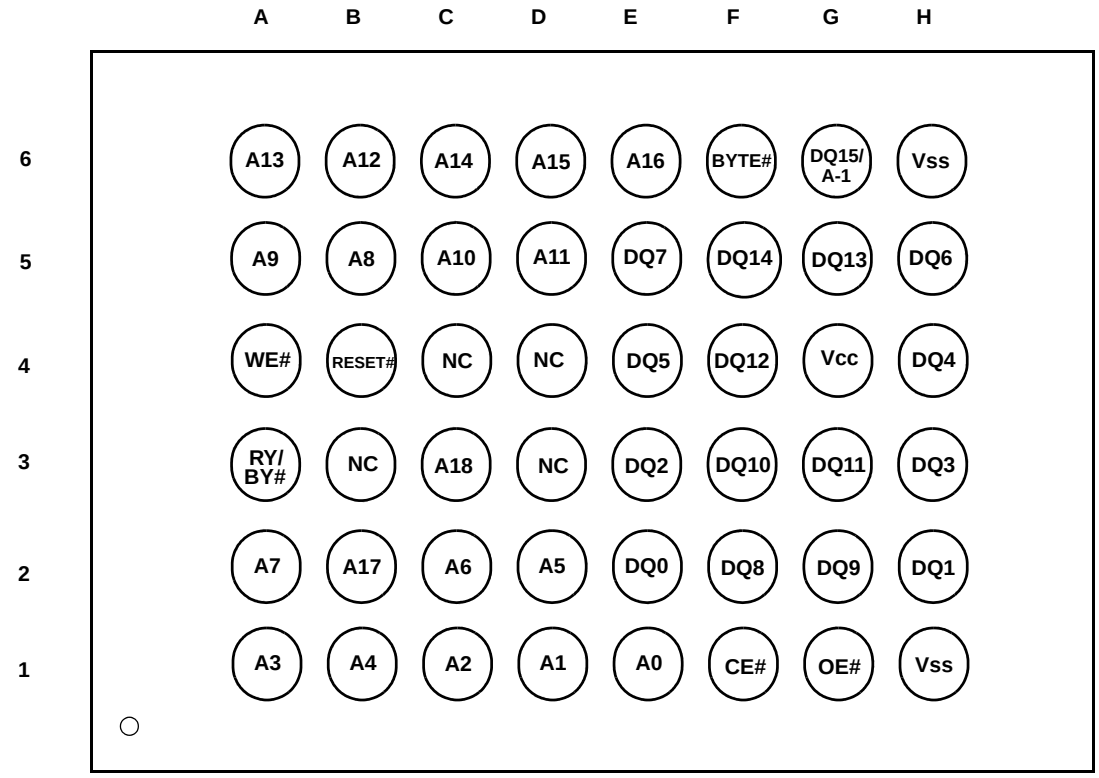
Excel Semiconductor inc.

CONNECTION DIAGRAM



48-Ball FBGA (6 x 8 mm)

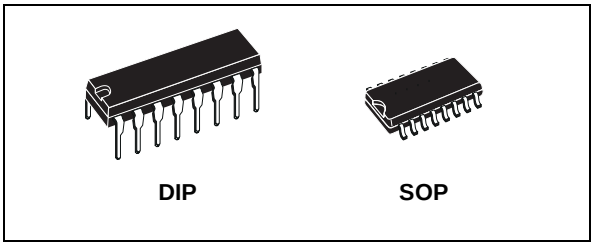
(Top View, Balls Facing Down)



HCF4053B

TRIPLE 2-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER

- LOW "ON" RESISTANCE : 125Ω (Typ.) OVER 15V p.p SIGNAL-INPUT RANGE FOR V_{DD} - V_{EE} = 15V
- HIGH "OFF" RESISTANCE : CHANNEL LEAKAGE ± 100pA (Typ.) at V_{DD} - V_{EE} = 18V
- BINARY ADDRESS DECODING ON CHIP
- HIGH DEGREE OF LINEARITY : < 0.5% DISTORTION TYP. at f_{IS} = 1KHz, V_{IS} = 5 V_{pp}, V_{DD} - V_{SS} ≥ 10V, RL = 10KΩ
- VERY LOW QUIESCENT POWER DISSIPATION UNDER ALL DIGITAL CONTROL INPUT AND SUPPLY CONDITIONS : 0.2 μW (Typ.) at V_{DD} - V_{SS} = V_{DD} - V_{EE} =10V
- MATCHED SWITCH CHARACTERISTICS : R_{ON} = 5Ω (Typ.) FOR V_{DD} - V_{EE} = 15V
- WIDE RANGE OF DIGITAL AND ANALOG SIGNAL LEVELS : DIGITAL 3 to 20, ANALOG TO 20V p.p.
- QUIESCENT CURRENT SPECIF. UP TO 20V
- 5V, 10V AND 15V PARAMETRIC RATINGS
- INPUT LEAKAGE CURRENT I_I = 100nA (MAX) AT V_{DD} = 18V T_A = 25°C
- 100% TESTED FOR QUIESCENT CURRENT
- MEETS ALL REQUIREMENTS OF JEDEC JESD13B " STANDARD SPECIFICATIONS FOR DESCRIPTION OF B SERIES CMOS DEVICES"



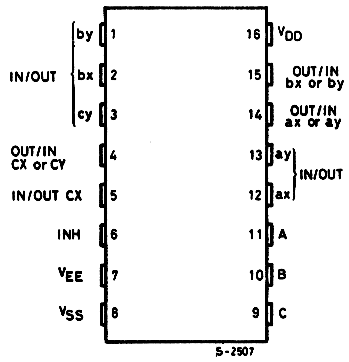
ORDER CODES

PACKAGE	TUBE	T & R
DIP	HCF4053BEY	
SOP	HCF4053BM1	HCF4053M013TR

DESCRIPTION

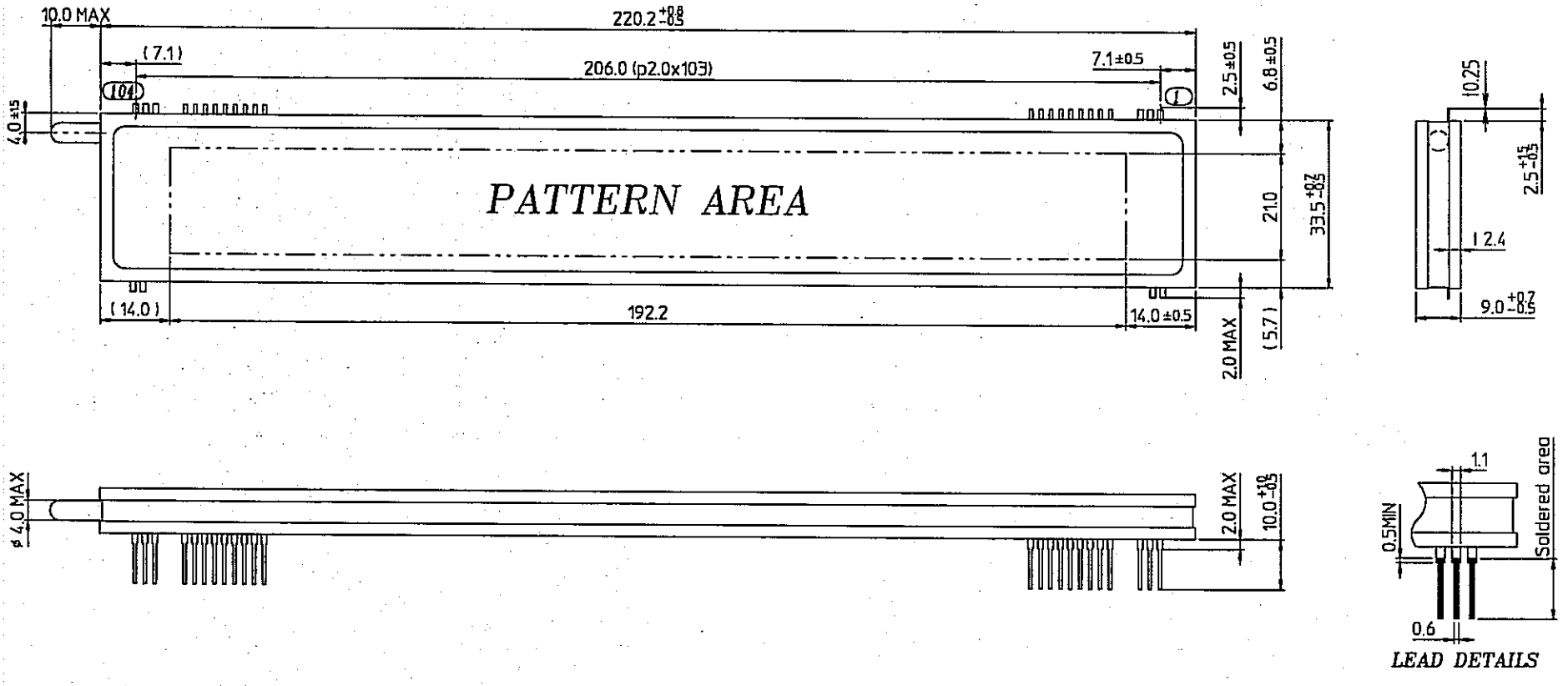
The HCF4053B is a monolithic integrated circuit fabricated in Metal Oxide Semiconductor technology available in DIP and SOP packages.
The HCF4053B analog multiplexer/demultiplexer is a digitally controlled analog switch having low ON impedance and very low OFF leakage current. This multiplexer circuit dissipate extremely low quiescent power over the full V_{DD} - V_{SS} and V_{DD} - V_{EE} supply voltage range, independent of the logic state of the control signals.
When a logic "1" is present at the inhibit input terminal all channel are off. This device is a triple 2-channel multiplexer having three separate digital control inputs, A, B, and C, and an inhibit input. Each control input selects one of a pair of channels which are connected in a single pole double-throw configuration.

PIN CONNECTION



October 2002

OUTER DIMENSIONS



LEAD DETAILS

PIN CONNECTION

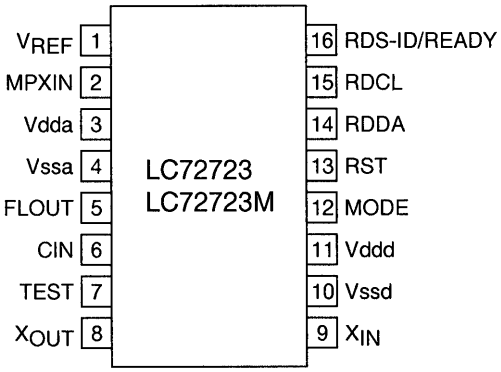
PIN NO.	104	103	102	101	100	99	98	97	96	95	94	93	92	91	90~15	14~6	5	4	3	2	1
CONNECTION	F2	F2	F2	NP	NP	V_{DISP}	L-GND	D-GND	V_{DD}	OSCO	/RST	/CS	/CP	DA	NP	NC	NP	NP	F1	F1	F1

*Notes
Fn : Filament Pin
NP : No Pin
NC : No Connection Pin

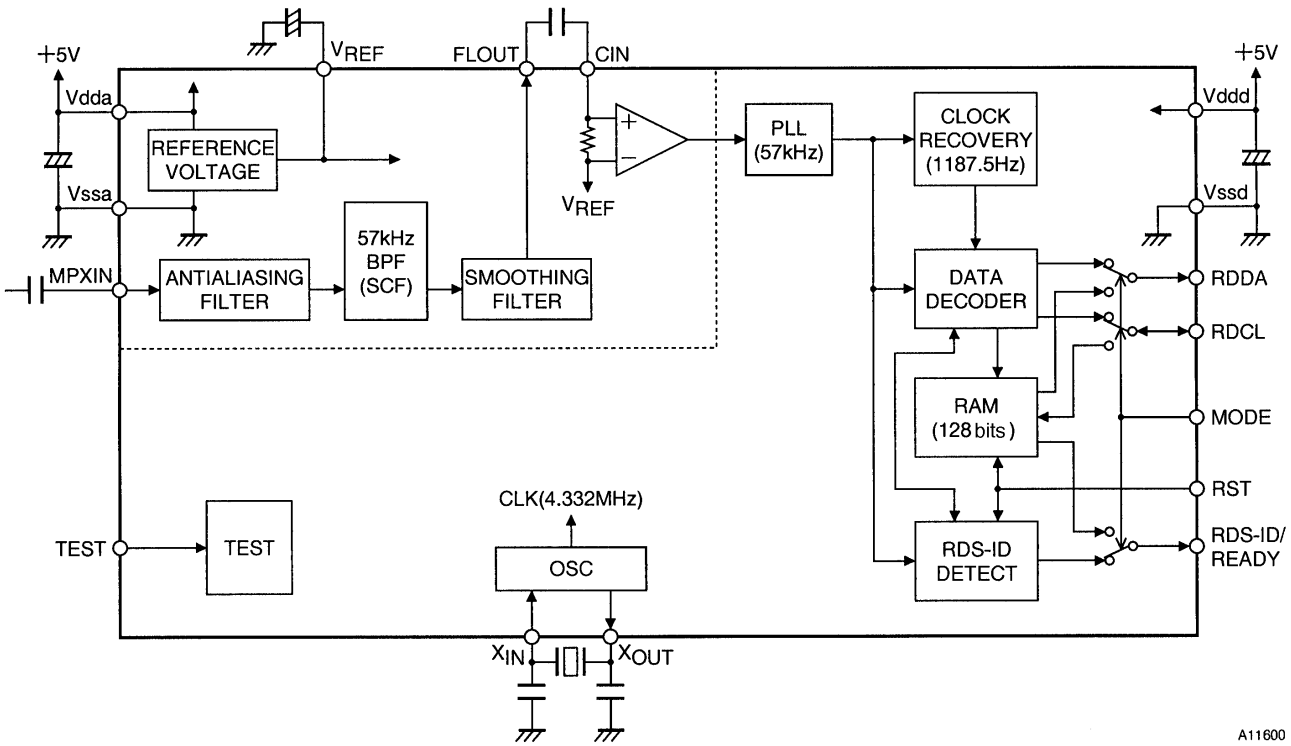
MODEL : HCA-18ML03
OUTER DIMENSIONS
Rev.(1) 20-Jan-2005

LC72723, LC72723M

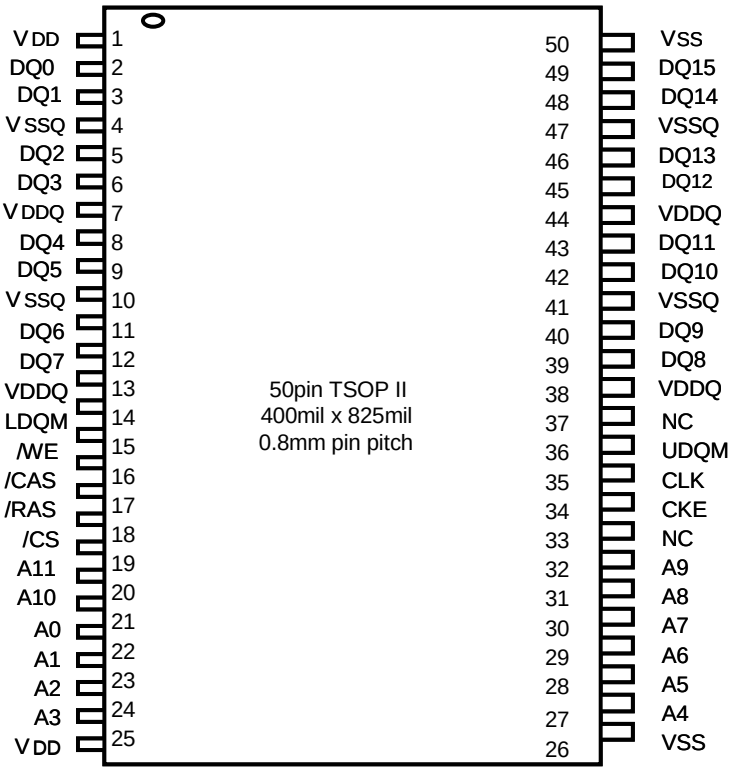
Pin Assignment (DIP16/MFP16)



Block Diagram



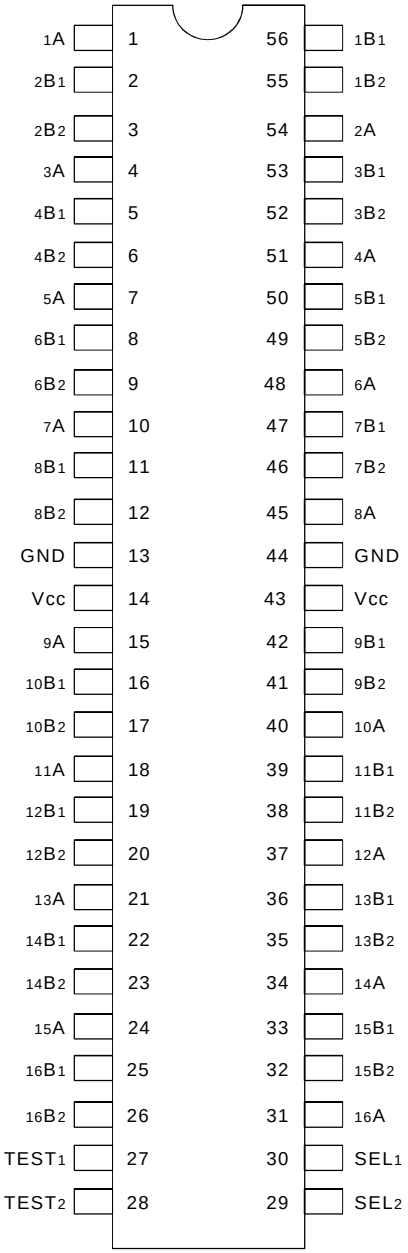
PIN CONFIGURATION



PIN DESCRIPTION

PIN	PIN NAME	DESCRIPTION
CLK	Clock	The system clock input. All other inputs are referenced to the SDRAM on the rising edge of CLK.
CKE	Clock Enable	Controls internal clock signal and when deactivated, the SDRAM will be one of the states among power down, suspend or self refresh.
$\overline{CS}$	Chip Select	Command input enable or mask except CLK, CKE and DQM
BA	Bank Address	Select either one of banks during both $\overline{RAS}$ and $\overline{CAS}$ activity.
A0 ~ A10	Address	Row Address : RA0 ~ RA10, Column Address : CA0 ~ CA7 Auto-precharge flag : A10
$\overline{RAS}$, $\overline{CAS}$, $\overline{WE}$	Row Address Strobe, Column Address Strobe, Write Enable	$\overline{RAS}$, $\overline{CAS}$ and $\overline{WE}$ define the operation. Refer function truth table for details
LDQM, UDQM	Data Input/Output Mask	DQM control output buffer in read mode and mask input data in write mode
DQ0 ~ DQ15	Data Input/Output	Multiplexed data input / output pin
VDD/VSS	Power Supply/Ground	Power supply for internal circuit and input buffer
VDDQ/VSSQ	Data Output Power/Ground	Power supply for DQ
NC	No Connection	No connection

PIN CONFIGURATION



SSOP/ TSSOP
TOP VIEW

ABSOLUTE MAXIMUM RATINGS(1)

Symbol	Description	Max.	Unit
V_{TERM}(2)	Supply Voltage to Ground	– 0.5 to 4.6	V
V_{TERM}(3)	DC Switch Voltage V_S	– 0.5 to 5.5	V
V_{TERM}(3)	DC Input Voltage V_{IN}	– 0.5 to 5.5	V
V_{AC}	AC Input Voltage (pulse width ≤20ns)	– 3	V
I_{OUT}	DC Output Current (max. current/pin)	120	mA
T_{STG}	Storage Temperature	-65 to +150	°C

NOTES:
1. Stresses greater than those listed under ABSOLUTE MAXIMUM RATINGS may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect reliability.
2. V_{CC} terminals.
3. All terminals except V_{CC}.

CAPACITANCE (T_A = +25°C, f = 1MHz, V_{IN} = 0V, V_{OUT} = 0V)

Symbol	Parameter(1)		Typ.	Max.	Unit
C_{IN}	Control Inputs		3	5	pF
$C_{I/O}$	Quickswitch Channels (Switch OFF)	Mux	8	12	pF
		Demux	4	6	
$C_{I/O}$	Quickswitch Channels (Switch ON)	Mux	16	24	pF
		Demux	8	12	

NOTE:
1. This parameter is guaranteed but not production tested.

PIN DESCRIPTION

Pin Names	I/O	Description
xA	I/O	Bus A
xBx	I/O	Bus B
SELx	I	Data Select
TESTx	I	Port Select

FUNCTION TABLE(1)

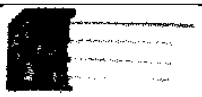
SELx	TESTx	xA	Function
L	L	xB_1	xA to xB_1
H	L	xB_2	xA to xB_2
X	H	xB_1, xB_2	xA to xB_1 and xB_2

NOTE:
1. H = HIGH Voltage Level
   L = LOW Voltage Level
   X = Don't Care

JGD

KBU800G THRU KBU810G

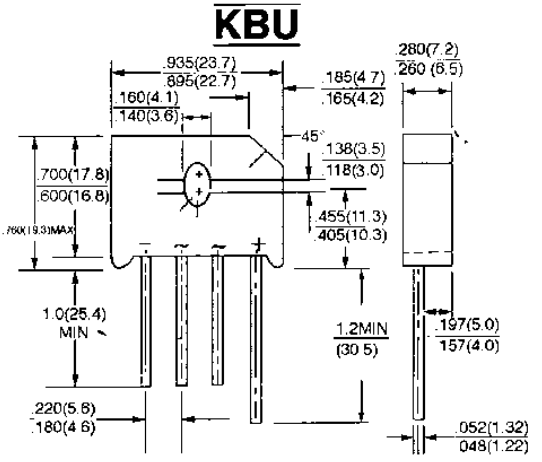
SINGLE PHASE 8.0 AMPS. GLASS PASSIVATED BRIDGE RECTIFIERS



FEATURES

* Ideal for printed circuit board
* Reliable low cost construction
* Plastic material has Underwriters Laboratory flammability classification 94V.O
* Surge overloab rating to 200 Amperes peak.

VOLTAGE RANGE
50 to 1000 Volts
CURRENT
8.0 Amperes



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25℃ ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%

TYPE NUMBER	SYMBOLS	KBU 800G	KBU 801G	KBU 802G	KBU 804G	KBU 806G	KBU 808G	KBU 810G	UNITS
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Bridge Input Voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum D.C Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current @ $T_C = 90℃$ (1)(3) $T_A = 45℃$ (2)	$I_{F(AV)}$	8.0							A
Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load(JEDEC method)	I_{FSM}	175							A
Maximum Forward Voltage Drop per element @ 4.0A	V_F	1.10							V
Maximum Reverse Current at Rated @ $T_A = 25℃$ D.C. Blocking Voltage per element @ $T_A = 100℃$	I_R	10 500							μA μA
Typical thermal resistance per leg (NOTE 2) (NOTE 3)	$R_{\theta JA}$ $R_{\theta JC}$	18 3.0							℃/W
Operating Temperature Range	T_J	−55 to +150							℃
Storage Temperature Range	T_{STG}	−55 to +150							℃

NOTE:
(1) Recommended mounted position is to bolt down on heatsink with silicone thermal compound for maximum heat transfer with #6 screw
(2) Units mounted in free air, no heatsink, P.C.B. 0.375"(9.5mm) lead length with 0.5×0.5" (12×12mm) copper pads
(3) Units mounted on a 3.0×3.0×0.11" (7.5×7.5×0.3cm) Cu. Plate heatsink

KEC

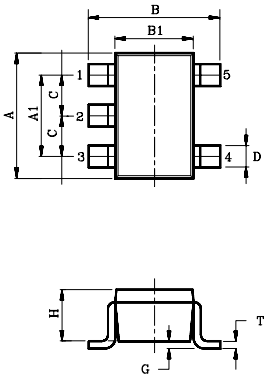
SEMICONDUCTOR
TECHNICAL DATA

KIC7SZ08FU
SILICON MONOLITHIC CMOS
DIGITAL INTEGRATED CIRCUIT

2 INPUT AND GATE

FEATURES

- High Output Drive : ±24mA (Typ.)
  @V_{CC}=3V
- Super High Speed Operation : t_{PD}=2.7ns(Typ.)
  @V_{CC}=5V, 50pF
- Operation Voltage Range : $V_{CC(opr)}$=1.8~5.5V.
- Supply Voltage Data Retention : V_{CC}=1.5~5.5V.
- 5V Tolerant Function



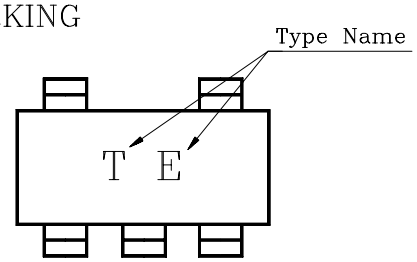
DIM	MILLIMETERS
A	2.00± 0.20
A1	1.3± 0.1
B	2.1± 0.1
B1	1.25± 0.1
C	0.65
D	0.2+0.10/−0.05
G	0~0.1
H	0.9± 0.1
T	0.15+0.1/−0.05

USV

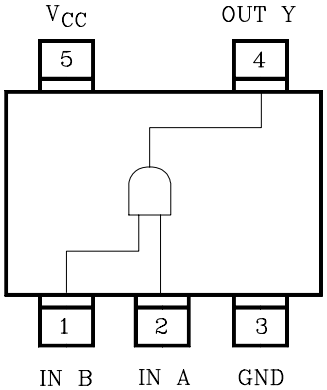
MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage Range	V_{CC}	-0.5~6	V
DC Input Voltage	V_{IN}	-0.5~6	V
DC Output Voltage	V_{OUT}	-0.5~6	V
Input Diode Current	I_{IK}	±20	mA
Output Diode Current	I_{OK}	±20	mA
DC Output Current	I_{OUT}	±50	mA
DC V_{CC}/Ground Current	I_{CC}	±50	mA
Power Dissipation	P_D	200	mW
Storage Temperature	T_{stg}	-65~150	℃
Lead Temperature (10s)	T_L	260	℃

MARKING



PIN CONNECTION(TOP VIEW)



cosmo

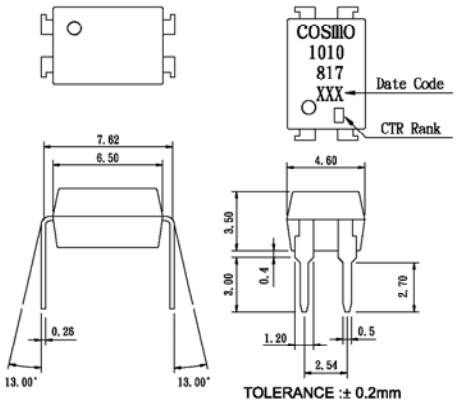
High Reliability Photo Coupler K1010

UL 1577 (File No.E169586) VDE 0884 / 0860 / 0805 (File No.101347)

Features

1. Current transfer ratio (CTR:MIN.50% at IF=5mA Vce=5V)
2. High isolation voltage between input and output (Viso:5000Vrms).
3. Compact dual-in-line package.
4. Available package : DIP/ SMD/ H.

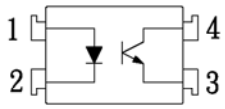
Outside Dimension : Unit (mm)



Applications

1. Registers, copiers, automatic vending machines.
2. System appliances, measuring instruments.
3. Computer terminals, programmable controllers.
4. Communications, telephone, etc.
5. Electric home appliances, such as oil fan heaters, Microwave oven, Washer, Refrigerator, Air conditioner, etc.
6. Medical instruments, physical and chemical equipment.
7. Signal transmission between circuits of different potentials and impedances.
8. Facsimile equipment, Audio, Video.
9. Switching power supply, Laser beam printer.

Schematic : Top View



1. Anode
2. Cathode
3. Emitter
4. Collector

Absolute Maximum Ratings

(Ta=25°C)

	Parameter	Symbol	Rating	Unit
Input	Forward current	IF	50	mA
	Peak forward current	IFM	1	A
	Reverse voltage	VR	6	V
	Power dissipation	PD	70	mW
Output	Collector-emitter voltage	VCEO	60	V
	Emitter-collector voltage	VECO	6	V
	Collector current	IC	50	mA
	Collector power dissipation	PC	150	mW
	Total power dissipation	Ptot	200	mW
	Isolation voltage 1 minute	Viso	5000	Vrms
	Operating temperature	Topr	-30 to +100	°C
	Storage temperature	Tstg	-55 to +125	°C
	Soldering temperature 10 second	Tsol	260	°C

Electro-optical Characteristics

(Ta=25°C)

	Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	VF	IF =20mA	—	1.2	1.4	V
	Peak forward voltage	VFM	IFM =0.5A	—	—	3.0	V
	Reverse current	IR	VR =4V	—	—	10	uA
	Terminal capacitance	Ct	V=0, f=1kHz	—	30	—	pF
Output	Collector dark current	ICEO	VCE =20V	—	—	0.1	uA
Transfer charac-teristics	Current transfer ratio	CTR	IF=5mA, VCE =5V	50	—	600	%
	Collector-emitter saturation voltage	VCE(sat)	IF=20mA, IC=1mA	—	0.1	0.2	V
	Isolation resistance	Riso	DC500V	$5X10^{10}$	10^{11}	—	ohm
	Floating capacitance	Cf	V=0, f=1MHz	—	0.6	1.0	pF
	Cut-off frequency	fc	VCC=5V, IC=2mA, RL=100ohm	—	80	—	kHz
	Response time(Rise)	tr	VCE=2V, IC=2mA, RL=100ohm	—	4	18	us
	Response time(Fall)	tf		—	3	18	us

KOREA ELECTRONICS CO.,LTD.

SEMICONDUCTOR
TECHNICAL DATA

KTD600K
EPITAXIAL PLANAR NPN TRANSISTOR

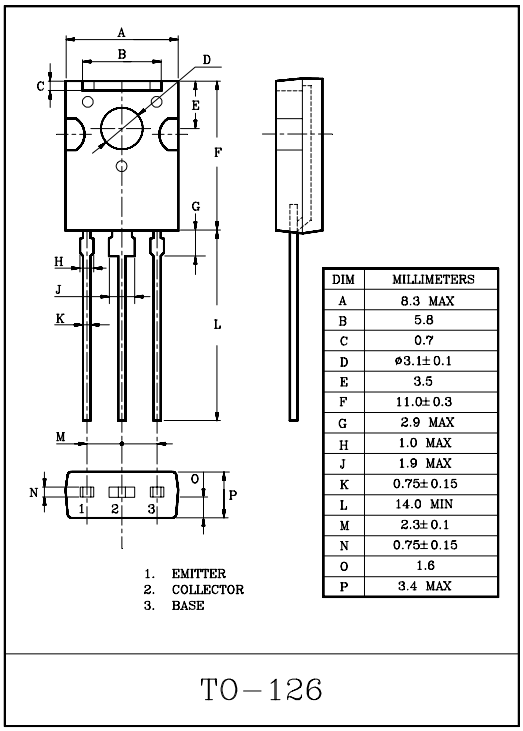
LOW FREQUENCY POWER AMP,
MEDIUM SPEED SWITCHING APPLICATIONS

FEATURES

- High breakdown voltage V_{CEO} 120V, high current 1A.
- Low saturation voltage and good linearity of h_{FE}.

MAXIMUM RATINGS (Ta=25℃)

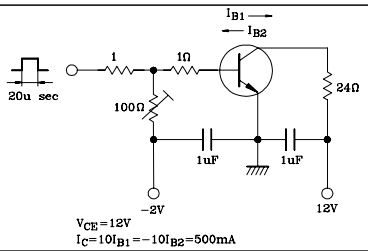
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	120	V
Collector-Emitter Voltage		V_{CEO}	120	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current		I_C	1	A
		I_{CP}	2	
Collector Power Dissipation	Ta=25℃	P_C	1.5	W
	Tc=25℃		8	
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55~150	℃



DIM	MILLIMETERS
A	8.3 MAX
B	5.8
C	0.7
D	ø3.1±0.1
E	3.5
F	11.0±0.3
G	2.9 MAX
H	1.0 MAX
J	1.9 MAX
K	0.75±0.15
L	14.0 MIN
M	2.3±0.1
N	0.75±0.15
O	1.6
P	3.4 MAX

TO-126

ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut of Current		I_{CBO}	V_{CB}=50V, I_E=0	-	-	1	μA
Emitter Cut of Current		I_{EBO}	V_{EB}=4V, I_C=0	-	-	1	μA
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	I_C=10μA	120	-	-	V
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	I_C=1mA	120	-	-	V
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	I_E=10μA	5	-	-	V
DC Current Gain		h_{FE}(1)Note	V_{CE}=5V, I_C=50mA	100	-	320	
		h_{FE}(2)	V_{CE}=5V, I_C=500mA	20	-	-	
Gain Bandwidth Product		f_T	V_{CE}=10V, I_C=50mA	-	130	-	MHz
Output Capacitance		C_{ob}	V_{CB}=10V, f=1MHz	-	20	-	pF
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=500mA, I_B=50mA	-	0.15	0.4	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	I_C=500mA, I_B=50mA	-	0.85	1.2	V
Switching Time	Turn-on Time	t_{on}		-	100	-	nS
	Turn-off Time	t_{off}		-	500	-	
	Storage Time	t_{stg}		-	700	-	

(Note) : h_{FE}(1) Classification Y:100~200, GR:160~320

Figure 3: Connection Diagram (top view)

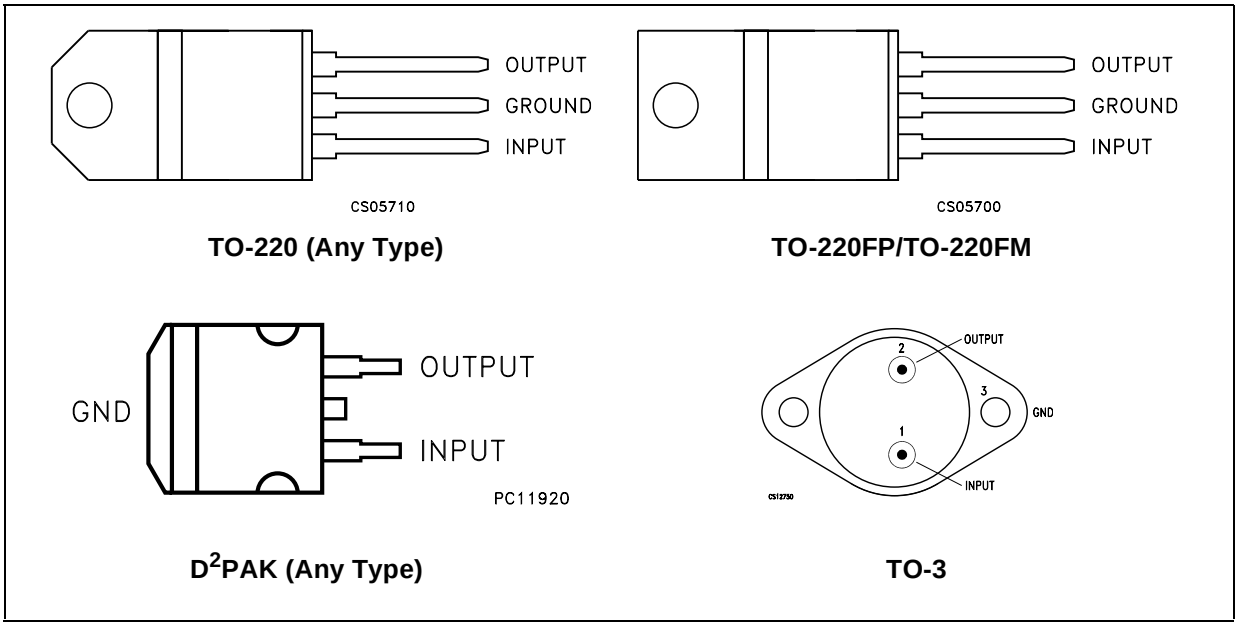


Table 3: Order Codes

TYPE	TO-220 (A Type)	TO-220 (C Type)	TO-220 (E Type)	D²PAK (A Type) (*)	D²PAK (C Type) (T & R)	TO-220FP	TO-220FM	TO-3
L7805								L7805T
L7805C	L7805CV	L7805C-V	L7805CV1	L7805CD2T	L7805C-D2TR	L7805CP	L7805CF	L7805CT
L7852C	L7852CV			L7852CD2T		L7852CP	L7852CF	L7852CT
L7806								L7806T
L7806C	L7806CV	L7806C-V		L7806CD2T		L7806CP	L7806CF	L7806CT
L7808								L7808T
L7808C	L7808CV	L7808C-V		L7808CD2T		L7808CP	L7808CF	L7808CT
L7885C	L7885CV			L7885CD2T		L7885CP	L7885CF	L7885CT
L7809C	L7809CV	L7809C-V		L7809CD2T		L7809CP	L7809CF	L7809CT
L7810C	L7810CV			L7810CD2T		L7810CP		
L7812								L7812T
L7812C	L7812CV	L7812C-V		L7812CD2T		L7812CP	L7812CF	L7812CT
L7815								L7815T
L7815C	L7815CV	L7815C-V		L7815CD2T		L7815CP	L7815CF	L7815CT
L7818								L7818T
L7818C	L7818CV			L7818CD2T		L7818CP	L7818CF	L7818CT
L7820								L7820T
L7820C	L7820CV			L7820CD2T		L7820CP	L7820CF	L7820CT
L7824								L7824T
L7824C	L7824CV			L7824CD2T		L7824CP	L7824CF	L7824CT

(*) Available in Tape & Reel with the suffix "-TR".

L7900

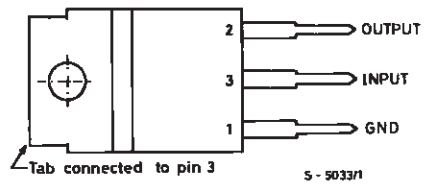
ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_i	DC Input Voltage (for V_O = 5 to 18V) (for V_O = 20, 24V)	-35 -40	V V
I_o	Output Current	Internally limited	
P_{tot}	Power Dissipation	Internally limited	
T_{op}	Operating Junction Temperature Range	0 to 150	°C
T_{stg}	Storage Temperature Range	- 65 to 150	°C

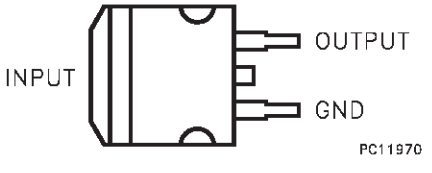
THERMAL DATA

Symbol	Parameter		D^2PAK	TO-220	ISOWATT220	TO-3	Unit
$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	3	3	4	4	°C/W
$R_{thj\text{-}amb}$	Thermal Resistance Junction-ambient	Max	62.5	50	60	35	°C/W

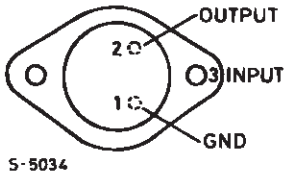
CONNECTION DIAGRAM AND ORDERING NUMBERS (top view)



TO-220 & ISOWATT220



D^2PAK

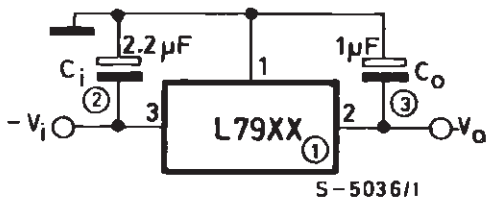


TO-3

Type	TO-220	D^2PAK (*)	ISOWATT220	TO-3	Output Voltage
L7905C	L7905CV	L7905CD2T	L7905CP	L7905CT	-5V
L7952C	L7952CV	L7952CD2T		L7952CT	-5.2V
L7906C	L7906CV	L7906CD2T	L7906CP	L7906CT	-6V
L7908C	L7908CV	L7908CD2T	L7908CP	L7908CT	-8V
L7912C	L7912CV	L7912CD2T	L7912CP	L7912CT	-12V
L7915C	L7915CV	L7915CD2T	L7915CP	L7915CT	-15V
L7918C	L7918CV	L7918CD2T	L7918CP	L7918CT	-18V
L7920C	L7920CV	L7920CD2T	L7920CP	L7920CT	-20V
L7922C	L7922CV	L7922CD2T		L7922CT	-22V
L7924C	L7924CV	L7924CD2T	L7924CP	L7924CT	-24V

(*) AVAILABLE IN TAPE AND REEL WITH "-TR" SUFFIX

APPLICATION CIRCUIT

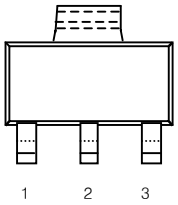


1A LOWDROP OUT VOLTAGE REGULATOR (ADJUSTABLE & FIXED) LM1117

FEATURES

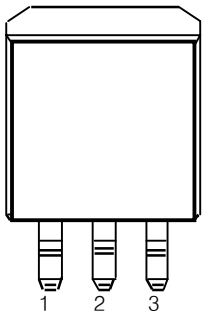
- Output Current up to 1 A
- Low Dropout Voltage (700mV at 1A Output Current)
- Three Terminal Adjustable or Fixed 1.5V, 1.8V, 2.5V, 2.85V, 3.0V, 3.3V, 5.0V
- 2.85V Device for SCSI-II Active Terminator
- 0.04% Line Regulaion, 0.1% Load Regulation
- Very Low Quiescent Current
- Internal Current andTerminal Limit
- Logic-Controlled Electronics Shutdown
- Surface Mount Package SOT-223 & TO-263 (D2-Pack)
- 100% Thermal Limit Burn-In

SOT-223 PKG (FRONT VIEW)



PIN FUNCTION
1. Adj/Gnd
2. Vout
3. Vin

TO-263 (D2 PKG, FRONT VIEW)



PIN FUNCTION
1. Adj/Gnd
2. Vout
3. Vin

APPLICATION

- Active SCSI Terminators
- Portable/Plan Top/Notebook Computers
- High Efficiency Linear Regulators
- SMPS Post Regulators
- Mother B/D Clock Supplies
- Disk Drives
- Battery Chargers

ORDERING INFORMATION

Device (Marking)	Package
LM1117S	SOT-223
LM1117S-XX	
LM1117T	TO-263 (D2)
LM1117T-XX	

(X=Output Voltage=1.5V, 1.8V, 2.5V, 2.85V, '3.0V, 3.3V, 5.0V, Adjustable=AD)

DESCRIPTION

The LM1117 is a low power positive-voltage regulator designed to meet 1A output current and comply with SCSI-II specifications with a fixed output voltage of 2.85V. This device is an excellent choice for use in battery-powered applications, as active terminators for the SCSI bus, and portable computers.
The LM1117 features very low quiescent current and very low dropout voltage of 700mV at a full load and lower as output current decreases. LM1117 is available as an adjustable or fixed 1.5V, 1.8V, 2.5V, 2.85V, 3.0V, 3.3V, and 5.0V output voltages.
The LM1117 is offered in a 3-pin surface mount package SOT-223 & TO-263. The output capacitor of 10μF or larger is needed for output stability of LM1117 as required by most of the other regulator circuits.

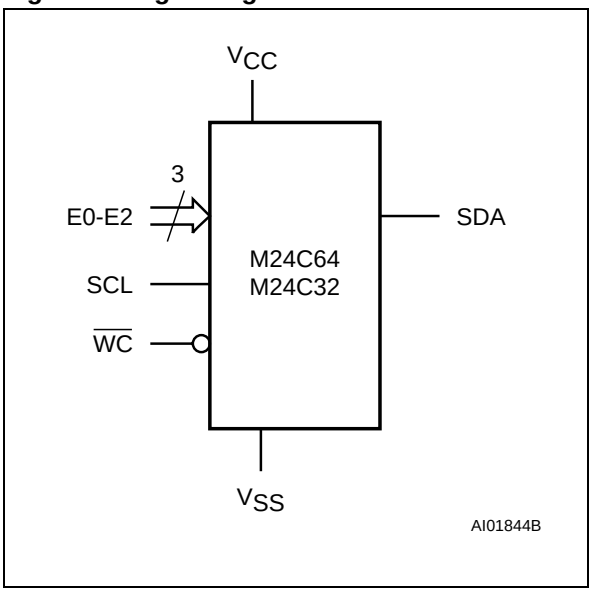
ABSOLUTE MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	MIN.	MAX.	UNIT
DC Input Voltage	V_{IN}		7	V
Lead Temperature (Soldering, 5 Seconds)	T_{SOL}		260	℃
Storage Temperature Range	T_{STG}	-65	150	℃
Operating Junction Temperature Range	T_{OPR}	0	125	℃

SUMMARY DESCRIPTION

These I^2C-compatible electrically erasable programmable memory (EEPROM) devices are organized as 8192 x 8 bits (M24C64) and 4096 x 8 bits (M24C32).

Figure 2. Logic Diagram



I^2C uses a two-wire serial interface, comprising a bi-directional data line and a clock line. The devices carry a built-in 4-bit Device Type Identifier code (1010) in accordance with the I^2C bus definition.

The device behaves as a slave in the I^2C protocol, with all memory operations synchronized by the serial clock. Read and Write operations are initiated by a Start condition, generated by the bus master. The Start condition is followed by a Device Select Code and Read/Write bit (RW) (as described in Table 3.), terminated by an acknowledge bit.

When writing data to the memory, the device inserts an acknowledge bit during the 9th bit time, following the bus master's 8-bit transmission. When data is read by the bus master, the bus master acknowledges the receipt of the data byte in the same way. Data transfers are terminated by a Stop condition after an Ack for Write, and after a NoAck for Read.

Table 2. Signal Names

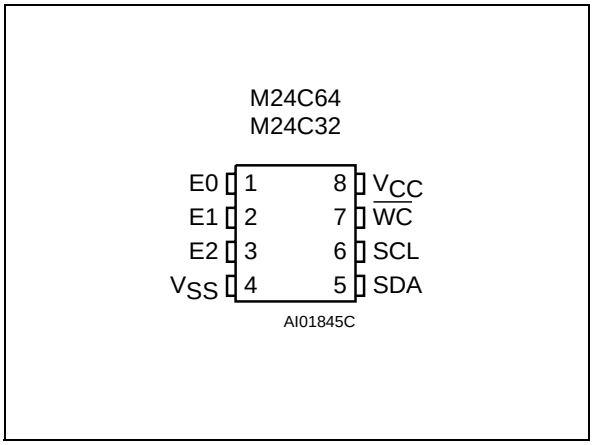
E0, E1, E2	Chip Enable
SDA	Serial Data
SCL	Serial Clock
$\overline{WC}$	Write Control
V_{CC}	Supply Voltage
V_{SS}	Ground

Power On Reset: V_{CC} Lock-Out Write Protect

In order to prevent data corruption and inadvertent Write operations during Power-up, a Power On Reset (POR) circuit is included. At Power-up, the internal reset is held active until V_{CC} has reached the Power On Reset (POR) threshold voltage, and all operations are disabled – the device will not respond to any command. In the same way, when V_{CC} drops from the operating voltage, below the Power On Reset (POR) threshold voltage, all operations are disabled and the device will not respond to any command.

A stable and valid V_{CC} (as defined in Table 9. and Table 10.) must be applied before applying any logic signal.

Figure 3. DIP, SO, TSSOP and UFDFPN Connections



Note: See PACKAGE MECHANICAL section for package dimensions, and how to identify pin-1.

FAIRCHILD SEMICONDUCTOR®

www.fairchildsemi.com

MC78XX/LM78XX/MC78XXA

3-Terminal 1A Positive Voltage Regulator

Features

- Output Current up to 1A
- Output Voltages of 5, 6, 8, 9, 10, 12, 15, 18, 24V
- Thermal Overload Protection
- Short Circuit Protection
- Output Transistor Safe Operating Area Protection

Description

The MC78XX/LM78XX/MC78XXA series of three terminal positive regulators are available in the TO-220/D-PAK package and with several fixed output voltages, making them useful in a wide range of applications. Each type employs internal current limiting, thermal shut down and safe operating area protection, making it essentially indestructible. If adequate heat sinking is provided, they can deliver over 1A output current. Although designed primarily as fixed voltage regulators, these devices can be used with external components to obtain adjustable voltages and currents.

TO-220

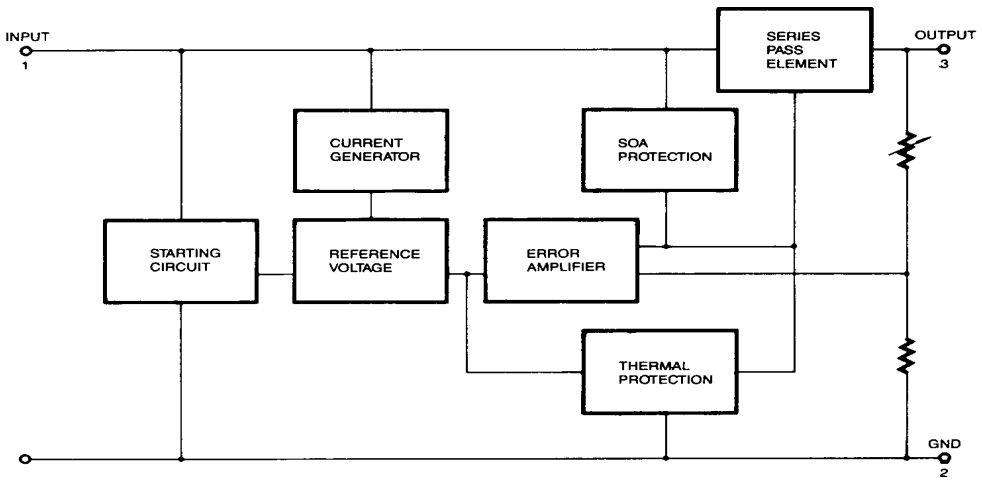
1

D-PAK

1

1. Input 2. GND 3. Output

Internal Block Digram



Rev. 1.0.1

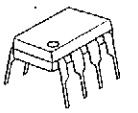
JRC **NJM2068**

LOW-NOISE DUAL OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

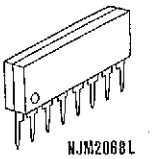
The NJM2068 is a high performance, low noise dual operational amplifier. This amplifier features popular pin-out, superior noise performance, and superior total harmonic distortion. This amplifier also features guaranteed noise performance with substantially higher gain-bandwidth product and slew rate which far exceeds that of the 4558 type amplifier. The specially designed low noise input transistors allow the NJM2068 to be used in very low noise signal processing applications such as audio preamplifiers and servo error amplifier.

■ PACKAGE OUTLINE


NJM2068D


NJM2068M

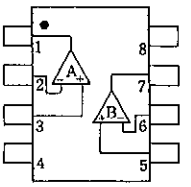

NJM2068V


NJM2068L

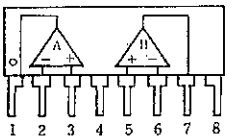
■ FEATURES

- Operating Voltage (±4V~±18V)
- Low Total Harmonic Distortion (0.001% typ.)
- Low Noise Voltage (FLAT+JISA, 0.56 μV typ.)
- High Slew Rate (6V/μs typ.)
- Unity Gain Bandwidth (27MHz @f=10kHz)
- Package Outline DIP8, DMP8, SIP8, SSOP8
- Bipolar Technology

■ PIN CONFIGURATION



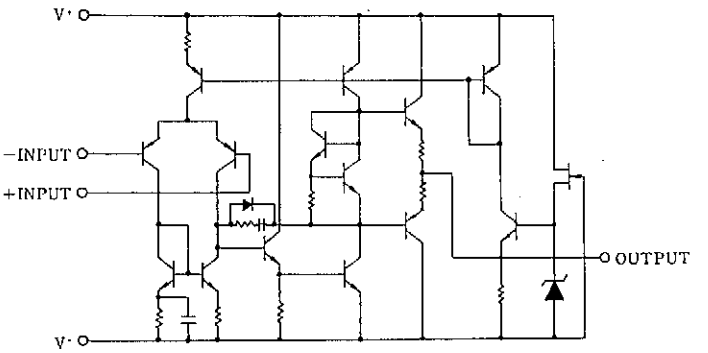
NJM2068D
NJM2068M
NJM2068V



NJM2068L

PIN FUNCITON
1. A OUTPUT
2. A−INPUT
3. A+INPUT
4. V⁻
5. B+INPUT
6. B−INPUT
7. B OUTPUT
8. V⁺

■ EQUIVALENT CIRCUIT (1/2 Shown)



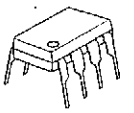
JRC **NJM2068**

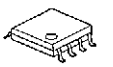
LOW-NOISE DUAL OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

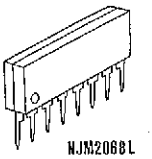
The NJM2068 is a high performance, low noise dual operational amplifier. This amplifier features popular pin-out, superior noise performance, and superior total harmonic distortion. This amplifier also features guaranteed noise performance with substantially higher gain-bandwidth product and slew rate which far exceeds that of the 4558 type amplifier. The specially designed low noise input transistors allow the NJM2068 to be used in very low noise signal processing applications such as audio preamplifiers and servo error amplifier.

■ PACKAGE OUTLINE


NJM2068D


NJM2068M

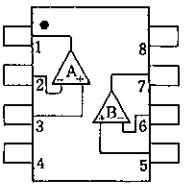

NJM2068V


NJM2068L

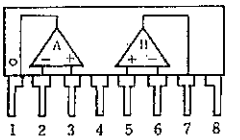
■ FEATURES

- Operating Voltage (±4V~±18V)
- Low Total Harmonic Distortion (0.001% typ.)
- Low Noise Voltage (FLAT+JISA, 0.56 μV typ.)
- High Slew Rate (6V/μs typ.)
- Unity Gain Bandwidth (27MHz @f=10kHz)
- Package Outline DIP8, DMP8, SIP8, SSOP8
- Bipolar Technology

■ PIN CONFIGURATION



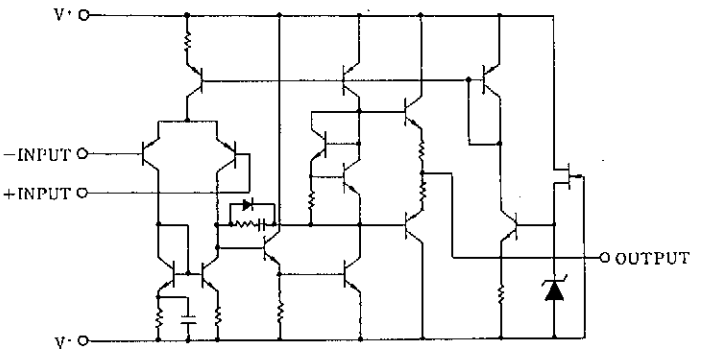
NJM2068D
NJM2068M
NJM2068V



NJM2068L

PIN FUNCITON
1. A OUTPUT
2. A−INPUT
3. A+INPUT
4. V⁻
5. B+INPUT
6. B−INPUT
7. B OUTPUT
8. V⁺

■ EQUIVALENT CIRCUIT (1/2 Shown)



JRC **NJM2137**

ULTRA WIDE BAND, HIGH SLUE RATE DUAL OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

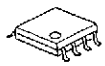
The NJM2137 is an ultra wide band, high slew rate dual operational amplifier operated from low voltage (±1.35V).

It can apply to active filter, high speed analog and digital signal processor, line driver, HDTV, industrial measurement equipment and others.

It can also apply to portable communication items because of low operating voltage and low operating current.

■ PACKAGE OUTLINE

NJM2137V

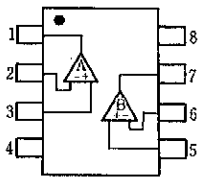


NJM2137M

■ FEATURES

- Operating Voltage (±1.35V ~ ±6V)
- Ultra Wide Band (200MHz typ.)
- High Slew Rate (45V/μs typ.)
- Low Operating Current (1.14mA typ.)
- Bipolar Technology
- Package Outline SSOP8, DMP8

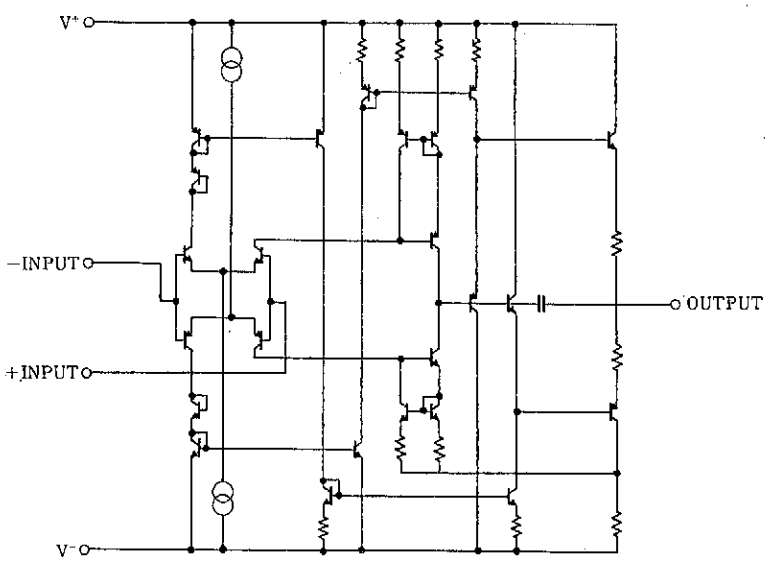
■ PIN CONFIGURATION



NJM2137M
NJM2137V

PIN FUNCTION
1. A OUTPUT
2. A −INPUT
3. A +INPUT
4. V⁻
5. B +INPUT
6. B −INPUT
7. B OUTPUT
8. V⁺

■ EQUIVALENT CIRCUIT (1/2 Shown)



JRC **NJM2391**

LOW DROPOUT VOLTAGE REGULATOR

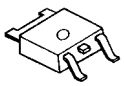
■ GENERAL DESCRIPTION

The NJM2391 is low dropout voltage regulators featuring high precision voltage.

It is suitable for Notebook PCs, PC cards and hard disks where 3.3V need to be generated from 5V supply.

A small TO-252 package is adopted for the space saving.

■ PACKAGE OUTLINE

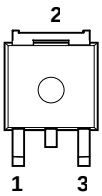


NJM2391DL1

■ FEATURES

- ●Output Current Io(max.)=1A
- ●High Precision Output Voltage Vo±1%
- ●Low Dropout Voltage ΔV_{I-O} =1.1V typ. At Io=1A
- ●Internal Excessive Voltage Protection Circuit
- ●Internal Short Circuit Current Limit
- ●Internal Thermal Overload Protection
- ●Bipolar Technology
- ●Package Outline TO-252

■ PIN CONFIGURATION



PIN FUNCTION
1.V_{IN}
2.GND
3.V_{OUT}

NJM2391DL1

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V^+	+10	V
Power Dissipation	P_D	TO-252 8 (Tc=25°C) 0.8(Ta≤25°C)	W
Operating Temperature	Topr	–40 ~ +85	°C
Storage Temperature	Tstg	–50 ~ +125	°C

■ OUTPUT VOLTAGE RANK LIST

Device Name	V_{OUT}
NJM2391DL1-25	2.5V
NJM2391DL1-26	2.6V
NJM2391DL1-28	2.85V
NJM2391DL1-03	3.0V
NJM2391DL1-33	3.3V
NJM2391DL1-35	3.5V
NJM2391DL1-05	5.0V

JRC **NJM2595**

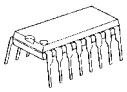
5-INPUT 3-OUTPUT VIDEO SWITCH

■ GENERAL DESCRIPTION

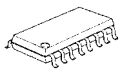
The **NJM2595** is a 5-input 3-output video switch. Its switches select one from five signals received from VTR,TV,DVD, TV-GAME and others.

The NJM2595 is designed for audio items, such as AV amplifier and others.

■ PACKAGE OUTLINE



NJM2595D

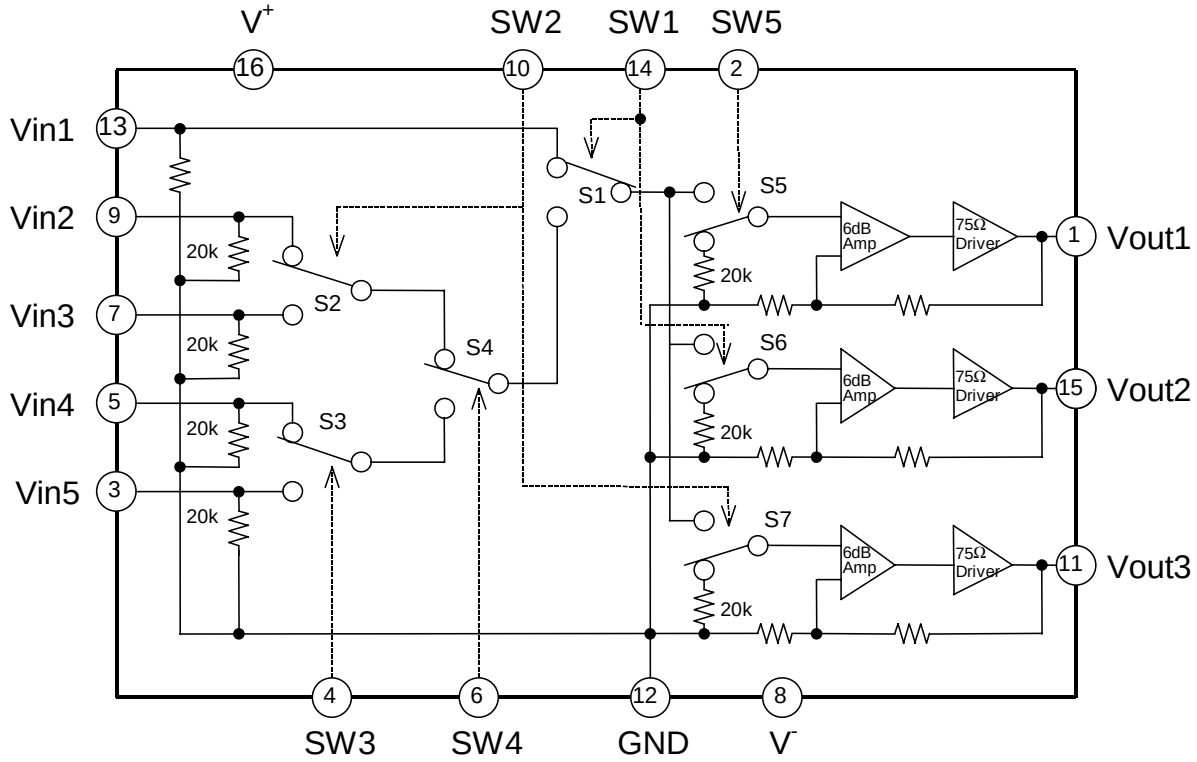


NJM2595M

■ FEATURES

- 5-input 3-output
- Operating Voltage ±4.0 to ±6.5V
- Operating current ±15mAtyp. at Vcc=±5V
- Crosstalk -65dBtyp.
- Internal 6dB Amplifier
- Internal 75Ω Driver
- Bipolar Technology
- Package Outline DIP16,DMP16

■ PIN CONFIGURATION and BLOCK DIAGRAM



JRC **NJM2845/46**

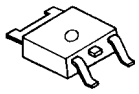
LOW DROPOUT VOLTAGE REGULATOR

■ GENERAL DESCRIPTION

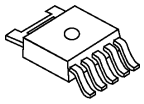
The NJM2845 is low dropout voltage regulator. Advanced Bipolar technology achieves low noise, high ripple rejection and low quiescent current.

NJM2845 is 3 terminal type and NJM2846 is ON/OFF control built in type. These product can be selected according to the applications.

■ PACKAGE OUTLINE



NJM2845DL1

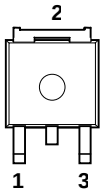


NJM2846DL3

■ FEATURES

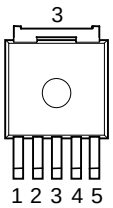
- ● High Ripple Rejection 75dB typ. (f=1kHz,3V Version)
- ● Output Noise Voltage Vno=45μVrms typ. (Vo=3V Version)
- ● Output capacitor with 2.2μF ceramic capacitor (Vo≥2.6V)
- ● Output Current Io(max.)=800mA
- ● High Precision Output Vo ±1.0%
- ● Low Dropout Voltage 0.18V typ. (Io=500mA)
- ● ON/OFF Control (NJM2846)
- ● Internal Short Circuit Current Limit
- ● Internal Thermal Overload Protection
- ● Bipolar Technology
- ● Package Outline TO-252-3 (NJM2845DL1), TO-252-5 (NJM2846DL3)

■ PIN CONFIGURATION



1.V_{IN}
2.GND
3.V_{OUT}

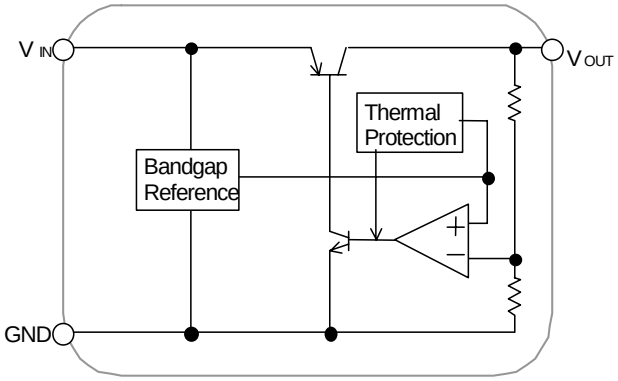
NJM2845DL1



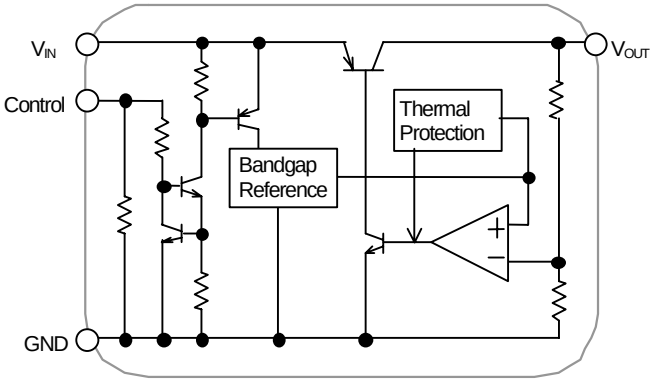
1.CONTROL
2.V_{IN}
3.GND
4.Vo
5.NC

NJM2846DL3

■ EQUIVALENT CIRCUIT



NJM2845DL1



NJM2846DL3

JRC

NJM4556A

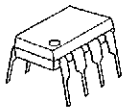
DUAL HIGH CURRENT OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

The NJM4556A integrated circuit is a high-gain, high output current dual operational amplifier capable of driving ±70mA into 150 Ω loads (±10.5V output voltage), and operating low supply voltage (V^+/V^-=±2V~).

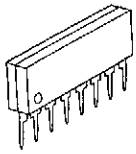
The NJM4556A combines many of the fetures of the popular NJM4558 as well as having the capability of driving 150Ω loads. In addition, the wide band-width, low noise, high slew rate and low distortion of the NJM4556A make it ideal for many audio, telecommunications and instrumentation applications.

■ PACKAGE OUTLINE

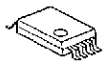


NJM4556AD

NJM4556AM



NJM4556AL

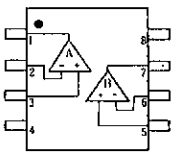


NJM4556AV

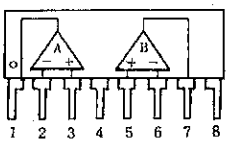
■ FEATURES

- Operating Voltage (±2V~±18V)
- High Output Current (Io=70mA)
- Slew Rate (3V/μs typ.)
- Gain Band Width Product (8MHz typ.)
- Package Outline DIP8, DMP8, SIP8, SSOP8
- Bipolar Technology

■ PIN CONFIGURATION



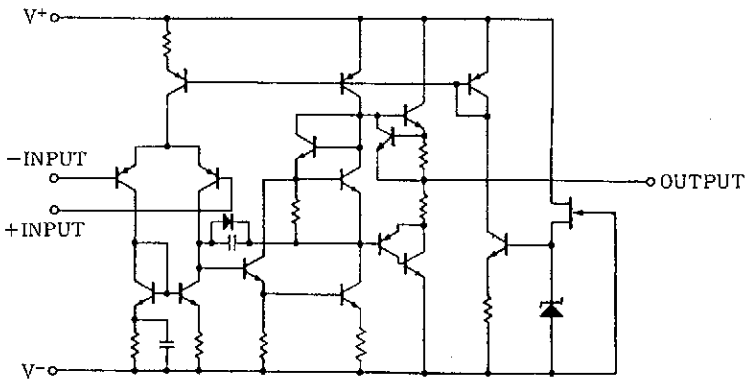
NJM4556AD,
NJM4556AM
NJM4556AV



NJM4556AL

PIN FUNCTION
1. A OUTPUT
2. A−INPUT
3. A+INPUT
4. V⁻
5. B+INPUT
6. B−INPUT
7. B OUTPUT
8. V⁺

■ EQUIVALENT CIRCUIT (1/2 Shown)



JRC **NJM7900**

3-TERMINAL NEGATIVE VOLTAGE REGULATOR

■ GENERAL DESCRIPTION

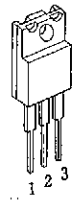
The NJM7900 series of Monolithic 3-Terminal Negative Regulators is constructed using the New JRC Planar epitaxial process. These negative regulators are intended as complements to the popular NJM7800 series of positive voltage regulators, and they are available in the same voltage options from −5 to −24V. The 7900 series employ internal current-limiting, safe-area protection, and thermal shutdown, making the virtually indestructible.

■ FEATURES

- Internal Short Circuit Current Limit
- Internal Thermal Overload Protection
- Excellent Ripple Rejection
- Guarantee'd 1.5A Output Current
- Package Outline TO-220F
- Bipolar Technology

■ PACKAGE OUTLINE

(TO-220F)

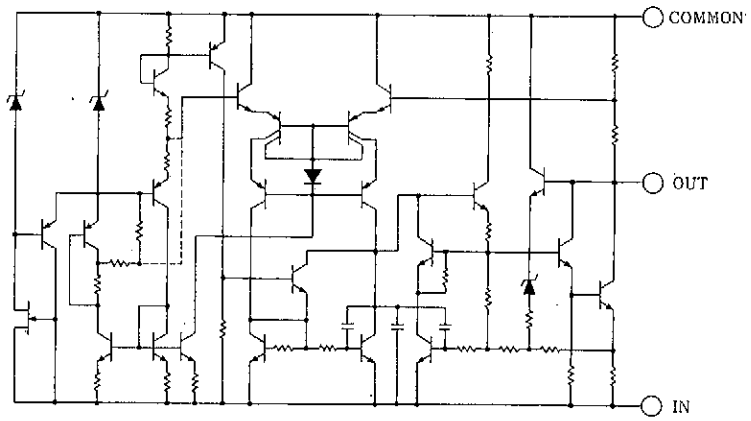


1. COMMON
2. IN
3. OUT

NJM7900FA

(note) The radiation fin is connected to Pin 2.

■ EQUIVALENT CIRCUIT



6

JRC

NJU7301

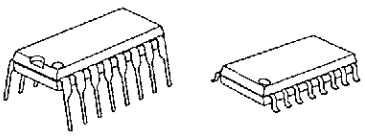
C-MOS QUAD SPST ANALOG SWITCH

■ GENERAL DESCRIPTION

The NJU7301 is a quad break-before-make SPST analog switch protected up to 44V operating voltage.

Each switch is controlled by TTL or C-MOS compatible input.

■ PACKAGE OUTLINE

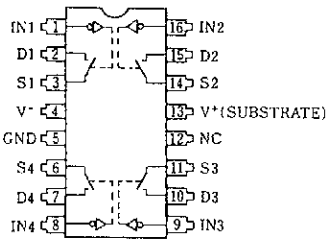


NJU7301D NJU7301M

■ FEATURES

- High Break Down Voltage -- 44V
- Package Outline -- DIP/DMP 16
- C-MOS Technology

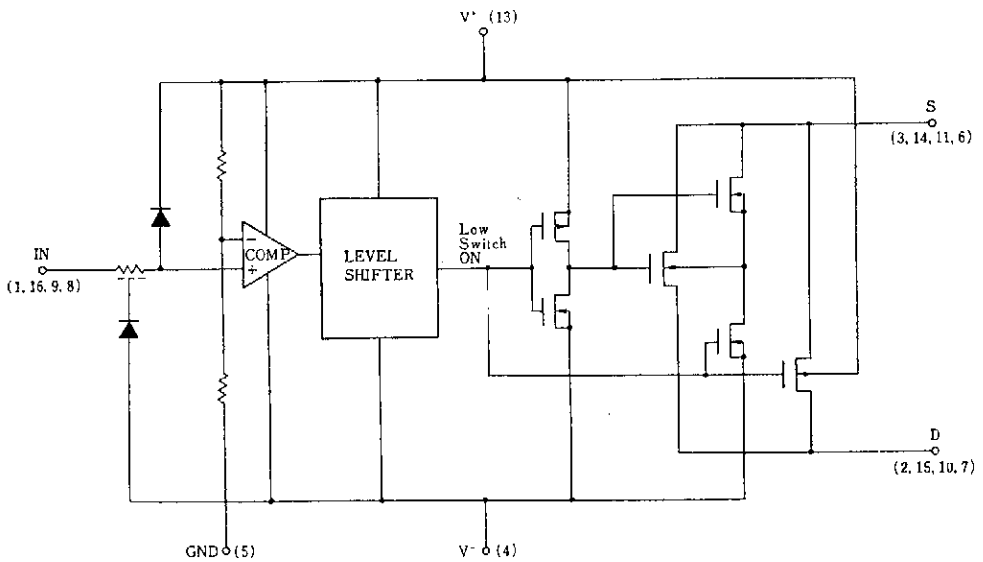
■ PIN CONFIGURATION



■ TRUTH TABLE

Logic (In)	Switch
0	ON
1	OFF

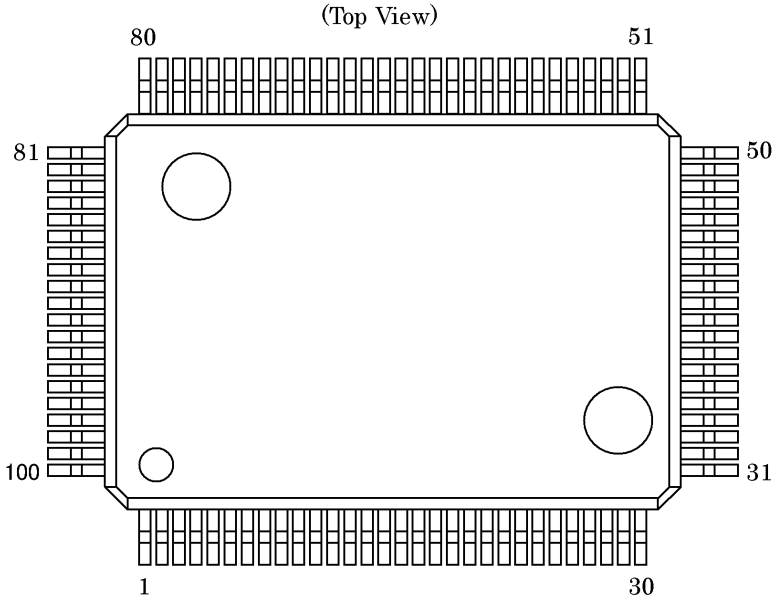
■ EQUIVALENT CIRCUIT



* Logic input threshold voltage V_{TH} is about V^+ x 0.128(V).
When the designing, enough margin is required.

■PIN CONFIGURAITON

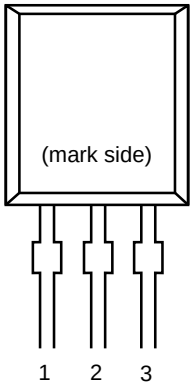
BEE-45919-000-00



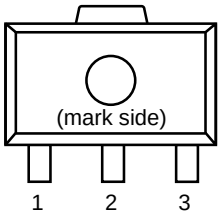
No.	SYMBOL	No.	SYMBOL	No.	SYMBOL	No.	SYMBOL
1	ROUT	26	DCCAP_RS	51	DCR_IN	76	GND
2	COUT	27	L3IN	52	DCR_OUT	77	LSCIN
3	LSOUT	28	DCCAP_LS	53	GND	78	RSCIN
4	RSOUT	29	R3IN	54	DCL_IN	79	LBCIN
5	LBOUT	30	DCCAP_C	55	DCL_OUT	80	RBCIN
6	RBOUT	31	L4IN	56	GND	81	GND
7	SWOUT	32	DCCAP_R	57	REC_B1R	82	LAIN
8	GND	33	R4IN	58	REC_B1L	83	RAIN
9	FIL_BL2	34	DCCAP_L	59	REC_A4R	84	CAIN
10	FIL_BL1	35	L5IN	60	REC_A4L	85	LSAIN
11	FIL_TL	36	GND	61	REC_A3R	86	RSAIN
12	TCAP	37	R5IN	62	REC_A3L	87	LBAIN
13	FIL_BR2	38	GND	63	REC_A2R	88	RBAIN
14	FIL_BR1	39	L6IN	64	REC_A2L	89	SWAIN
15	FIL_TR	40	L9IN	65	REC_A1R	90	GND
16	V^+	41	R6IN	66	REC_A1L	91	LBIN
17	ADR	42	R9IN	67	VDDOUT	92	RBIN
18	V^-	43	L7IN	68	DATA	93	CBIN
19	L1IN	44	L10IN	69	CLOCK	94	LSBIN
20	DCCAP_SW	45	R7IN	70	LATCH	95	RSBIN
21	R1IN	46	R10IN	71	MUTE	96	LBBIN
22	DCCAP_RB	47	L8IN	72	FL+	97	RBBIN
23	L2IN	48	L11IN	73	FL-	98	SWBIN
24	DCCAP_LB	49	R8IN	74	FR+	99	GND
25	R2IN	50	R11IN	75	FR-	100	LOUT

PIN CONFIGURATION

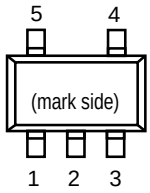
• TO-92



• SOT-89



• SOT-23-5



PIN DESCRIPTION

• TO-92

Pin No	Symbol
1	OUT
2	VDD
3	GND

• SOT-89

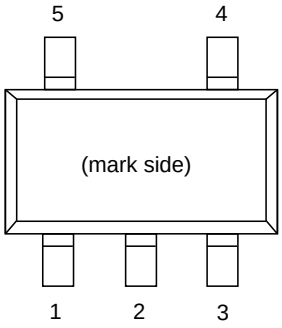
Pin No	Symbol
1	OUT
2	VDD
3	GND

• SOT-23-5

Pin No	Symbol
1	OUT
2	VDD
3	GND
4	NC
5	NC

PIN CONFIGURATION

• SOT-23-5



PIN DESCRIPTION

Pin No.	Symbol	Description
1	GND	Ground Pin
2	V_{DD}	Input Pin
3	V_{OUT}	Output Pin
4	NC	No Connection
5	CE or $\overline{CE}$	Chip Enable Pin

ABSOLUTE MAXIMUM RATINGS

Symbol	Item	Ratings	Unit
V_{IN}	Input Voltage	9	V
V_{CE}	Input Voltage (CE or $\overline{CE}$ Pin)	–0.3 to V_{IN} +0.3	V
V_{OUT}	Output Voltage	–0.3 to V_{IN} +0.3	V
I_{OUT}	Output Current	200	mA
P_D	Power Dissipation	250	mW
Topt	Operating Temperature	–40 to +85	˚C
Tstg	Storage Temperature	–55 to +125	˚C

ABSOLUTE MAXIMUM RATINGS

Absolute Maximum ratings are threshold limit values that must not be exceeded even for an instant under any conditions. Moreover, such values for any two items must not be reached simultaneously. Operation above these absolute maximum ratings may cause degradation or permanent damage to the device. These are stress ratings only and do not necessarily imply functional operation below these limits.

SiI 9030 Pin Diagram

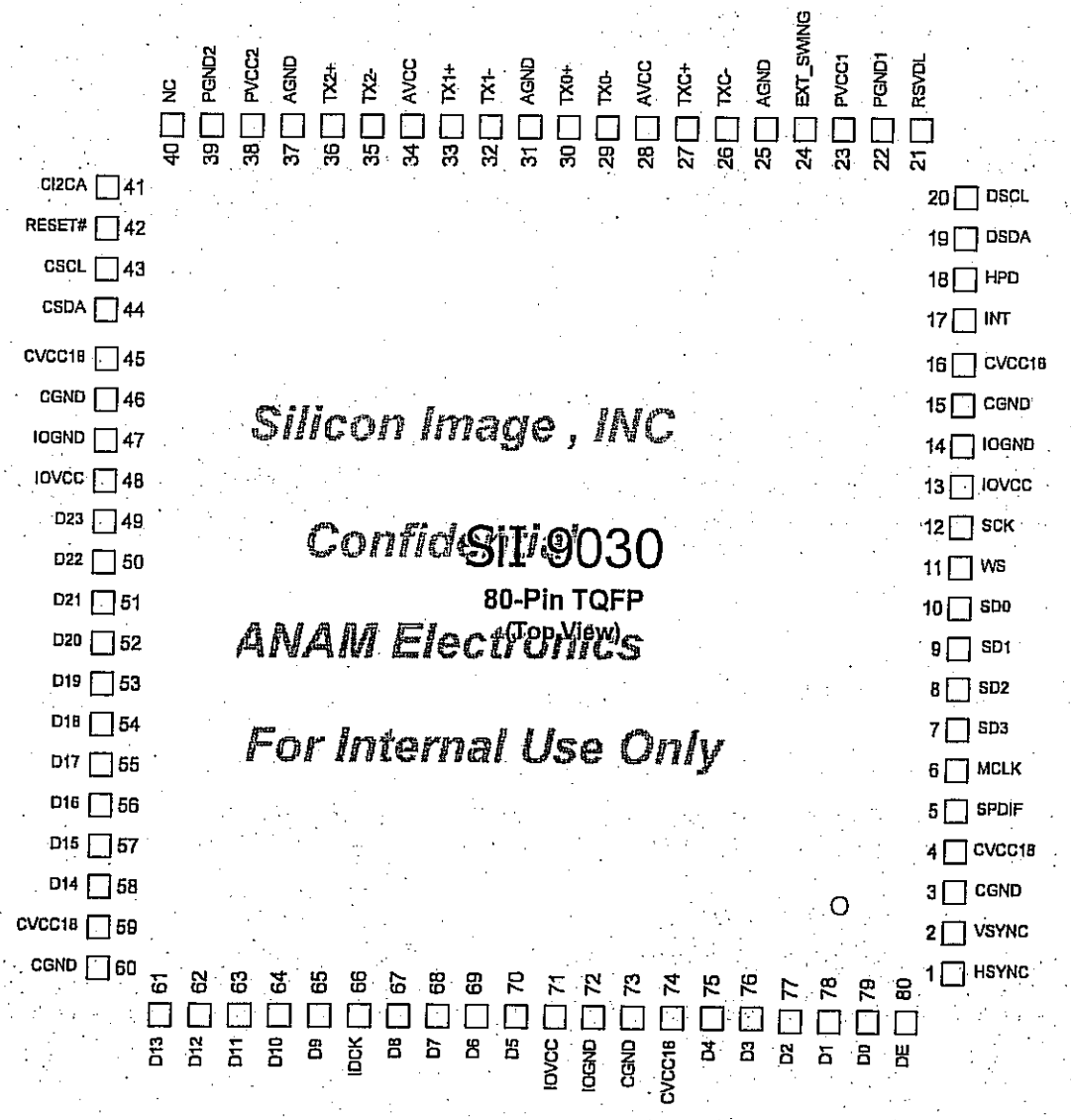


Figure 1. Pin Diagram

Pin Diagram

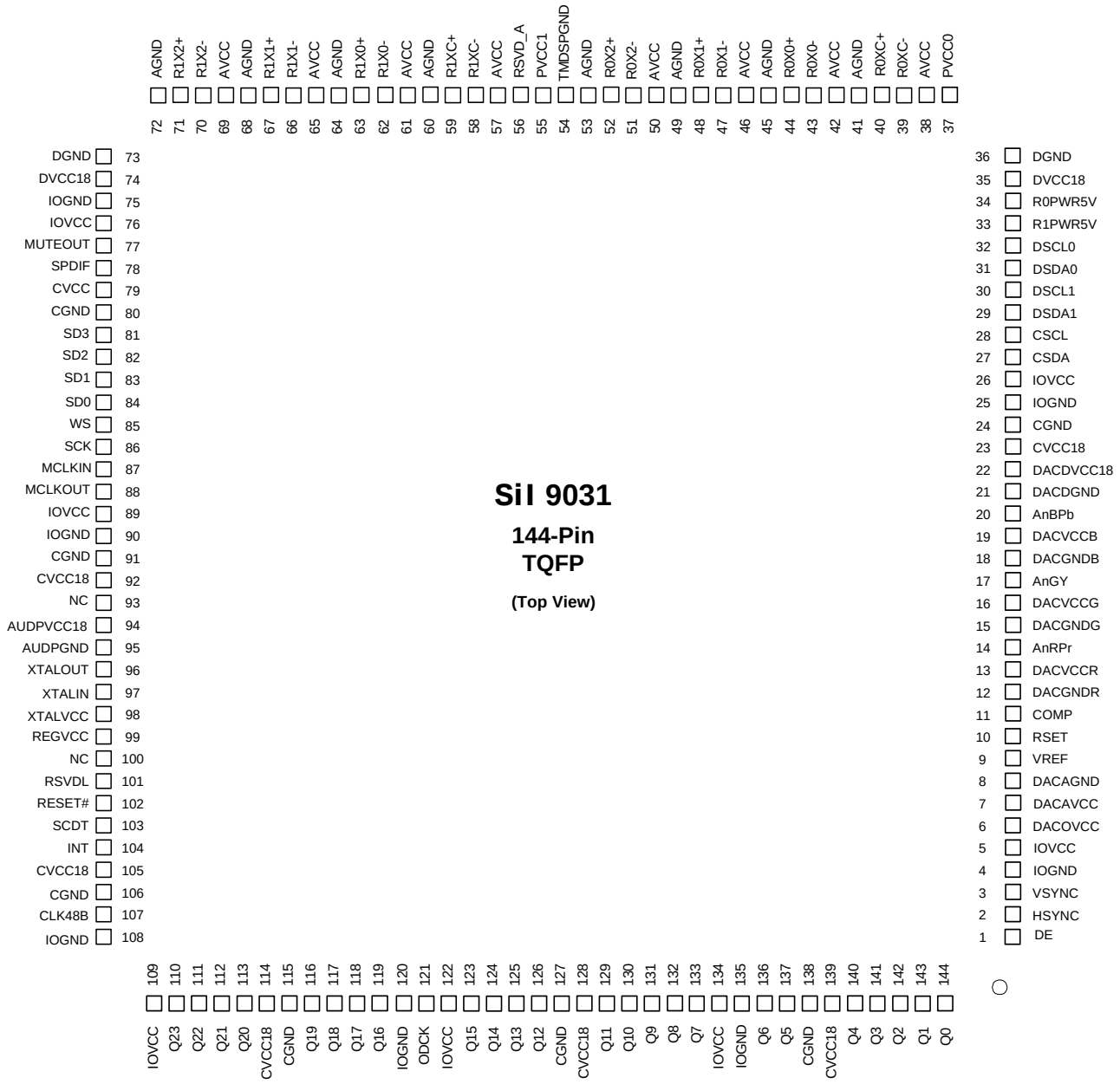
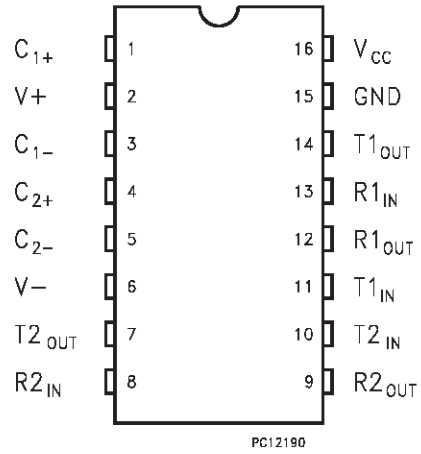


Figure 1. Pin Diagram

Individual pin functions are described beginning on page 37.

ST202E/ST232E

PIN CONFIGURATION



PIN DESCRIPTION

PIN No	SYMBOL	NAME AND FUNCTION
1	C_1+	Positive Terminal for the first Charge Pump Capacitor
2	V+	Doubled Voltage Terminal
3	C_1-	Negative Terminal for the first Charge Pump Capacitor
4	C_2+	Positive Terminal for the second Charge Pump Capacitor
5	C_2-	Negative Terminal for the second Charge Pump Capacitor
6	V-	Inverted Voltage Terminal
7	$T2_{OUT}$	Second Transmitter Output Voltage
8	$R2_{IN}$	Second Receiver Input Voltage
9	$R2_{OUT}$	Second Receiver Output Voltage
10	$T2_{IN}$	Second Transmitter Input Voltage
11	$T1_{IN}$	First Transmitter Input Voltage
12	$R1_{OUT}$	First Receiver Output Voltage
13	$R1_{IN}$	First Receiver Input Voltage
14	$T1_{OUT}$	First Transmitter Output Voltage
15	GND	Ground
16	V_{CC}	Supply Voltage

2. Pin Assignment and Pin Functions

The assignment of input/output pins for the T5CC1, their names and functions are as follows:

2.1 Pin Assignment Diagram

Figure 2.1.1 shows the pin assignment of the T5CC1.

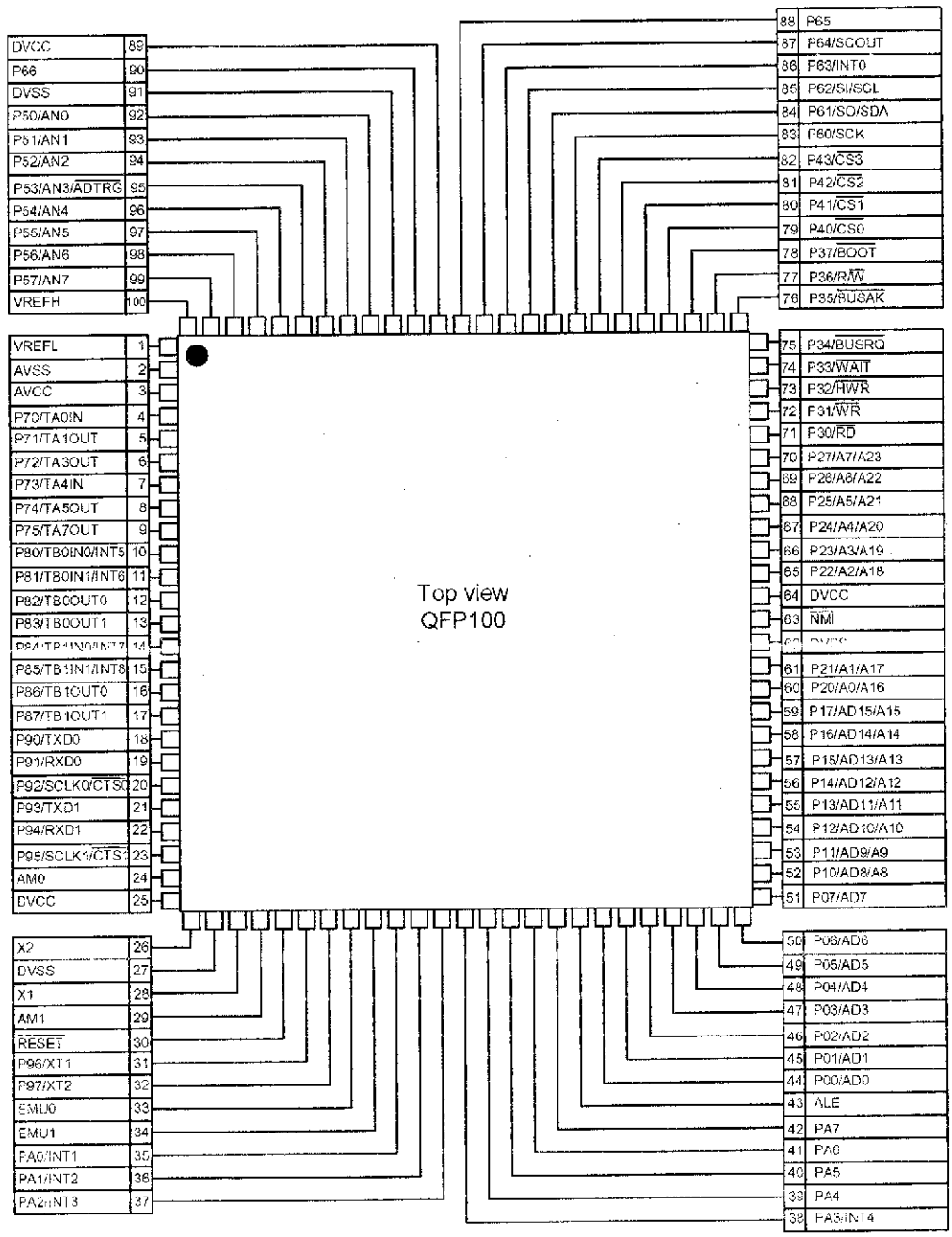


Figure 2.1.1 Pin assignment diagram (100-pin LQFP)

2.2 Pin Names and Functions

The names of the input/output pins and their functions are described below.
Table 2.2.1 Pin names and functions.

Table 2.2.1 Pin names and functions (1/3)

Pin Name	Number of Pins	I/O	Functions
P00~P07 AD0~AD7	8	I/O I/O	Port 0: I/O port that allows I/O to be selected at the bit level Address and data (lower): Bits 0 to 7 of address and data bus
P10~P17 AD8~AD15 A8~A15	8	I/O I/O Output	Port 1: I/O port that allows I/O to be selected at the bit level Address and data (upper): Bits 8 to 15 for address and data bus Address: Bits 8 to 15 of address bus
P20~P27 A0~A7 A16~A23	8	I/O Output Output	Port 2: I/O port that allows I/O to be selected at the bit level Address: Bits 0 to 7 of address bus Address: Bits 16 to 23 of address bus
P30 $\overline{RD}$	1	Output Output	Port 30: Output port Read: Strobe signal for reading external memory This port output RD signal also case of reading internal-area by setting P3 <P30> = 0 and P3FC <P30F> = 1.
P31 $\overline{WR}$	1	Output Output	Port 31: Output port Write: Strobe signal for writing data to pins AD0 to AD7
P32 $\overline{HWR}$	1	I/O Output	Port 32: I/O port (with pull-up resistor) High Write: Strobe signal for writing data to pins AD8 to AD15
P33 $\overline{WAIT}$	1	I/O Input	Port 33: I/O port (with pull-up resistor) Wait: Pin used to request CPU bus wait ((1+N) WAIT mode)
P34 BUSRQ	1	I/O Input	Port 34: I/O port (with pull-up resistor) Bus Request: Signal used to request Bus Release
P35 $\overline{BUSAK}$	1	I/O Output	Port 35: I/O port (with pull-up resistor) Bus Acknowledge: Signal used to acknowledge Bus Release
P36 R/$\overline{W}$	1	I/O Output	Port 36: I/O port (with pull-up resistor) Read/Write: 1 represents Read or Dummy cycle; 0 represents Write cycle.
P37 $\overline{BOOT}$	1	I/O Input	Port 36: I/O port (with pull-up resistor) This pin sets single boot mode. When released reset, Single boot mode is started at P37=Low level.
P40 $\overline{CS0}$	1	I/O Output	Port 40: I/O port (with pull-up resistor) Chip Select 0: Outputs 0 when address is within specified address area
P41 $\overline{CS1}$	1	I/O Output	Port 41: I/O port (with pull-up resistor) Chip Select 1: Outputs 0 if address is within specified address area
P42 $\overline{CS2}$	1	I/O Output	Port 42: I/O port (with pull-up resistor) Chip Select 2: Outputs 0 if address is within specified address area
P43 $\overline{CS3}$	1	I/O Output	Port 43: I/O port (with pull-up resistor) Chip Select 3: Outputs 0 if address is within specified address area
P50~P57 AN0~AN7 $\overline{ADTRG}$	8	Input Input Input	Port 5: Pin used to input port Analog input: Pin used to input to AD converter AD Trigger: Signal used to request start of AD converter (Shared with53 pin)

Table 2.2.1 Pin names and functions (2/3)

Pin Name	Number of Pins	I/O	Functions
P60 SCK	1	I/O I/O	Port 60: I/O port Serial bus interface clock in SIO Mode
P61 SO SDA	1	I/O Output I/O	Port 61: I/O port Serial bus interface send data at SIO mode Serial bus interface send/recive data at I^2C bus mode Open-drain output mode by programmable
P62 SI SCL	1	I/O Input I/O	Port 62: I/O port Serial bus interface recive data at SIO mode Serial bus interface clock I/O data at I^2C bus mode Open-drain output mode by programmable
P63 INT0	1	I/O Input	Port 63: I/O port Interrupt Request Pin 0: Interrupt request pin with programmable level / rising edge / falling edge
P64 SCOUT	1	I/O Output	Port 64: I/O port System Clock Output: Outputs f_{FPH} or fs clock.
P65	1	I/O	Port 65 I/O port
P66	1	I/O	Port 66 I/O port
P70 TA0IN	1	I/O Input	Port 70I/O port 8bitt timer 0 input:: Timer 0 input
P71 TA1OUT	1	I/O Output	Port 71I/O port 8-bit timer 1 output: Timer 0 or Timer 1 output
P72 TA3OUT	1	I/O Output	Port 72I/O port 8bit 8-bit timer 3 output: Timer 2 or Timer 3 output
P73 TA4IN	1	I/O Input	Port 73: I/O port 8-bit timer 4 input: Timer 4 input
P74 TA5OUT	1	I/O Output	Port 74: I/O port 8-bit timer 5 output: Timer 4 or Timer 5 output
P75 TA7OUT	1	I/O Output	Port 75: I/O port 88-bit timer 7 output: Timer 6 or Timer 7 output
P80 TB0IN0 INT5	1	I/O Input Input	Port 80: I/O port 16bit timer 0 input 0: 16bit Timer 0 count / capture trigger input Interrupt Request Pin 5: Interrupt request pin with programmable rising edge / falling edge.
P81 TB0IN1 INT6	1	I/O Input Input	Port 81: I/O port 16bit timer 0 input 1: 16bit Timer 0 count / capture trigger input Interrupt Request Pin 6: Interrupt request on rising edge
P82 TB0OUT0	1	I/O Output	Port 82: I/O port 16bit timer 0 output 0: 16bit Timer 0 output
P83 TB0OUT1	1	I/O Output	Port 83: I/O port 16bit timer 0 output 1: 16bit Timer 0 output
P84 TB1IN0 INT7	1	I/O Input Input	Port 84: I/O port 16bit timer 1 input 0: 16bit Timer 1 count / capture trigger input Interrupt Request Pin 7: Interrupt request pin with programmable rising edge / falling edge.
P85 TB1IN1 INT8	1	I/O Input Input	Port 85: I/O port 16bit timer 1 input 1: 16bit Timer 1 count / capture trigger input Interrupt Request Pin 8: Interrupt request on rising edge
P86 TB1OUT0	1	I/O Output	Port 86: I/O port 16bit timer 1 output 0: 16bit Timer 1 output 16bit
P87 TB1OUT1	1	I/O Output	Port 87: I/O port 16bit timer 1 output 1: 16bit Timer 1 output 16bit 16bit

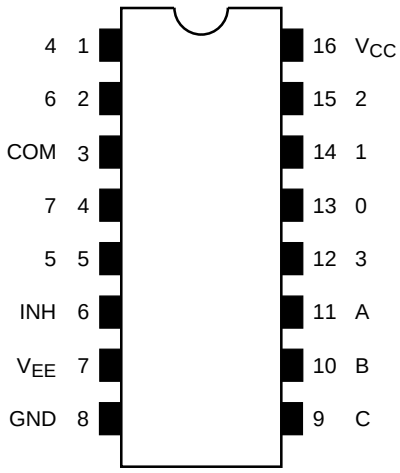
Table 2.2.1 Pin names and functions (3/3)

Pin Name	Number of Pins	I/O	Functions
P90 TXD0	1	I/O Output	Port 90: I/O port Serial Send Data 0 (programmable open-drain)
P91 RXD0	1	I/O Input	Port 91: I/O port Serial Receive Data 0
P92 SCLK0 $\overline{CTS0}$	1	I/O I/O Input	Port 92: I/O port Serial Clock I/O 0 Serial Data Send Enable 0 (Clear to Send)
P93 TXD1	1	I/O Output	Port 93: I/O port Serial Send Data 1 (programmable open-drain)
P94 RXD1	1	I/O Input	Port 94: I/O port (with pull-up resistor) Serial Receive Data 1
P95 SCLK1 $\overline{CTS1}$	1	I/O I/O Input	Port 95: I/O port (with pull-up resistor) Serial Clock I/O 1 Serial Data Send Enable 1 (Clear to Send)
P96 XT1	1	I/O Input	Port 96: I/O port (open-drain output) Low-frequency oscillator connection pin
P97 XT2	1	I/O Output	Port 97: I/O port (open-drain output) Low-frequency oscillator connection pin
PA0~PA3 INT1~INT4	4	I/O Input	Ports A0 to A3: I/O ports Interrupt Request Pins 1 to 4: Interrupt request pins with programmable rising edge / falling edge.
PA4~PA7	4	I/O	Ports A4 to A7: I/O ports
ALE	1	Output	Address Latch Enable Can be disabled to reduce noise.
$\overline{NMI}$	1	Input	Non-Maskable Interrupt Request Pin: Interrupt request pin with programmable falling edge or both edge.
AM0~1	2	Input	Operation mode: Fixed to AM1 = 1, AM0 = 1
EMU0	1	Output	Open pin
EMU1	1	Output	Open pin
$\overline{RESET}$	1	Input	Reset: initializes T5CC1. (With pull-up resistor)
VREFH	1	Input	Pin for reference voltage input to AD converter (H)
VREFL	1	Input	Pin for reference voltage input to AD converter (L)
AVCC	1		Power supply pin for AD converter
AVSS	1		GND pin for AD converter (0 V)
X1/X2	2	I/O	High-frequency oscillator connection pins
DVCC	3		Power supply pins (All DVCC pins should be connected with the power supply pin.)
DVSS	3		GND pins (0 V) (All DVSS pins should be connected with the power supply pin.)

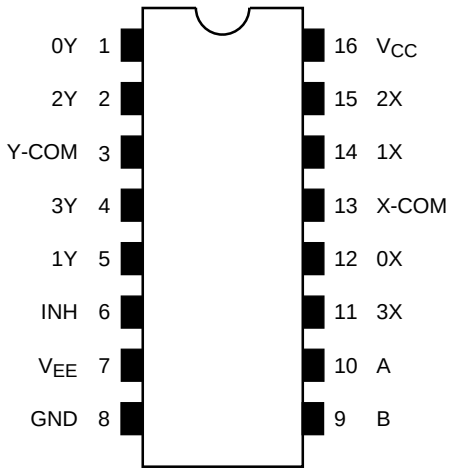
Note: An external DMA controller cannot access the device's built-in memory or built-in I/O devices using the $\overline{BUSRQ}$ and $\overline{BUSAK}$ signal.

Pin Assignment (top view)

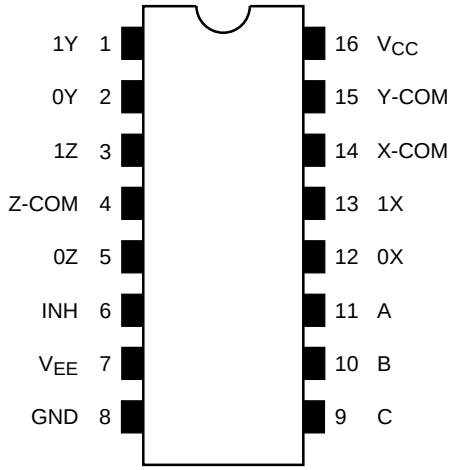
TC7MZ4051FK



TC7MZ4052FK



TC7MZ4053FK



Truth Table

Control Inputs				"ON" Channel		
Inhibit	C*	B	A	MZ4051FK	MZ4052FK	MZ4053FK
L	L	L	L	0	0X, 0Y	0X, 0Y, 0Z
L	L	L	H	1	1X, 1Y	1X, 0Y, 0Z
L	L	H	L	2	2X, 2Y	0X, 1Y, 0Z
L	L	H	H	3	3X, 3Y	1X, 1Y, 0Z
L	H	L	L	4	—	0X, 0Y, 1Z
L	H	L	H	5	—	1X, 0Y, 1Z
L	H	H	L	6	—	0X, 1Y, 1Z
L	H	H	H	7	—	1X, 1Y, 1Z
H	X	X	X	None	None	None

X: Don't care, *: Except MZ4052FK

TOSHIBA TC74HCU04AP/AF/AFN

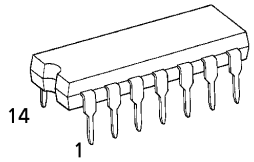
TOSHIBA CMOS DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TC74HCU04AP, TC74HCU04AF, TC74HCU04AFN

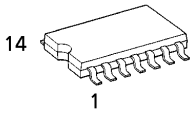
HEX INVERTER

(Note) The JEDEC SOP (FN) is not available in Japan.

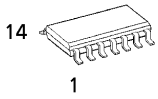
The TC74HCU04A is a high speed CMOS INVERTER fabricated with silicon gate C²MOS technology.
It achieves the high speed operation similar to equivalent LSTTL while maintaining the CMOS low power dissipation.
Since the internal circit is composed of a single stage inverter, it can be used in analog applications such as crystal oscllators.
All inputs are equipped with protection circuits against static discharge or transient excess voltage.



P (DIP14-P-300-2.54)
Weight : 0.96g (Typ.)



F (SOP14-P-300-1.27)
Weight : 0.18g (Typ.)

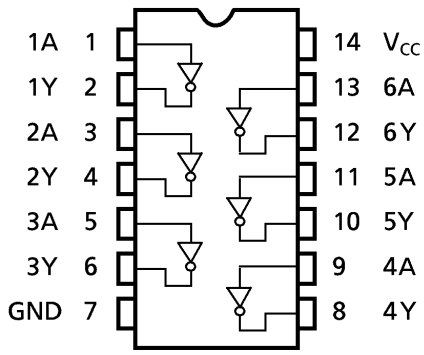


FN (SOL14-P-150-1.27)
Weight : 0.12g (Typ.)

FEATURES :

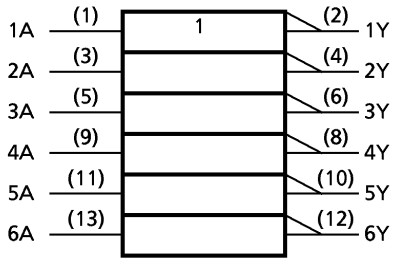
- High Speed ····· t_{pd} = 4ns(typ.) at V_{CC} = 5V
- Low Power Dissipation ····· I_{CC} = 1 μA(Max.) at Ta = 25°C
- High Noise Immunity ····· V_{NIH} = V_{NIH} = 10% V_{CC} (Min.)
- Output Drive Capability ····· 10 LSTTL Loads
- Symmetrical Output Impedance ··· | I_{OH} | = I_{OL} = 4mA(Min.)
- Balanced Propagation Delays ····· $t_{pLH} \simeq t_{pHL}$
- Wide Operating Voltage Range ·· V_{CC}(opr.) = 2V ~ 6V
- Pin and Function Compatible with 74LS04

PIN ASSIGNMENT



(TOP VIEW)

IEC LOGIC SYMBOL



TRUTH TABLE

A	Y
L	H
H	L

961001EBA2

TOSHIBA CMOS DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TC74VHC157F, TC74VHC157FN, TC74VHC157FT

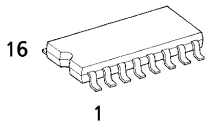
QUAD 2 - CHANNEL MULTIPLEXER

(Note) The JEDEC SOP (FN) is not available in Japan.

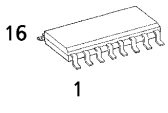
The TC74VHC157 is an advanced high speed CMOS QUAD 2 - CHANNEL MULTIPLEXER fabricated with silicon gate C²MOS technology.
It achieves the high speed operation similar to equivalent Bipolar Schottky TTL while maintaining the CMOS low power dissipation.
It consists of four 2 - input digital multiplexers with common select and strobe inputs.
When the $\overline{\text{STROBE}}$ input is held "H" level, selection of data is inhibited and all the outputs become "L" level.
The SELECT decoding determines whether the A or B inputs get routed to their corresponding Y outputs.
An Input protection circuit ensures that 0 to 5.5V can be applied to the input pins without regard to the supply voltage. This device can be used to interface 5V to 3V systems and on two supply systems such as battery back up. This circuit prevents device destruction due to mismatched supply and input voltages.

FEATURES :

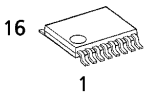
- High Speed ····· t_{pd} = 4.1ns(typ.) at V_{CC} = 5V
- Low Power Dissipation ····· I_{CC} = 4μA(Max.) at Ta = 25°C
- High Noise Immunity ····· $V_{NIH} = V_{NIL}$ = 28% V_{CC} (Min.)
- Power Down Protection is provided on all inputs.
- Balanced Propagation Delays ····· $t_{pLH} \simeq t_{pHL}$
- Wide Operating Voltage Range ···· V_{CC} (opr) = 2V ~ 5.5V
- Low Noise ····· V_{OLP} = 0.8V (Max.)
- Pin and Function Compatible with 74ALS157



F (SOP16-P-300-1.27)
Weight : 0.18g (Typ.)

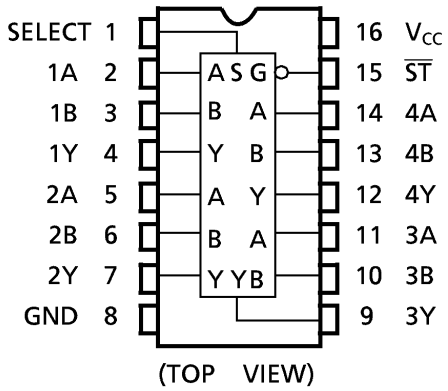


FN (SOL16-P-150-1.27)
Weight : 0.13g (Typ.)



FT (TSSOP16-P-0044-0.65)
Weight : 0.06g (Typ.)

PIN ASSIGNMENT



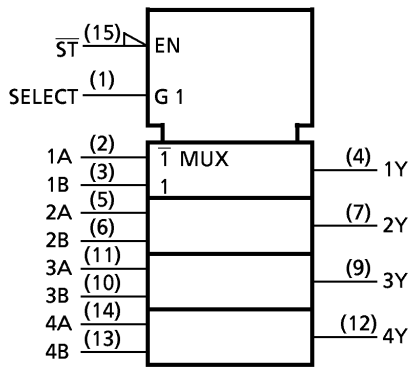
(TOP VIEW)

TRUTH TABLE

INPUTS				OUTPUT
$\overline{ST}$	SELECT	A	B	
H	X	X	X	L
L	L	L	X	L
L	L	H	X	H
L	H	X	L	L
L	H	X	H	H

X : Don't Care

IEC LOGIC SYMBOL



980910EBA2

DATA SHEET

NEC

MOS FIELD EFFECT TRANSISTOR

μPA672T

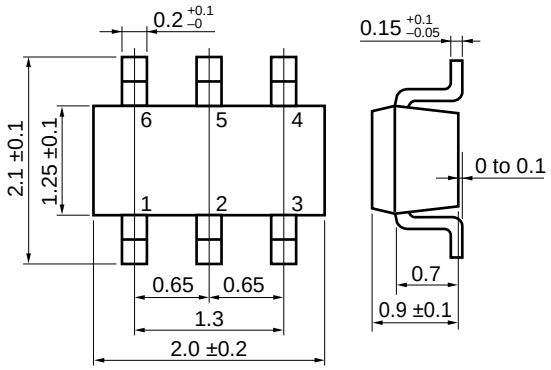
N-CHANNEL MOS FET ARRAY FOR SWITCHING

The μPA672T is a super-mini-mold device provided with two MOS FET elements. It achieves high-density mounting and saves mounting costs.

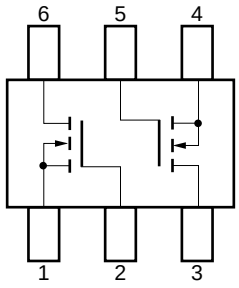
FEATURES

- Two MOS FET circuits in package the same size as SC-70
- Automatic mounting supported

PACKAGE DIMENSIONS (in millimeters)



PIN CONNECTION



1. Source 1 (S1)
2. Gate 1 (G1)
3. Drain 2 (D2)
4. Source 2 (S2)
5. Gate 2 (G2)
6. Drain 1 (D1)

Marking: MA

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C)

PARAMETER	SYMBOL	TEST CONDITIONS	RATINGS	UNIT
Drain to Source Voltage	V_{DSS}		50	V
Gate to Source Voltage	V_{GSS}		±7.0	V
Drain Current (DC)	$I_{D(DC)}$		100	mA
Drain Current (pulse)	$I_{D(pulse)}$	PW ≤ 10 ms, Duty Cycle ≤ 50 %	200	mA
Total Power Dissipation	P_T		200 (Total)	mW
Channel Temperature	T_{ch}		150	°C
Storage Temperature	T_{stg}		–55 to +150	°C

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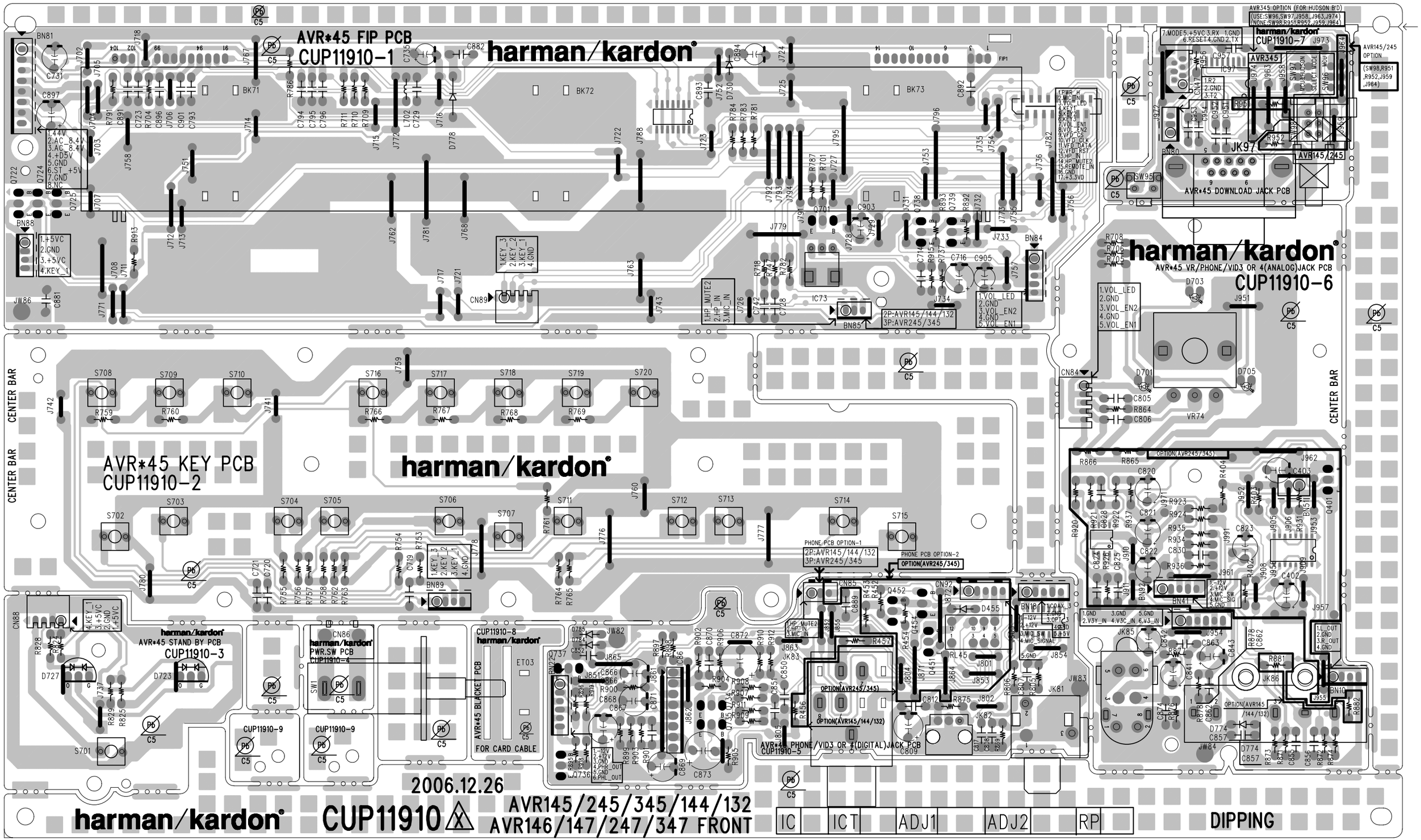
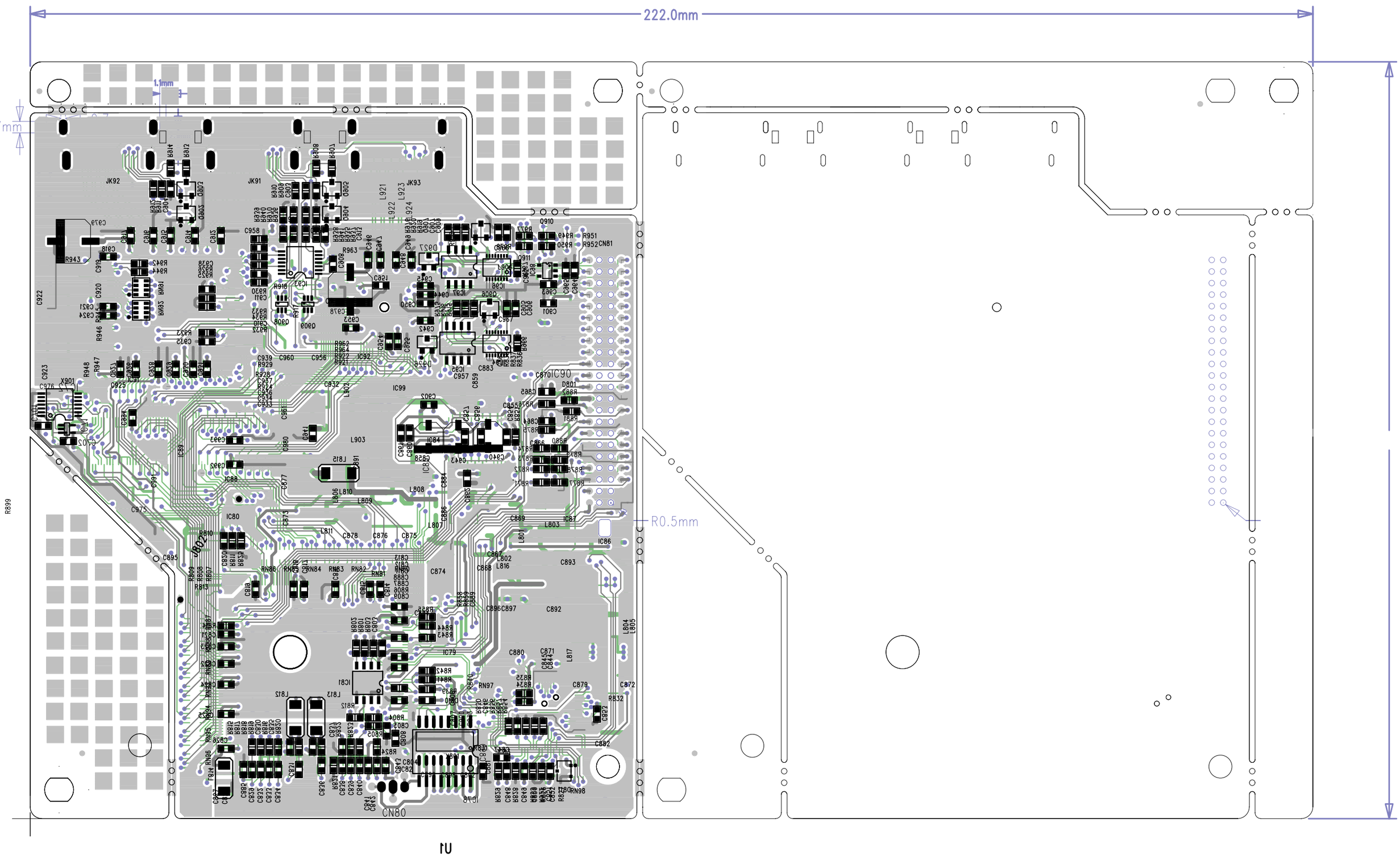
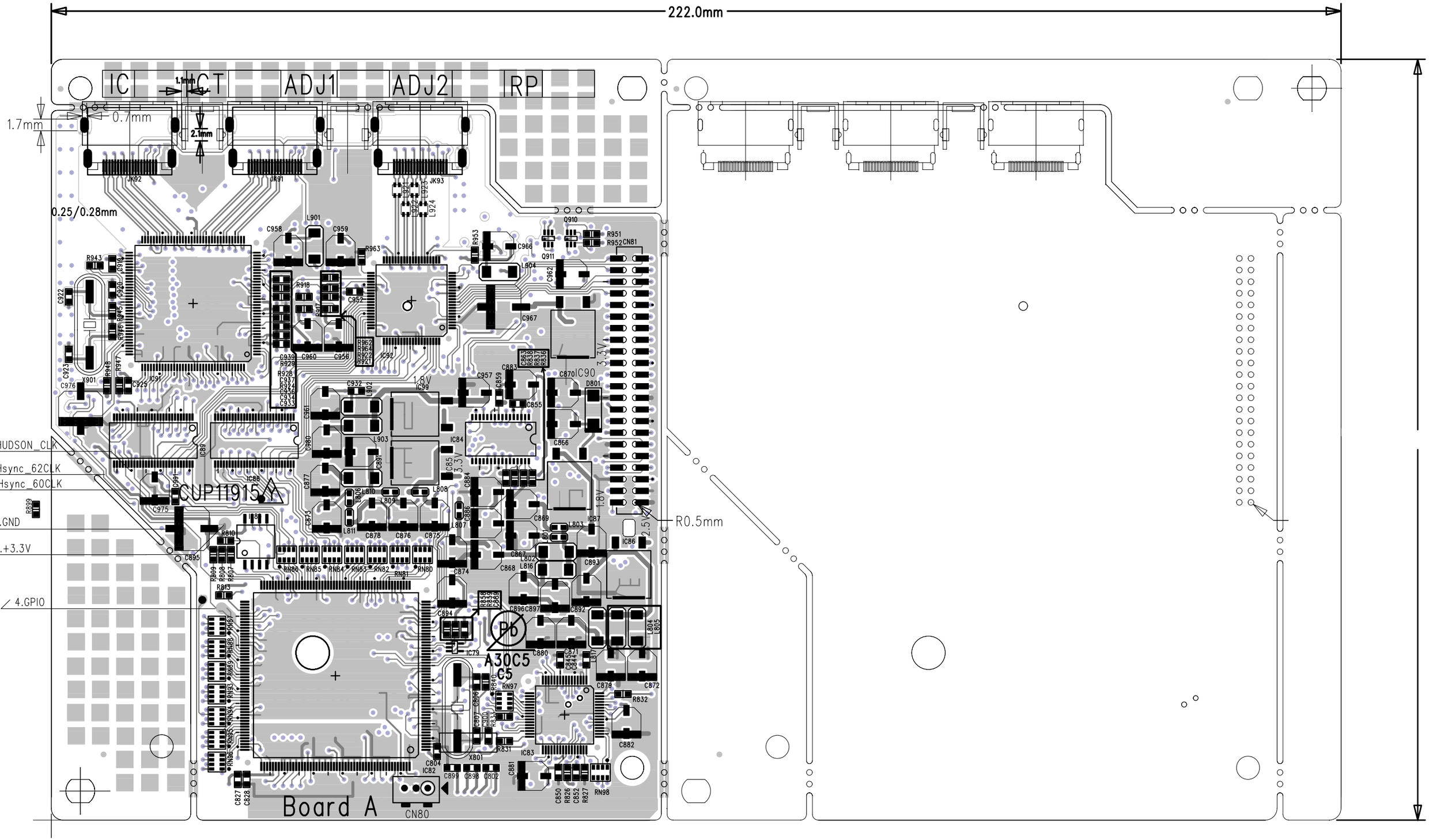
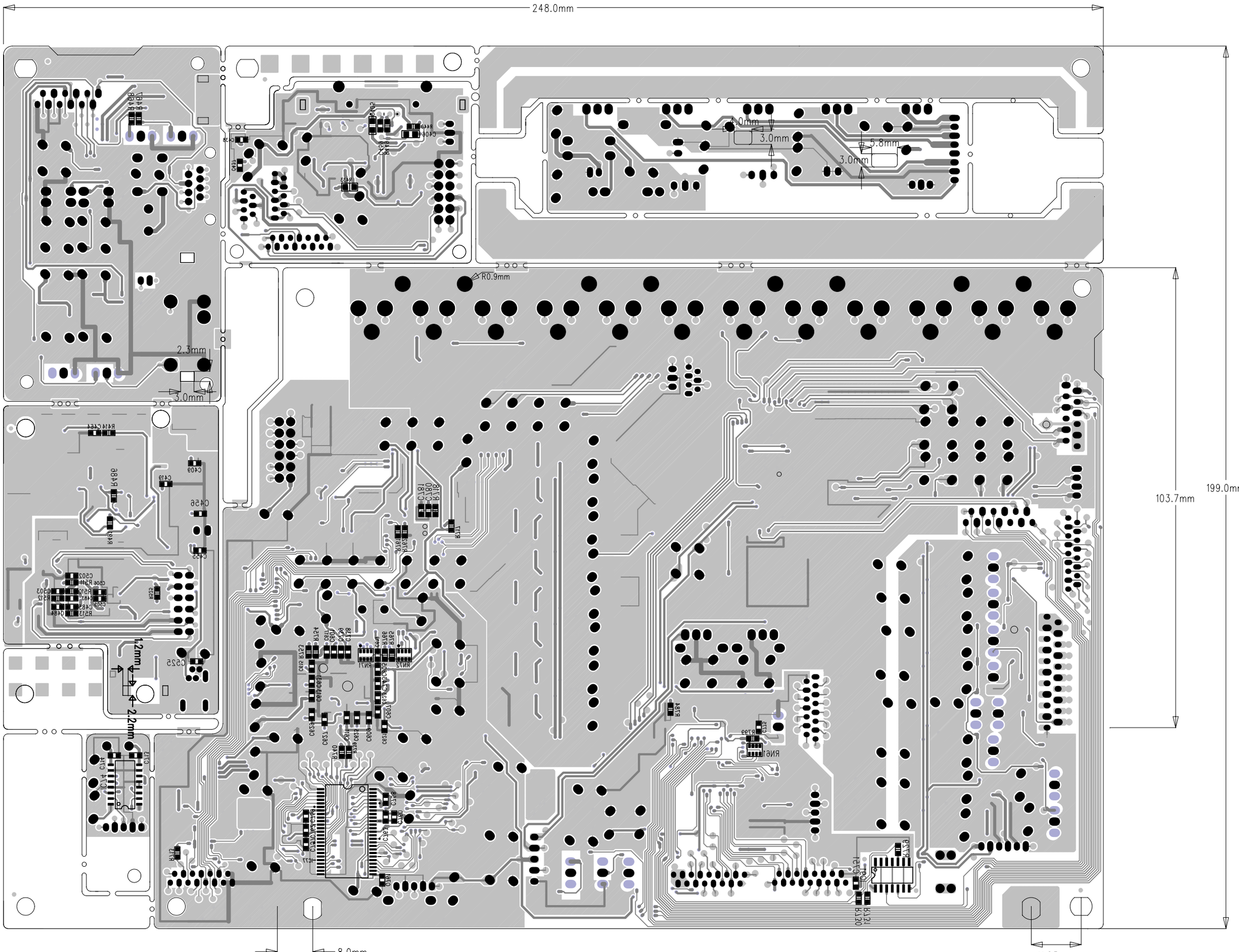
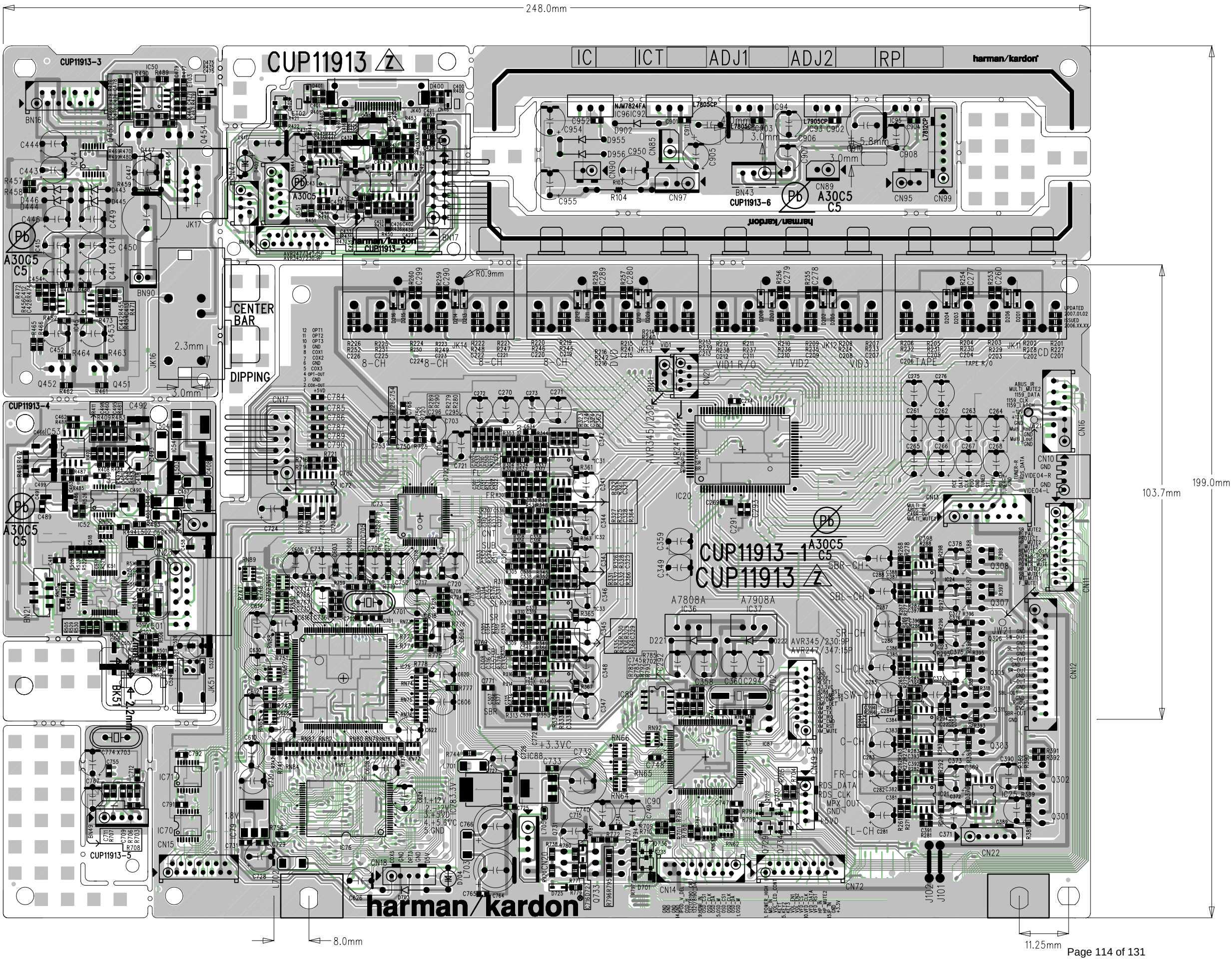
Printed in Japan

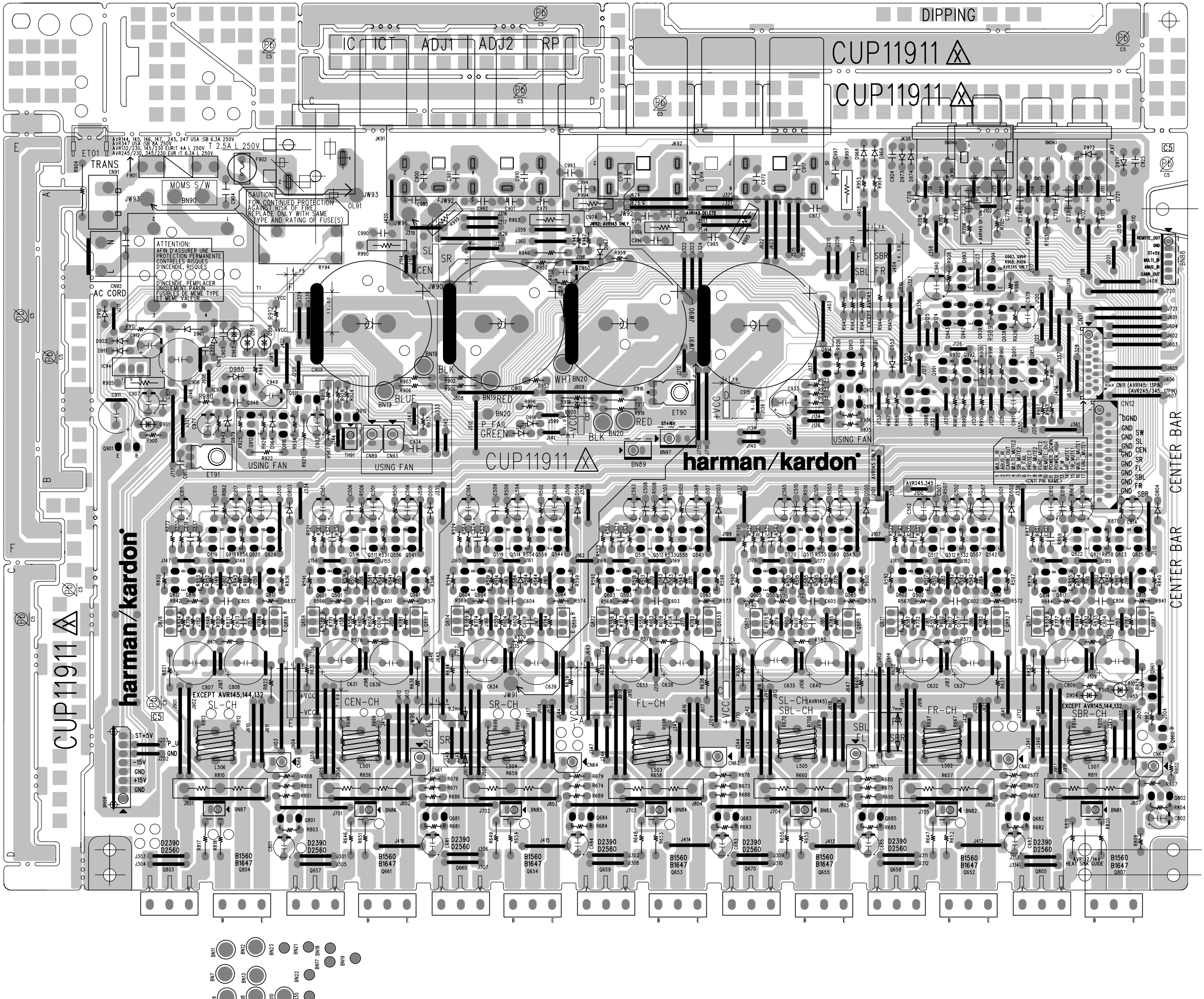

AVR*45 FIP PCB
CUP11910-1
harman/kardon
AVR345 OPTION (FOR HUDSON B'D)
(USE:SW96,SW97,J956,J963,J974)
(NONE:SW98,R951,R952,J959,J964)
CUP11910-7
AVR345
AVR145/245 OPTION
(SW98,R951,R952,J959,J964)
AVR145/245
AVR*45 DOWNLOAD JACK PCB
JK97
AVR*45 VR/PHONE/VID3 OR 4(ANALOG)JACK PCB
CUP11910-6
CENTER BAR
AVR*45 KEY PCB
CUP11910-2
AVR*45 STAND BY PCB
CUP11910-3
PWR.SW PCB
CUP11910-4
AVR*45 BLACKET PCB
FOR CARD CABLE
CUP11910-8
CUP11910-9
AVR*45 PHONE/VID3 OR 4(DIGITAL)JACK PCB
CUP11910-5
PHONE PCB OPTION-1
2P:AVR145/144/132
3P:AVR245/345
PHONE PCB OPTION-2
OPTION(AVR245/345)
OPTION(AVR145/144/132)
2006.12.26
CUP11910
AVR145/245/345/144/132
AVR146/147/247/347 FRONT
DIPPING
IC
ICT
ADJ1
ADJ2
RP


222.0mm
1.1mm
1.7mm
R0.5mm
R899
U1


222.0mm
IC
CT
ADJ1
ADJ2
RP
1.7mm
0.7mm
1.1mm
2.1mm
0.25/0.28mm
R0.5mm
2.HUDSON_CLK
1.Hsync_62CLK
3.Hsync_60CLK
5.GND
6.+3.3V
4.GPIO
CUP11915A
A30C5
C5
P6
Board A
CN80
3.3V
1.8V
2.5V

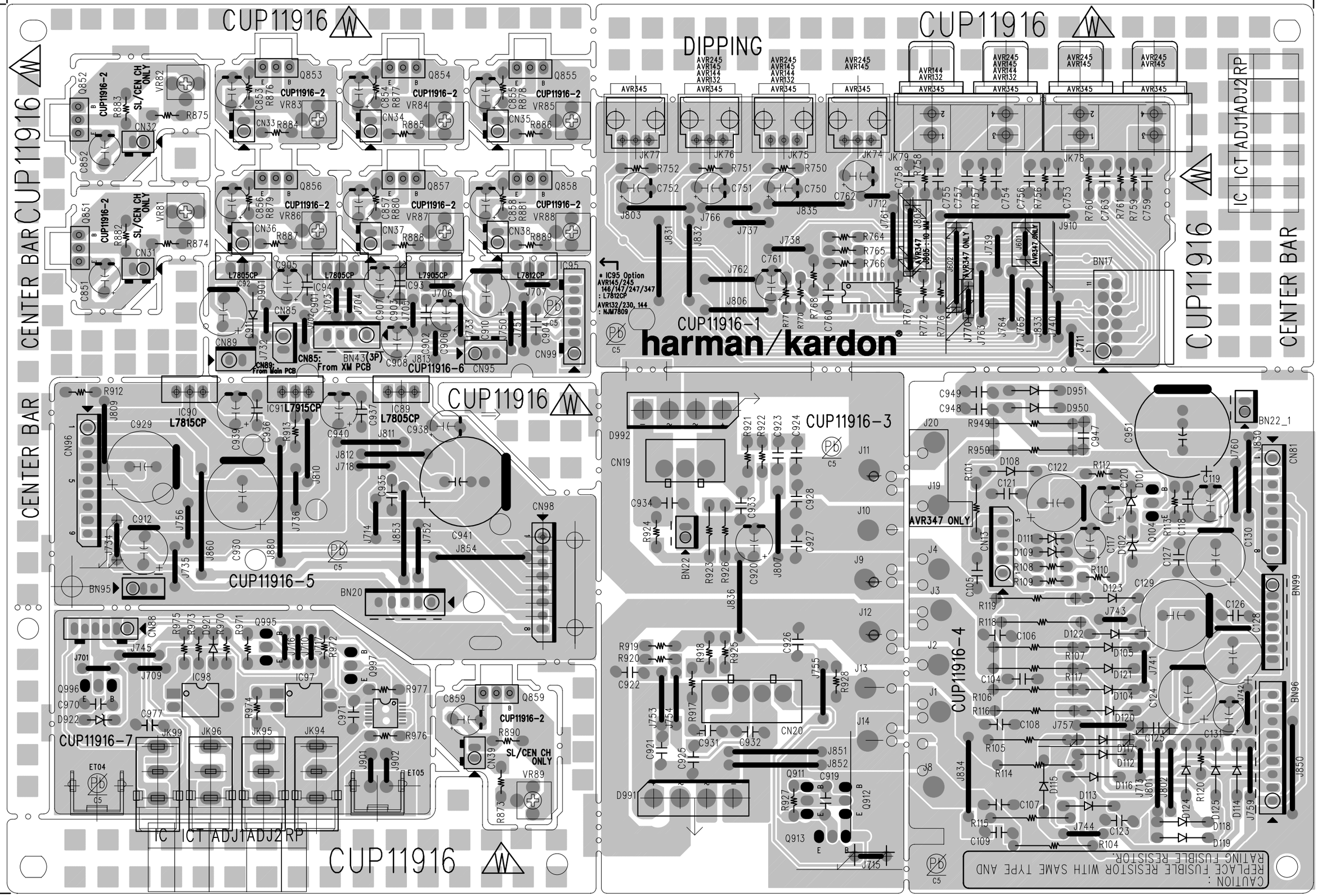

248.0mm
199.0mm
103.7mm
R0.9mm
4.0mm
3.0mm
5.8mm
3.0mm
2.3mm
3.0mm
1.2mm
2.2mm
8.0mm
11.25mm

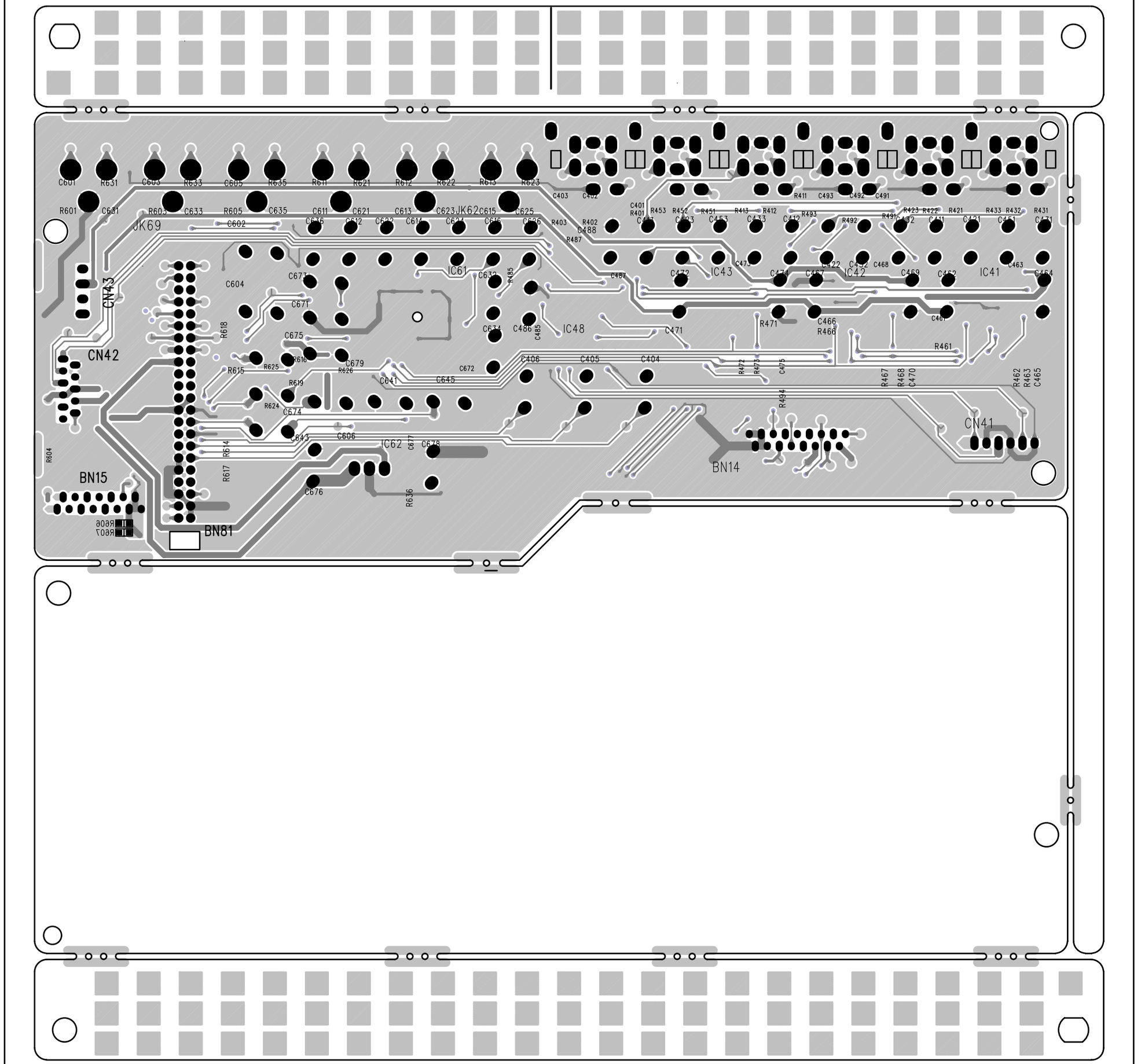

248.0mm
199.0mm
103.7mm
CUP11913
CUP11913-1
CUP11913-2
CUP11913-3
CUP11913-4
CUP11913-5
CUP11913-6
harman/kardon
CENTER BAR
DIPPING
IC ICT ADJ1 ADJ2 RP
A30C5 C5
8-CH
VID1 R/O
VID2
VID3
TAPE
TAPE R/O
DVD
CD
SBR-CH
SBL-CH
SR-CH
SL-CH
SW-CH
C-CH
FR-CH
FL-CH
8.0mm
11.25mm

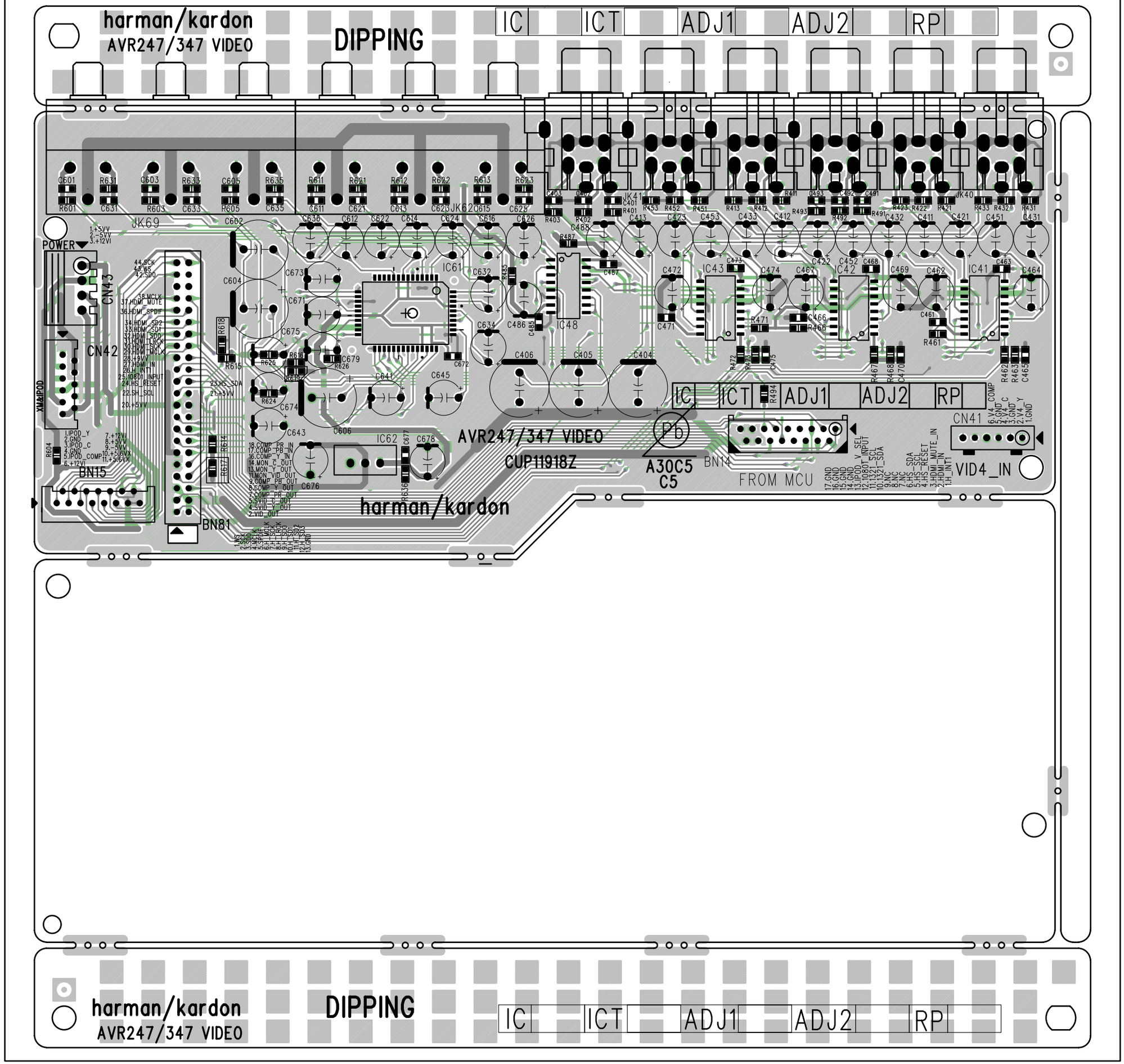

DIPPING
CUP11911
CUP11911
CUP11911
CUP11911
IC
ICT
ADJ1
ADJ2
RP
AVR144, 145, 146, 147, 245, 247 USA :SB 6.3A 250V
AVR347 USA :SB 6A 250V
AVR152/230, 145/230 EUR:T 4A L 250V T 2.5A L 250V
AVR245/230, 345/230 EUR :T 6.3A L 250V
ET01
TRANS
F902
F901
MOMS S/W
BN90
CAUTION:
FOR CONTINUED PROTECTION
AGAINST RISK OF FIRE,
REPLACE ONLY WITH SAME
TYPE AND RATING OF FUSE(S)
ATTENTION:
AFIN D'ASSURER UNE
PROTECTION PERMANENTE
CONTRELES RISQUES
D'INCENDIE, RISQUES
D'INCENDIE, REMPLACER
UNIQUEMENT PARIL
FUSIBLES DE MEME TYPE
ET MEME VALEUR
CN91
CN92
AC CORD
OL91
JW93
JW96
JW92
JW90
JW91
JW98
JK91
JK92
JK98
SL
SR
CEN
SBL
SBR
FL
FR
RY94
BN19
BN20
BN89
BN97
BN98
ET90
ET91
TH91
CN89
CN93
USING FAN
P FAIL
GREEN
BLK
BLUE
RED
WHT
+VCC
-VCC
ST+16V
ST+5V
-15V
GND
+15V
P_U
AVR145 DELETE
JW92: AVR145 ONLY
AVR145 OPTION
EXCEPT AVR145
AVR145 ONLY
EXCEPT AVR145,144,132
SL-CH
CEN-CH
SR-CH
FL-CH
SBL-CH(AVR145)
FR-CH
SBR-CH
SBL-CH
SBL
FL
SBR
FR
CN11
CN12
=> CN11 (AVR145: 13PIN)
(AVR245/345: 17PIN)
REMOTE_OUT
GND
ST+5V
MULTI_IR
ABUS_IR
CARR_OUT
CN11 PIN NAME
DGND
SW
SL
CEN
SR
FL
SBL
FR
SBR
CENTER BAR
AVR245,345
AVR122/144
HEAT SINK GUIDE
harman/kardon
B1560
B1647
D2390
D2560

247.0mm

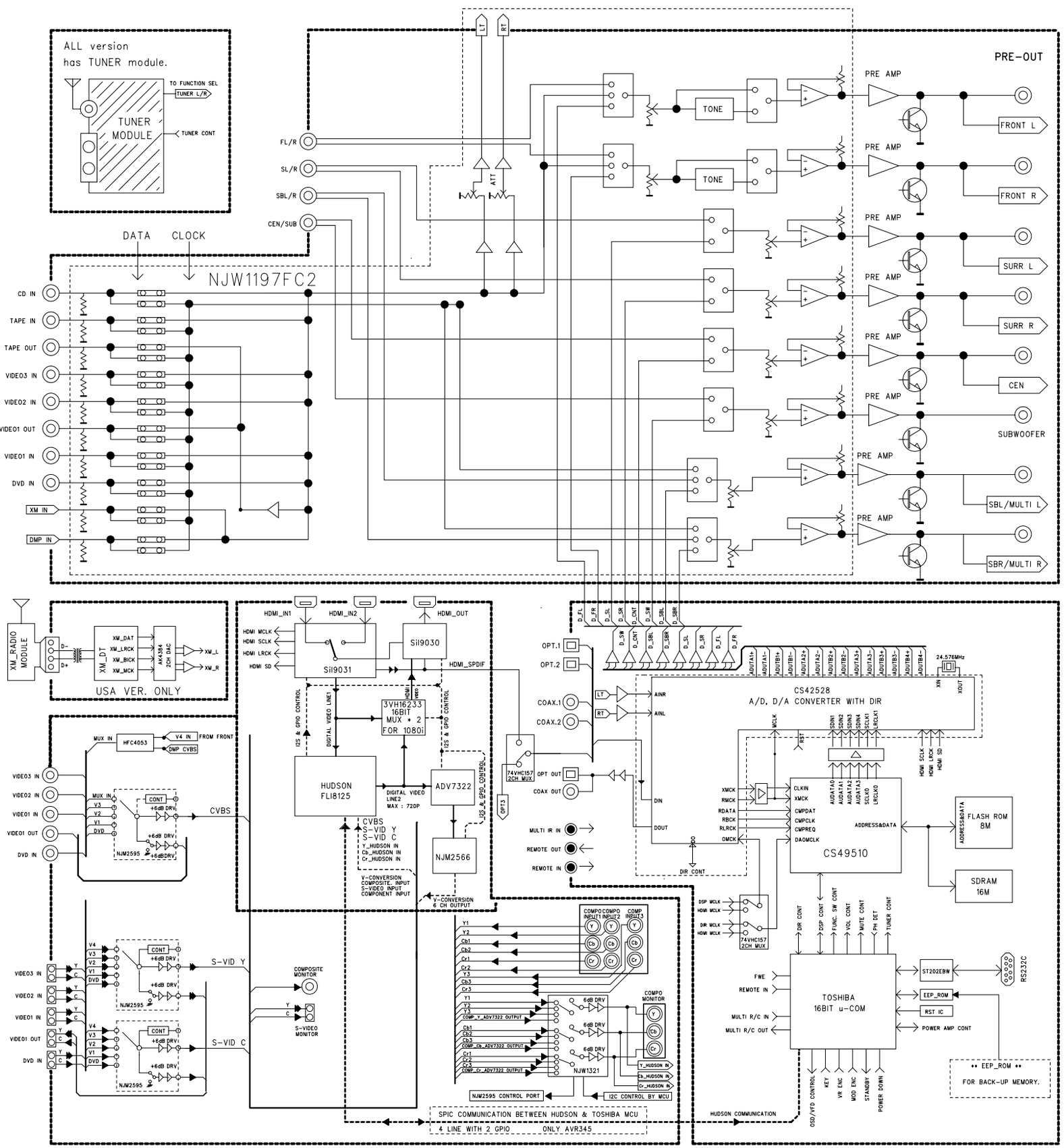
168.0mm

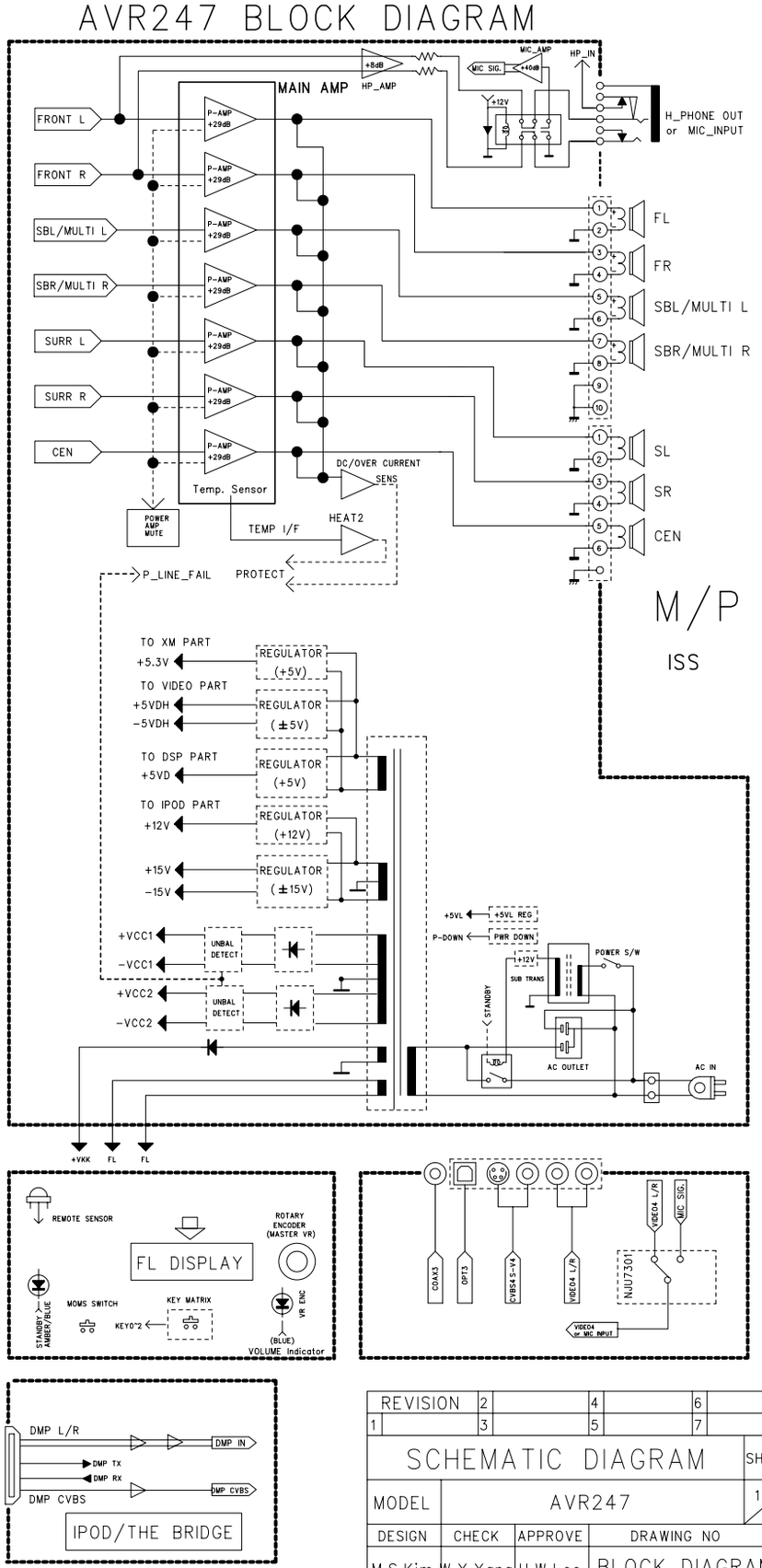



C601
R631
R601
C631
C603
R633
C633
C605
R635
C635
C611
R611
C621
R621
C613
R612
C623
JK62
R622
C615
R613
C625
R623
JK69
C602
C403
C402
R403
R402
C488
R487
C401
R401
R453
R452
R451
R413
R412
R411
C493
C492
C491
R493
R492
R491
R423
R422
R421
R433
R432
R431
C487
C472
IC43
C474
C467
C422
C452
C468
IC42
C469
C462
IC41
C463
C464
C604
C673
C671
IC61
C632
R485
C634
C486
C485
IC48
C471
R471
C466
R466
C461
R461
CN43
CN42
R618
C675
R616
R625
R615
C679
R626
C672
C406
C405
C404
R472
R473
C475
R467
R468
C470
R462
R463
C465
R619
C641
C645
R624
C674
R494
CN41
BN14
R604
R614
C643
C606
IC62
C677
C678
R617
C676
R636
BN15
R606
R607
BN81


harman/kardon
AVR247/347 VIDEO
DIPPING
IC
ICT
ADJ1
ADJ2
RP
POWER
CN43
CN42
XM&IPOD
BN15
BN81
JK69
IC61
IC62
IC48
IC43
IC42
IC41
AVR247/347 VIDEO
CUP11918Z
A30C5
C5
BN14
FROM MCU
CN41
VID4_IN
harman/kardon
AVR247/347 VIDEO
DIPPING
IC
ICT
ADJ1
ADJ2
RP

AVR247 BLOCK DIAGRAM

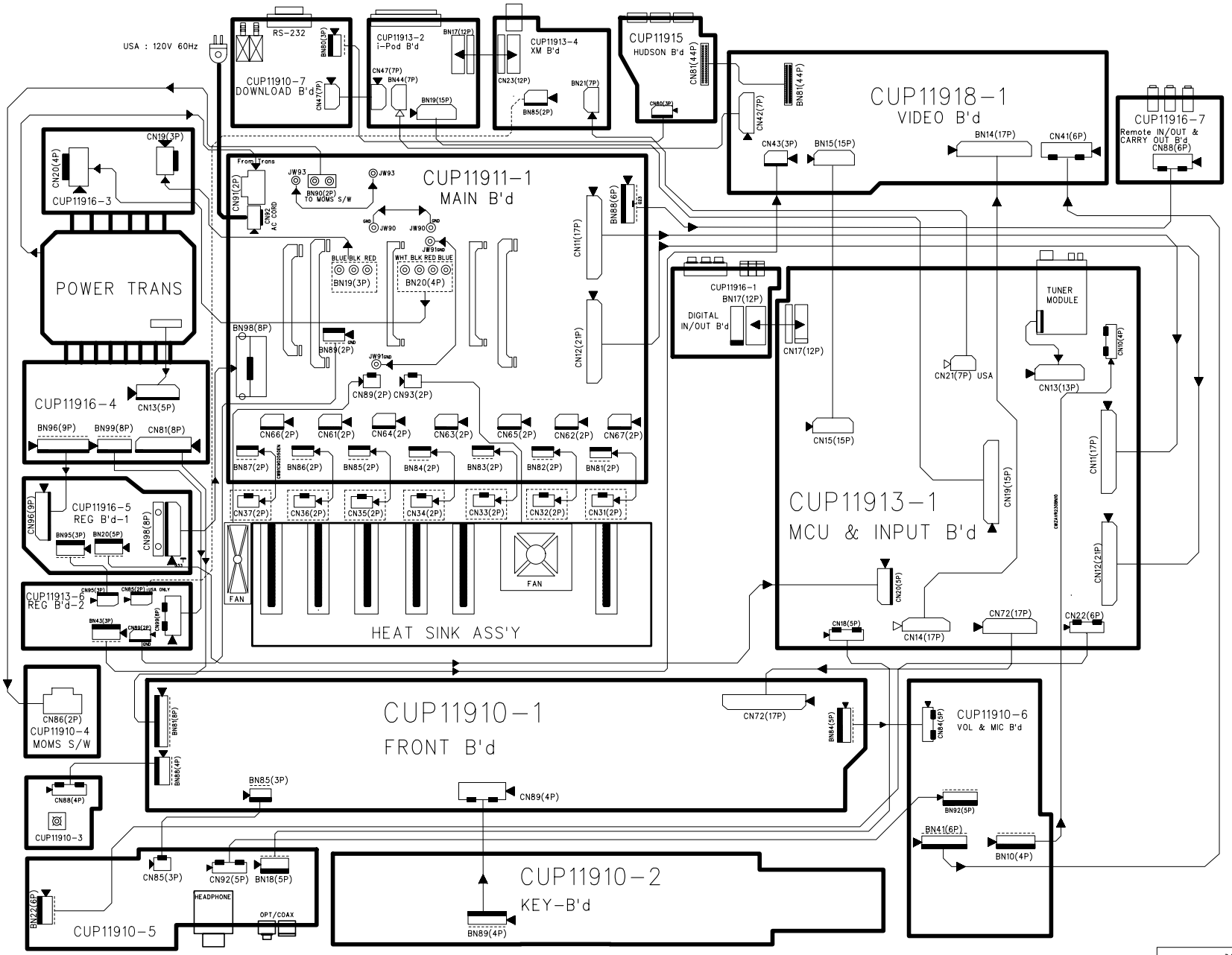




REVISION	2		4		6	
1		3		5		7

SCHEMATIC DIAGRAM			SHEET
MODEL	AVR247		1/1
DESIGN	CHECK	APPROVE	DRAWING NO
M.S.Kim	W.Y.Yang	H.W.Lee	BLOCK DIAGRAM
07.03.14	07.03.14	07.03.14	1190BCDZ 1/1

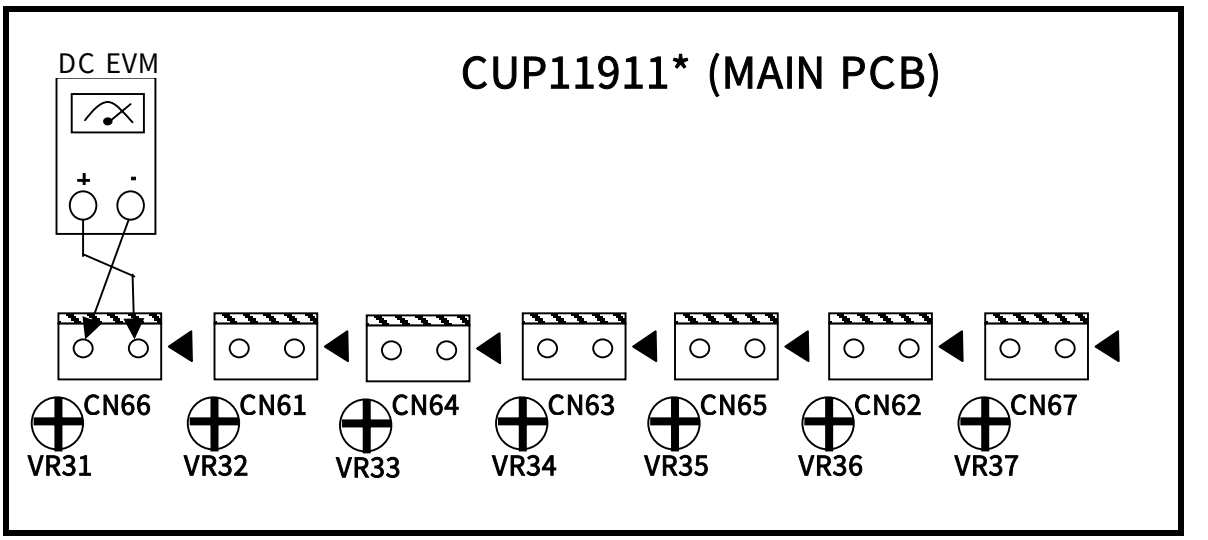
AVR247 WIRING DIAGRAM



AMPLIFIER SECTION BIAS ADJUSTMENT

Measurement condition
.No input signal or volume position is minimum.

Standard value
.Ideal current = 48mA (± 5%)
.Ideal DC Voltage = 25.92mV (± 5%)



DC VOLTMETER ; Connect to
CN66(SL),CN61(CEN),CN64(SR),CN63(FL),CN65(SBL),CN62(FR),CN67(SBR)

NO.	Channel	Adjust for	Adjustment
1	Front Left	25.92mV (± 5%)	CN63
2	Front Right	25.92mV (± 5%)	CN62
3	Center	25.92mV (± 5%)	CN61
4	Surround Left	25.92mV (± 5%)	CN66
5	Surround Right	25.92mV (± 5%)	CN64
6	Surround Back Left	25.92mV (± 5%)	CN65
7	Surround Back Right	25.92mV (± 5%)	CN67

CUP11910X

AVR145/245/345/147/247/347 PART

CUP11910-7 [DOWNLOAD JACK PCB]

ST202EBW IC97

FROM XM&IPOD ASSY CN47

SW95 SW96 SW97 SW98

AVR145/245/147 OPTION

DIRECT(NONE CROSS) JK97

BN80 TO HUDSON ASS'Y AVR247/345/347

* OPTION *

JW86

[PWR.(MOMS)SW PCB] CUP11910-4

FROM MAIN ASSY CN86

CUP11910-1 [FIP PCB]

BN84 TO VR JACK PCB

[STAND BY PCB] CUP11910-3

CN88

[KEY PCB] CUP11910-2

BN89

IC73 HRVHAL34H380A

IC75 74ACT04MTR

FROM INPUT ASS'Y(MCU) CN72

FIP1

AVR245/345/147/247/347 OPTION-1

BN85 TO PHONE JACK PCB

BN81 TO POWER ASS'Y

CUP11910-5 [PHONE JACK PCB]
[PHONE/VID3orVID4(DIGITAL)]

JK81 JK82 JK83

IC76 74HCU04AFN

JW83

TO INPUT ASS'Y BN18

AVR145/132/144/146 OPTION-1

AVR245/345/147/247/347 OPTION-2

AVR145/132/144/146 OPTION-2

RL45

IC86 NJM4556AL

BN22 TO INPUT ASS'Y

JW82

CN85 FROM FIP PCB

CN90 BN92 TO VR JACK PCB

CUP11910-6 [VR JACK PCB] [VR/HEAD PHONE&(MIC)/VID3orVID4(ANLOG)]

AVR147 PART

AVR245/345/247/347 PART

FROM PHONE JACK PCB BN2

IC41 NJU7301

IC87 NJM2068M

Only AVR147

AVR145/132/144/146/147 OPTION-3

AVR145/132/144/146/147 OPTION-4

FROM FIP CN84

VR74 ENCODER

JK85 JK86 JW84

BN10 TO INPUT ASS'Y

BN41 TO VIDEO ASS'Y

CUP11910-8 [BLACKET JACK PCB FOR CARD CABLE]

CUP11910-9 [BLACKET JACK PCB FOR PHONE JACK]

REVISION	2	4	6	
1	3	5	7	

SCHEMATIC DIAGRAM — SHEET 1/7

MODEL	AVR145/245/345/132/144 AVR146/147/247/347	
DESIGN	CHECK	APPROVE
S.H.Y	W.Y.Y	H.Y.L
07.01.18	07.01.18	07.01.18

DRAWING NO: 1910SCMX (FRONT) 1/1

CUP11915Z

bottom layer is possible.

The patterns of box should be designed as same length.

*option (Do not use these parts)

PGB0010603 x 8

impedance layout

ISSUE
ANAM
MULTI. LAB
2006.02.08

TENTATIVE

* TRANSISTOR *

(KRA102S) : R1, R2 => 10K OHM
(KRA103S) : R1, R2 => 22K OHM
(KRA104S) : R1, R2 => 47K OHM

CCEA1CH100T

CRJ104DJ220T

There are not these parts

Impedance layout

CLZ9R009Z

HDMI OUT

M/P

**IMPORTANT SAFETY NOTICE.
COMPONENTS IDENTIFIED BY ▲ MARK HAVE SPECIAL CHARACTERISTICS.
IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS.
USE ONLY MANUFACTURER'S SPECIFIED PARTS.

**THE UNIT OF RESISTANCE IS OHM.
K=1000 OHM, M=1000 KOHM

**THE UNIT OF CAPACITANCE IS MICROFARAD (uF)
pF=10^-6 uF

**THIS SCHEMATIC DIAGRAM MAY MODIFIED AT ANY TIME
WITH THE IMPROVEMENT OF PERFORMANCE

REVISION	2	4	6	
1	3	5	7	

SCHEMATIC DIAGRAM			SHEET
MODEL	AVR345/247/347		6/6
DESIGN	CHECK	APPROVE	DRAWING NO
W.Y.Y	W.Y.Y	H.W.L	1915SCMZ
07.03.14	07.03.14	07.03.14	1/2

CUP11915Z

DO NOT MOVE.

FLI8125
ANALOG INPUT

ADV7322
ANALOG OUTPUT

TO MCU & JANUS

FLI8125BC #8

#5: TACT SW WILL BE ADDED BY MANAUL.

HDMI CONTROL GPIO

FROM DOWNLOAD B'd

Blue DATA
Green DATA
Red DATA

Red DATA Input
Green DATA Input
Blue DATA Input

Do not USE

SD(13.5MHZ) MODE : LOW
HD(30MHZ) MODE : HIGH
Control by HUDSON

HIGH : OUTPUT ON , LOW : MUTE
THIS PORT IS USED TO MUTE AMALOG OUTPUT OF HDMI TO MEET COPY-PROTECT COMPLIANT.

ADD Connection

*Option
Do not Mount.

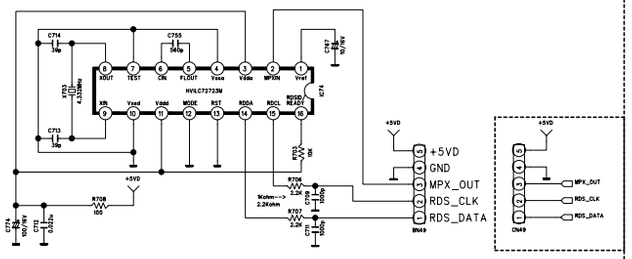
*option
Don't use

REVISION	2		4		6	
1		3		5		7

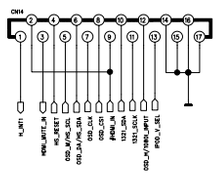
SCHEMATIC DIAGRAM			SHEET
MODEL	AVR345/247/347		6/6
DESIGN	CHECK	APPROVE	DRAWING NO
W.Y.Y	W.Y.Y	H.W.L	1915SCMZ (HUDSON) 2/2
07.03.14	07.03.14	07.03.14	

CUP11913Z

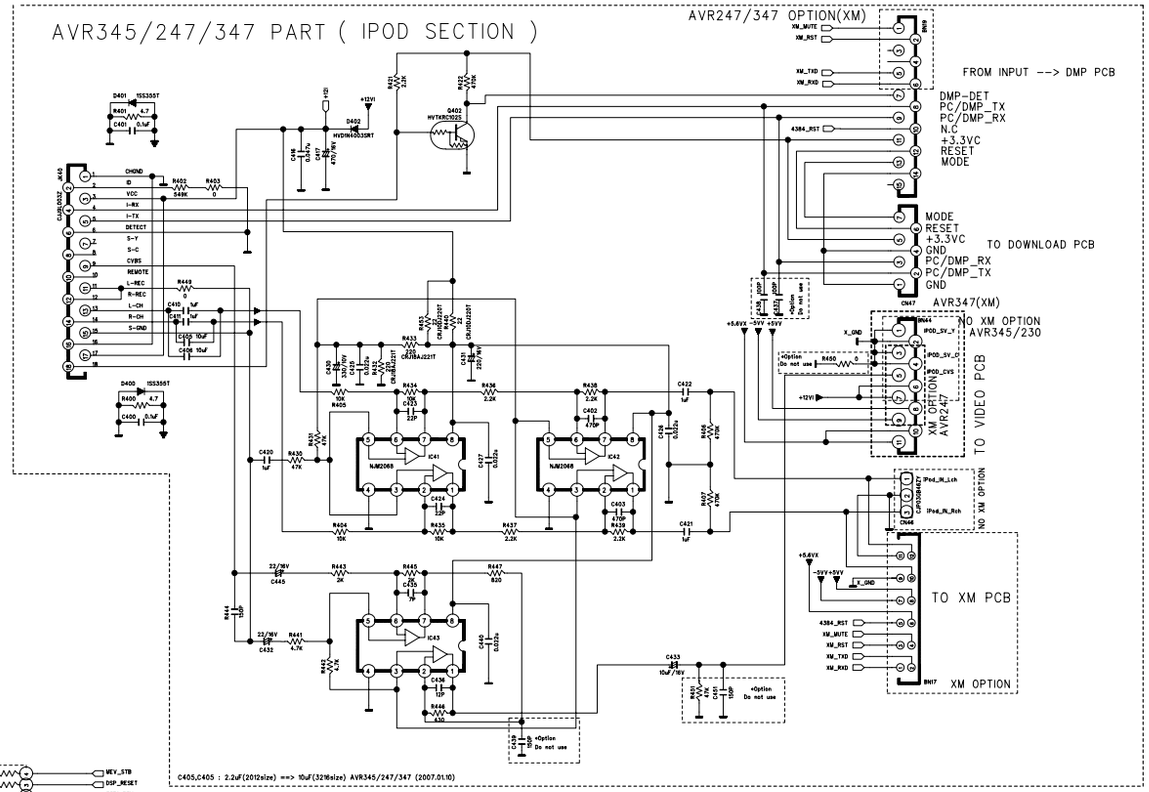
AVR345 PART RDS SECTION(EUR Ver. ONLY)

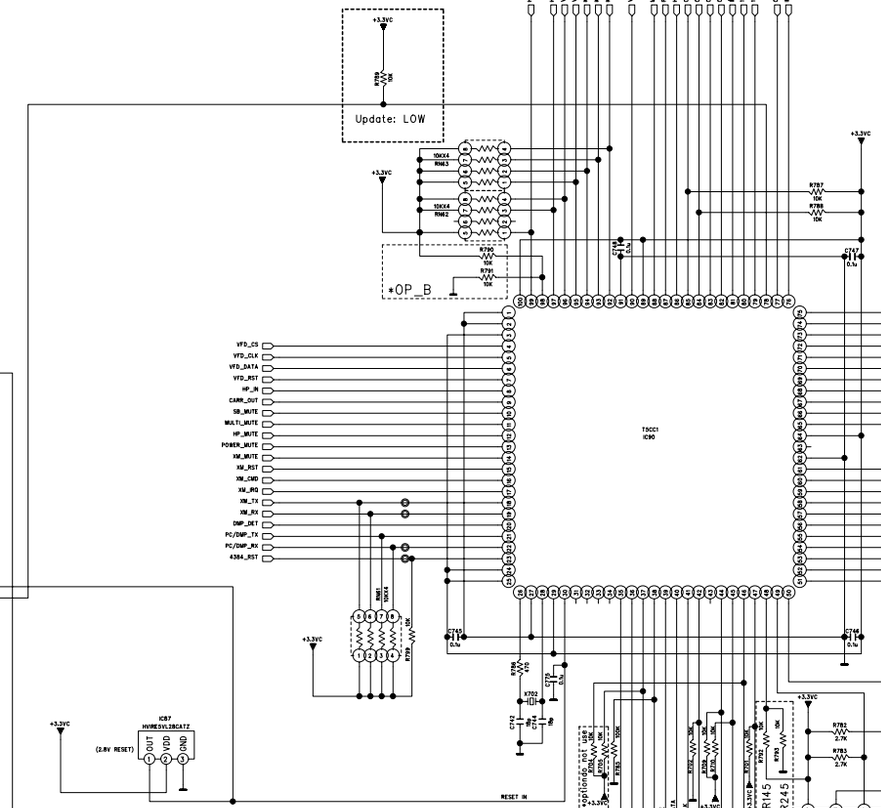


TO VIDEO PCB

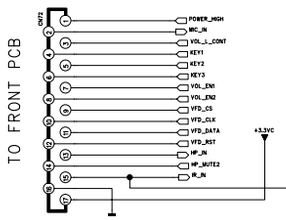


AVR345/247/347 PART (IPOD SECTION)

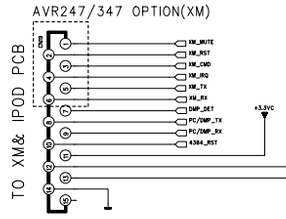




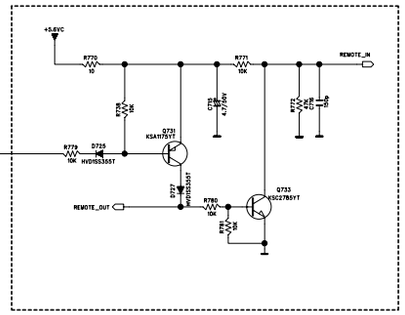
TO FRONT PCB



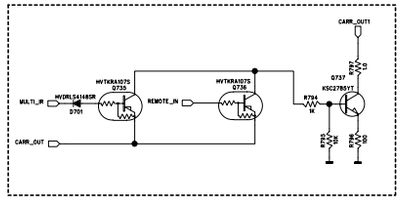
TO XM& IPOD PCB

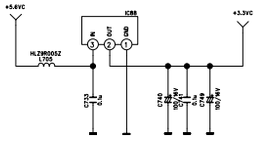


AVR345/247/347 PART



AVR345/247/347 PART (CARRIER OUT SECTION)





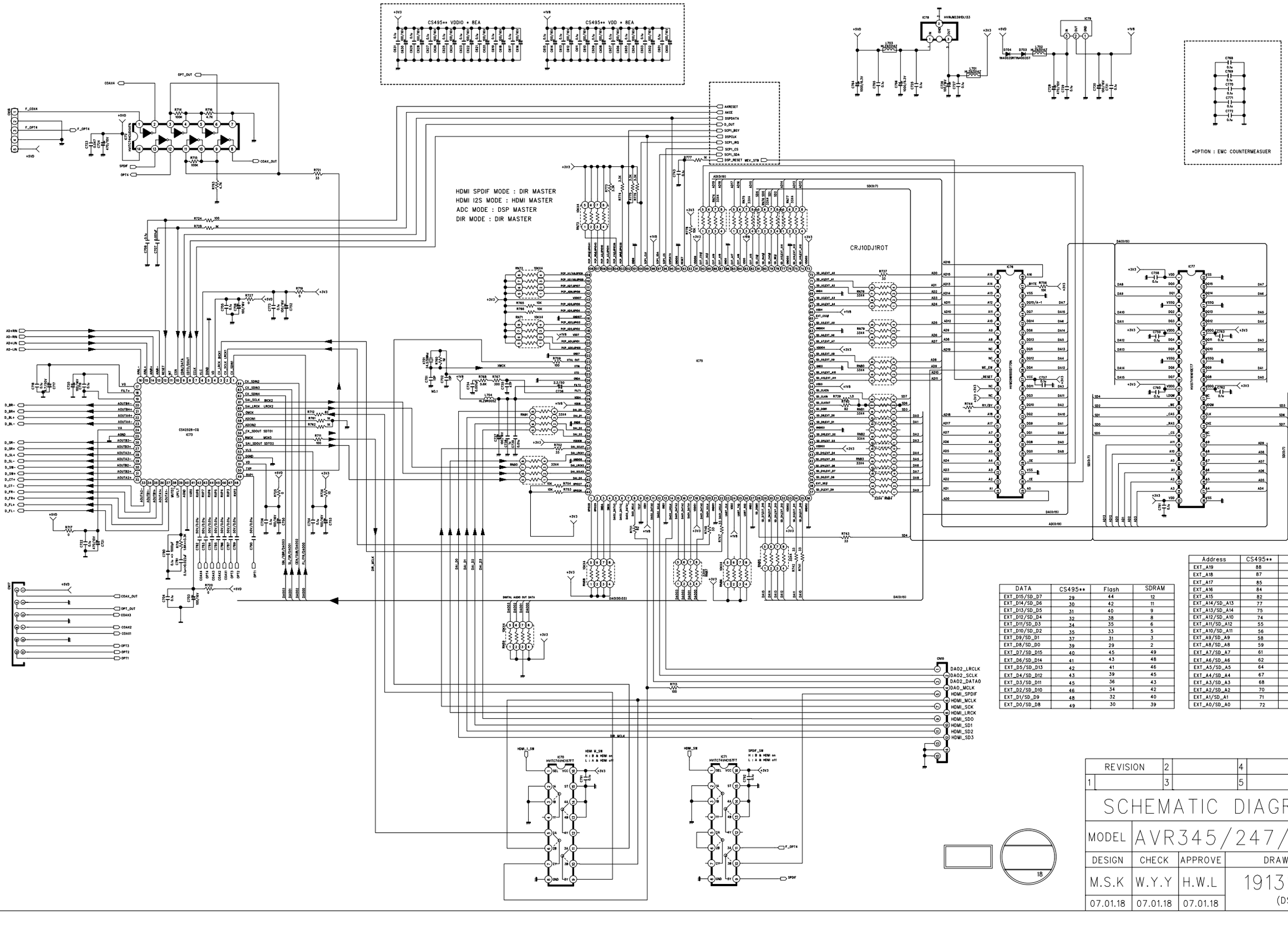
MODEL OPTION TABLE

MODEL	OP_A(PIN48)	OP_B(PIN98)	OP_C(PIN52)
AVR145, 147	HIGH(R792)	LOW(R791)	LOW(R712)
AVR245	LOW(R793)	LOW(R791)	LOW(R712)
NONE	OPEN	LOW(R791)	NOT OPTION
AVR132	LOW(R793)	HIGH(R790)	LOW(R712)
AVR144, 146	HIGH(R792)	HIGH(R790)	LOW(R712)
AVR145/230	HIGH(R792)	LOW(R791)	HIGH(R711)
AVR245/230	LOW(R793)	LOW(R791)	HIGH(R711)
AVR347	HIGH(R792)	LOW(R791)	NOT OPTION
AVR247	LOW(R793)	LOW(R791)	NOT OPTION
AVR345/230	HIGH(R792)	HIGH(R790)	NOT OPTION

REVISION	2		4		6	
1		3		5		7

SCHEMATIC DIAGRAM			SHEET
MODEL	AVR345/247/347		4/6
DESIGN	CHECK	APPROVE	DRAWING NO
M.S.K	W.Y.Y	H.W.L	1913SCMZ (CPU) 3/4
07.01.18	07.01.18	07.01.18	

CUP11913Z



DATA	CS495**	Flash	SDRAM
EXT_D15/SD_D7	29	44	12
EXT_D14/SD_D6	30	42	11
EXT_D13/SD_D5	31	40	9
EXT_D12/SD_D4	32	38	8
EXT_D11/SD_D3	34	35	6
EXT_D10/SD_D2	35	33	5
EXT_D9/SD_D1	37	31	3
EXT_D8/SD_D0	39	29	2
EXT_D7/SD_D15	40	45	49
EXT_D6/SD_D14	41	43	48
EXT_D5/SD_D13	42	41	46
EXT_D4/SD_D12	43	39	45
EXT_D3/SD_D11	45	36	43
EXT_D2/SD_D10	46	34	42
EXT_D1/SD_D9	48	32	40
EXT_D0/SD_D8	49	30	39

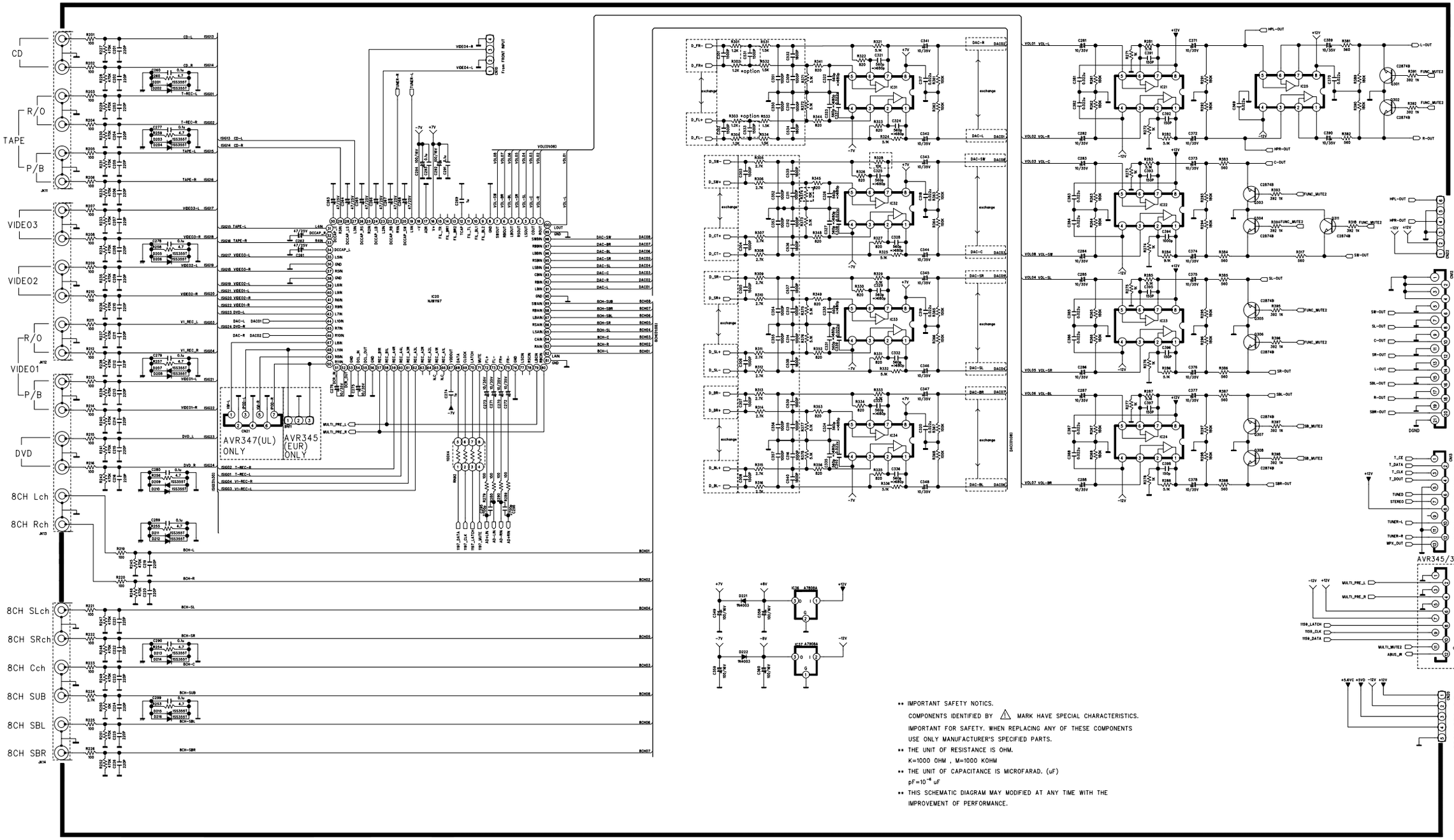
Address	CS495**	Flash	SDRAM
EXT_A19	88	9	
EXT_A18	87	16	
EXT_A17	85	17	
EXT_A16	84	48	
EXT_A15	82	1	
EXT_A14/SD_A13	77	3	
EXT_A13/SD_A14	75	2	
EXT_A12/SD_A10	74	6	20
EXT_A11/SD_A12	55	4	
EXT_A10/SD_A11	56	5	19
EXT_A9/SD_A9	58	7	32
EXT_A8/SD_A8	59	8	31
EXT_A7/SD_A7	61	18	30
EXT_A6/SD_A6	62	19	29
EXT_A5/SD_A5	64	20	28
EXT_A4/SD_A4	67	21	27
EXT_A3/SD_A3	68	22	24
EXT_A2/SD_A2	70	23	23
EXT_A1/SD_A1	71	24	22
EXT_A0/SD_A0	72	25	21

REVISION	2		4		6	
1		3		5		7

SCHEMATIC DIAGRAM — SHEET 4/6

MODEL	AVR345/247/347		
DESIGN	CHECK	APPROVE	DRAWING NO
M.S.K	W.Y.Y	H.W.L	1913SCMZ (DSP) 2/4
07.01.18	07.01.18	07.01.18	

CUP11913Z

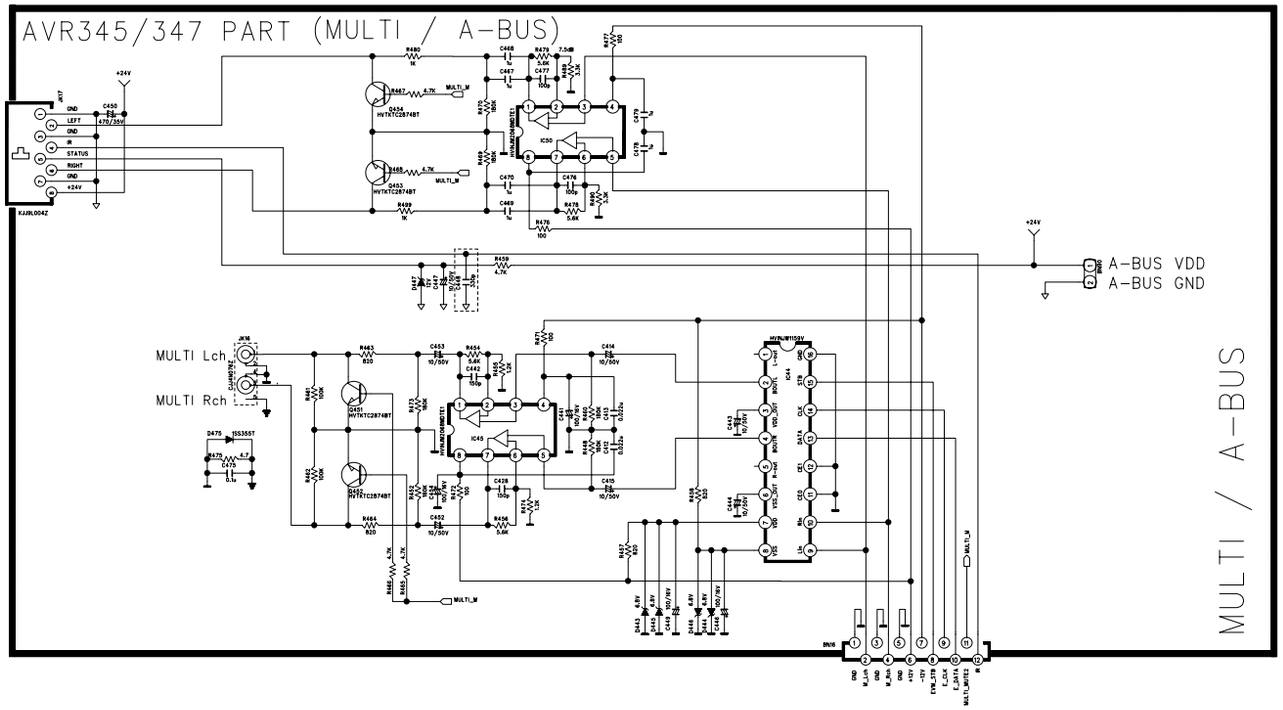


** IMPORTANT SAFETY NOTICS.
COMPONENTS IDENTIFIED BY ⚠ MARK HAVE SPECIAL CHARACTERISTICS.
IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS
USE ONLY MANUFACTURER'S SPECIFIED PARTS.
** THE UNIT OF RESISTANCE IS OHM.
K=1000 OHM , M=1000 KOHM
** THE UNIT OF CAPACITANCE IS MICROFARAD. (uF)
pF=10^{-6} uF
** THIS SCHEMATIC DIAGRAM MAY MODIFIED AT ANY TIME WITH THE
IMPROVEMENT OF PERFORMANCE.

REVISION	2	4	6
1	3	5	7

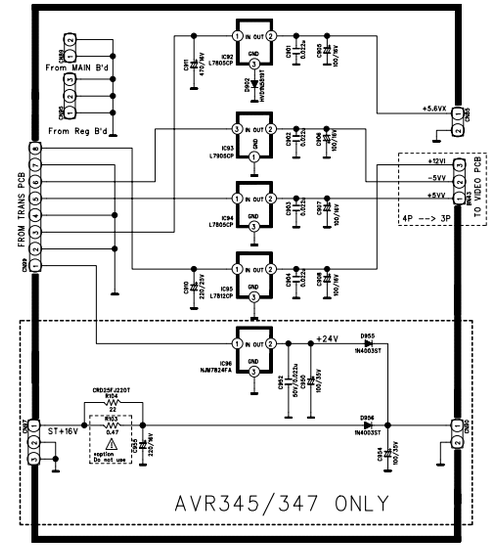
SCHEMATIC DIAGRAM			SHEET
MODEL	AVR345/247/347		4/6
DESIGN	CHECK	APPROVE	DRAWING NO
M.S.K	W.Y.Y	H.W.L	1913SCMZ (INPUT) 1/4
07.01.18	07.01.18	07.01.18	

AVR345/347 PART (MULTI / A-BUS)

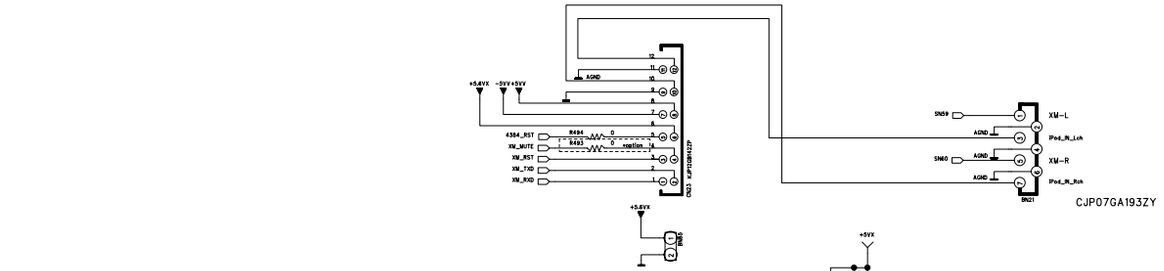


CUP11913Z

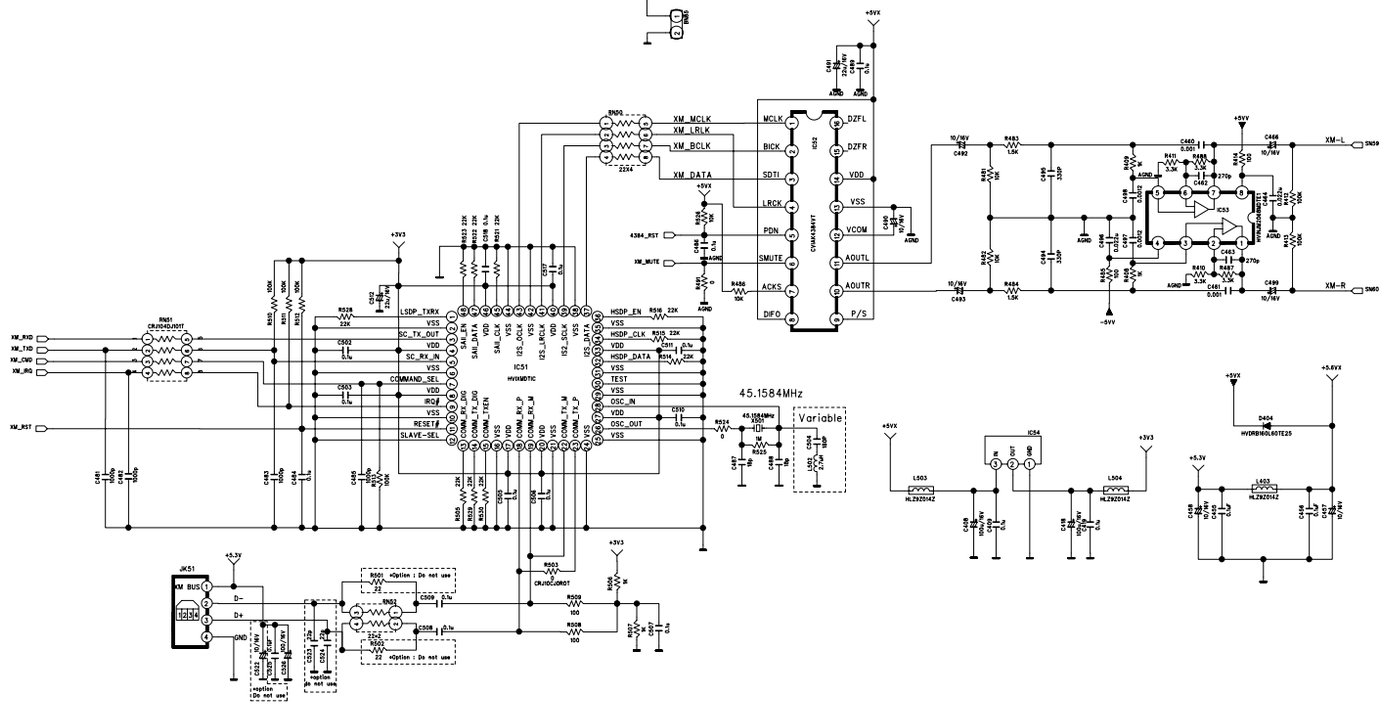
AVR345/347 PART (REGULATOR SECTION)



AVR247/347 PART (XM SECTION USA Ver. ONLY)



1920SCMY

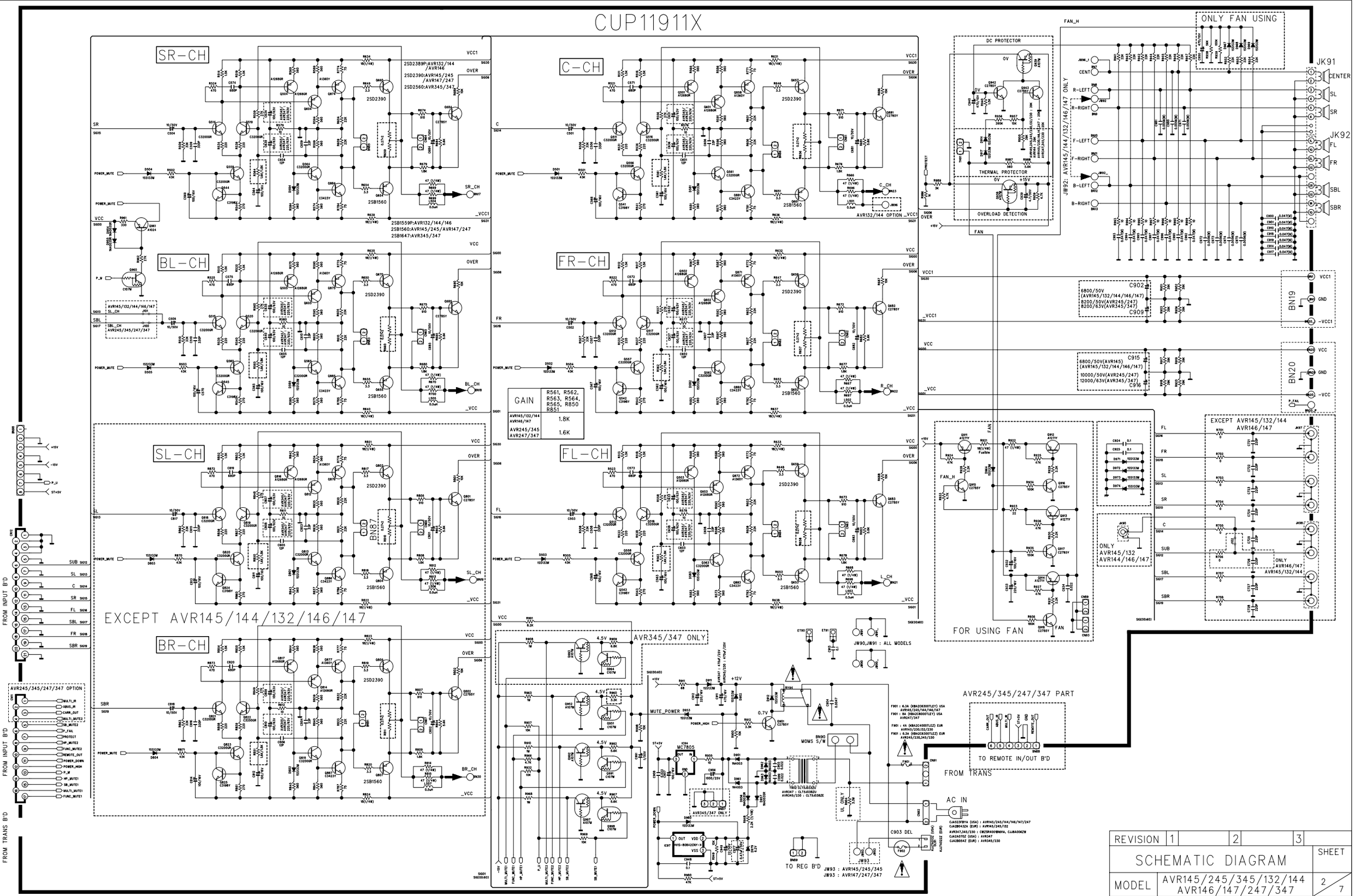


REVISION	2	4	6	
1	3	5	7	

SCHEMATIC DIAGRAM — SHEET 4/6

MODEL	AVR345/247/347		
DESIGN	CHECK	APPROVE	DRAWING NO
M.S.K	W.Y.Y	.H.W.L	1913SCMZ (MULTI) 4/4
07.01.18	07.01.18	07.01.18	

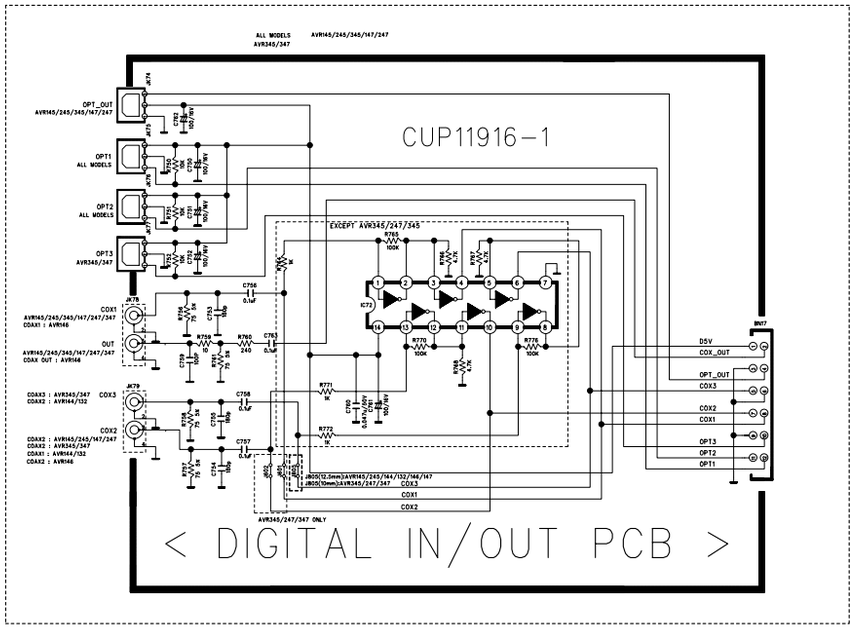
CUP11911X

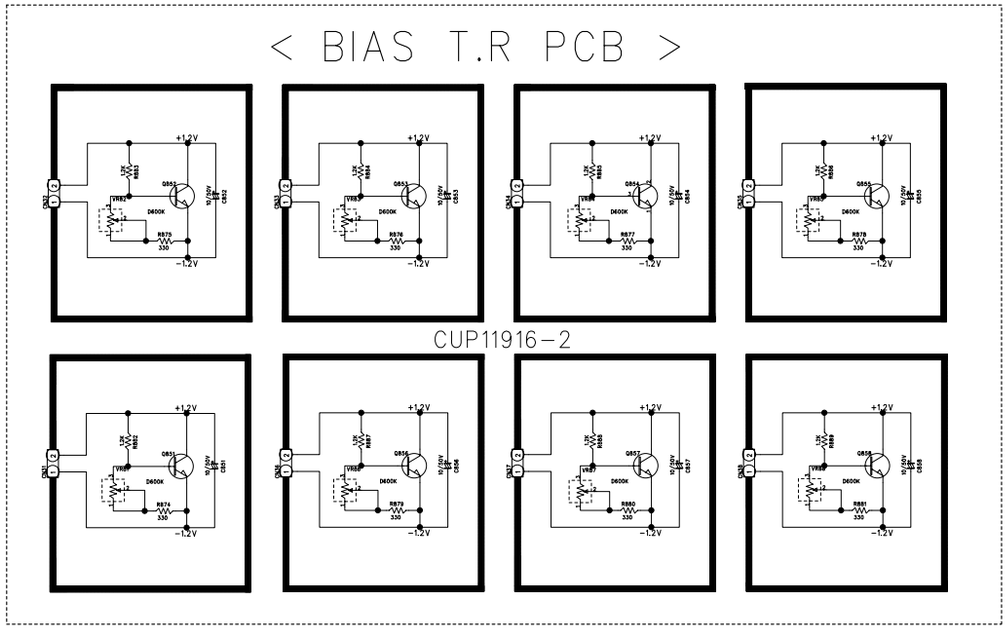


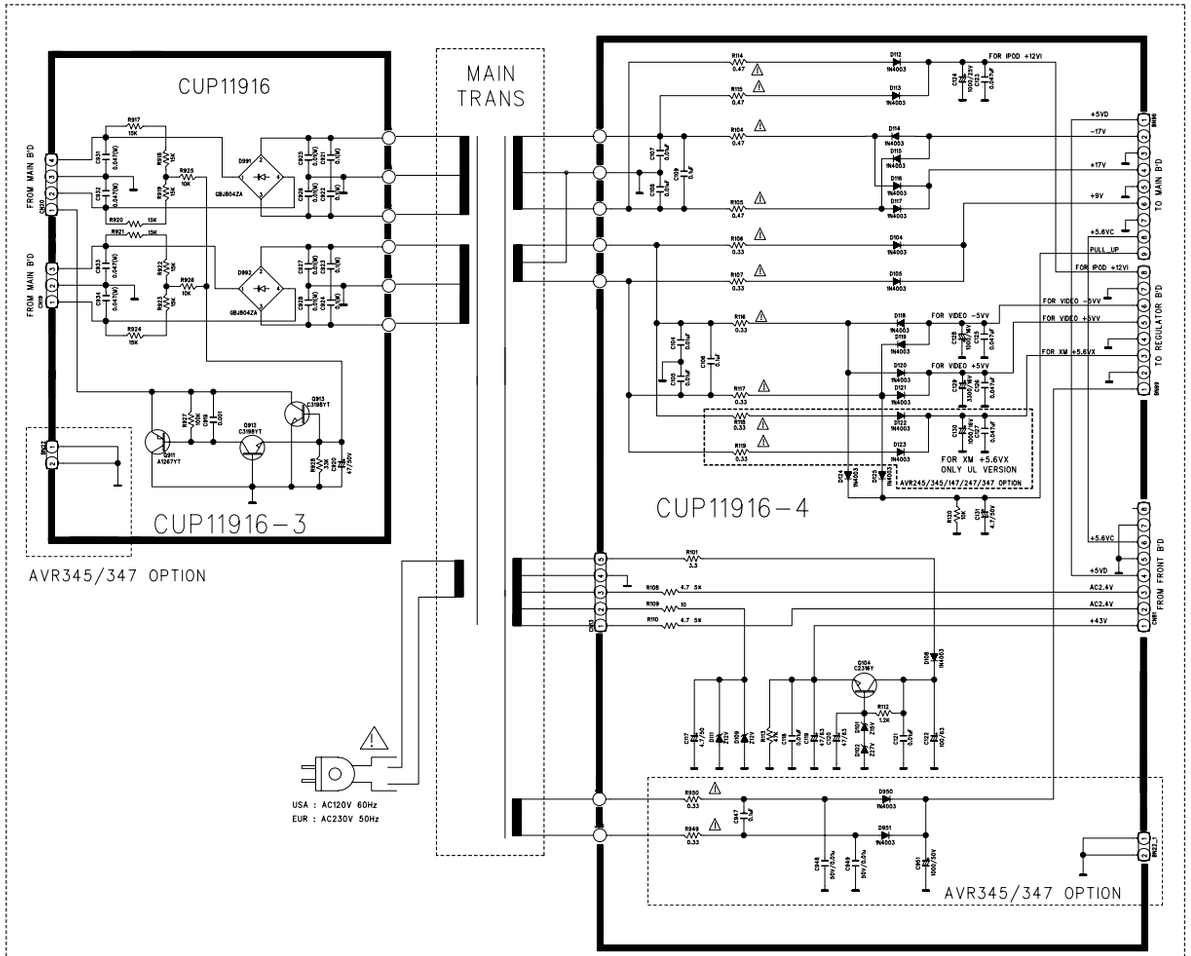
** IMPORTNAT SAFETY NOTICE.
IMPORTANT FOR SAFETY WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY MANUFACTURE'S SPECIFIED PARTS.
** THE UNIT OF RESISTANCE IS OHM.
K=1000 OHM, M=1000 KOHM.
** THE UNIT OF CAPACITANCE IS MICROFARAD (uF)
pF = 10 " uF
** THIS SCHEMATIC DIAGRAM MAY MODIFIED AT ANY TIME WIHE THE IMPROVEMENT OF PERFORMANCE

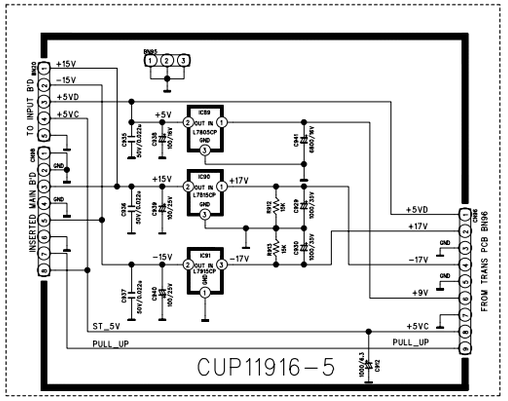
REVISION	1	2	3	
SCHEMATIC DIAGRAM				SHEET
MODEL	AVR145/245/345/132/144 AVR146/147/247/347			2 / 7
DESIGN	CHECK	APPROVE	DRAWING NO	
C.B.L	W.Y.Y	H.W.L	1911SCMX (MAIN)	1/1
07.03.14	07.03.14	07.03.14		

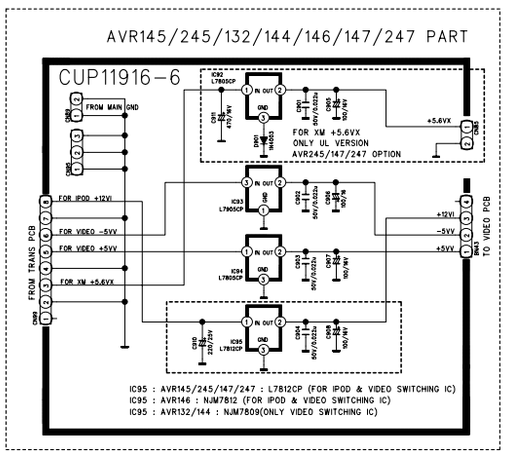
CUP11911X

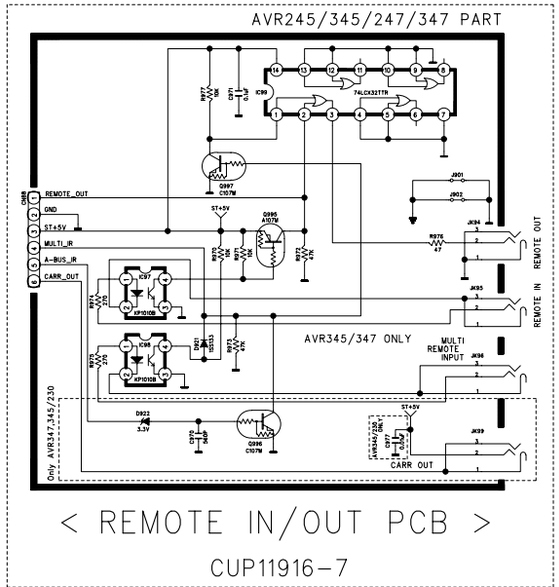


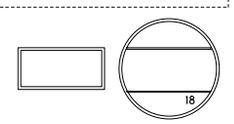








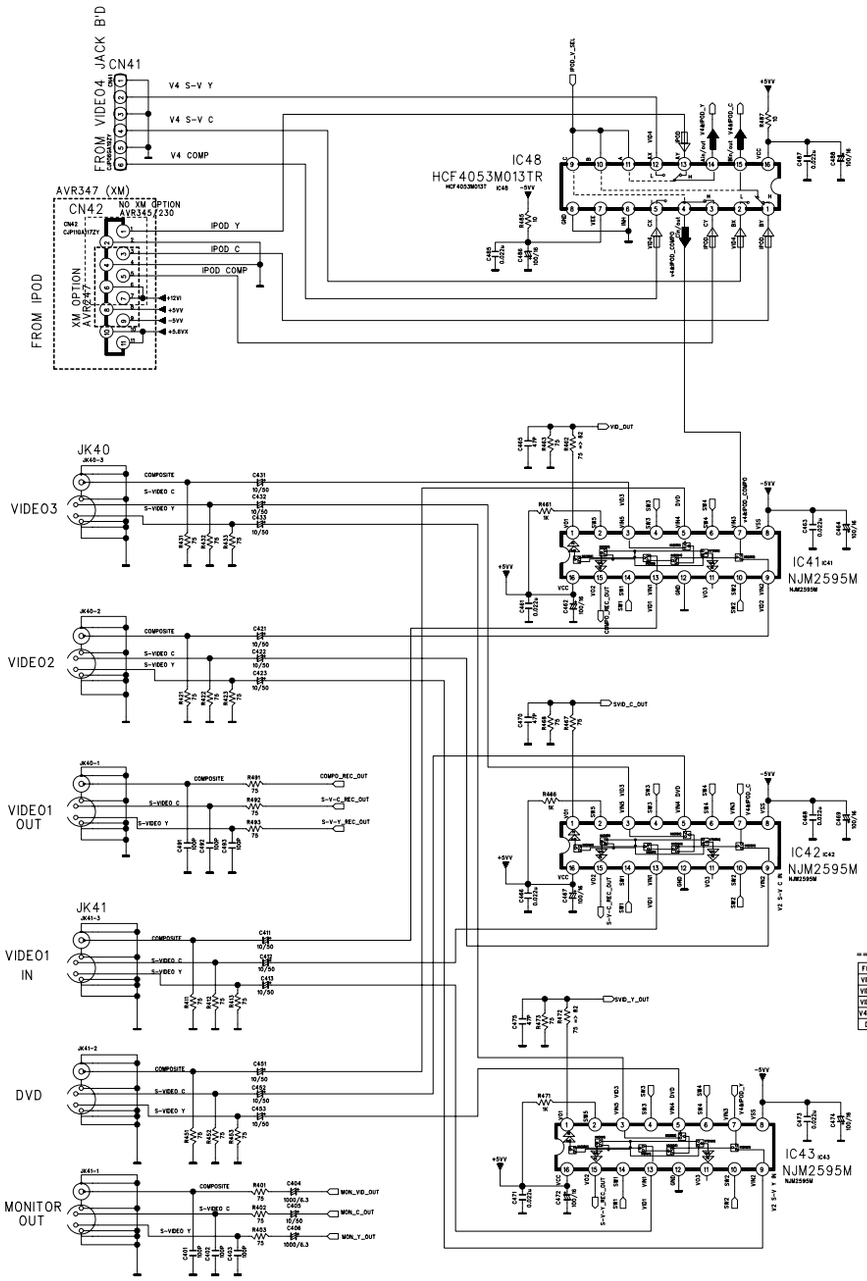


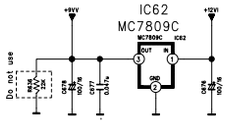


REVISION	2		4		6	
1		3		5		7

SCHEMATIC DIAGRAM			SHEET
MODEL	AVR145/245/345/132/144 AVR146/147/247/347		3/7
DESIGN	CHECK	APPROVE	DRAWING NO
C.B.L	W.Y.Y	H.W.L	1916SCMX (POWER)
07.01.18	07.01.18	07.01.18	1/1

CUP11918Z





* DEFINITION OF I2C REGISTER (NJW1321)

I2C BUS FORMAT

MSB		LSB	MSB		LSB	MSB		LSB	MSB		LSB
S(1BIT)	SLAVE ADDRESS(7BIT)		A(1BIT)	DATA(8BIT)		A(1BIT)	DATA(8BIT)		A(1BIT)	P(1BIT)	

S : Starting Term
A : Acknowledge Bit
P : Ending Term

SLAVE ADDRESS

MSB	Slave Address(7BIT)						LSB	Hex
1	0	0	0	0	0	0	R/NOT W(1BIT)	--

R/NOT W : Set the Brite Mode or Read Mode.
ADR : Set the Slave Address by " ADR" terminal.
R/NOT W = 0 : WRITE MODE, ADR = 0/1 : ADR=0 Hex84(h), ADR=1 Hex86(h)
R/NOT W = 1 : READ MODE, ADR = 0/1 : ADR=0 Hex85(h), ADR=1 Hex87(h)

CONTROL REGISTER TABLE
<WRITE MODE>

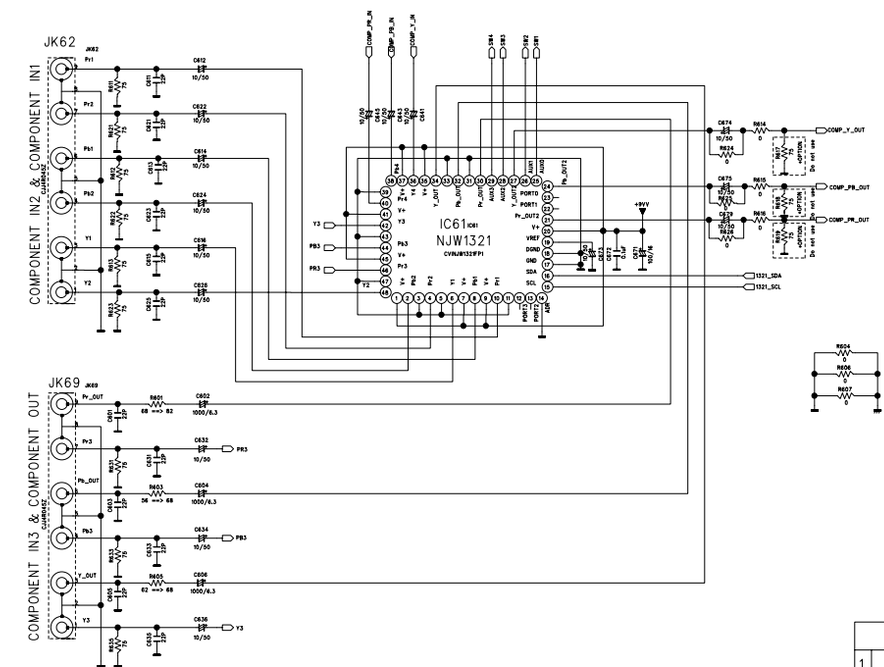
NO.	BIT							
	D7	D6	D5	D4	D3	D2	D1	D0
DATA 1	PS1	PS2	OUT1				OUT2	
DATA 2	AUX0		AUX1		AUX2		AUX3	

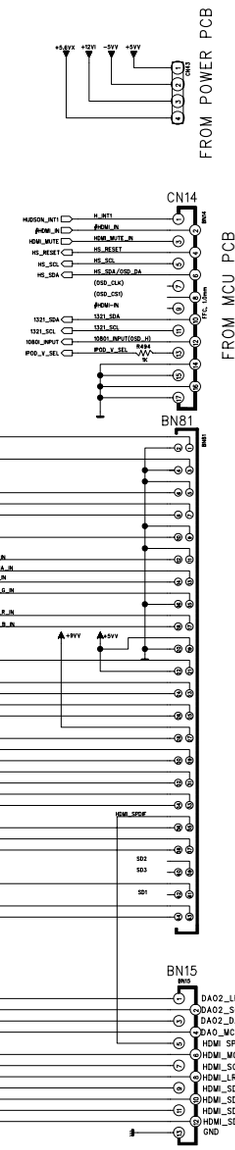
PS : POWER SAVE
=> PS = 1 : POWER SAVE ON (MUTE), PS = 0 : POWER SAVE OFF (OUT ON)
OUT : OUTPUT
AUX : AUXILIARY (CONTROL SIGNAL OUTPUT)

<READ MODE>

NO.	BIT							
	D7	D6	D5	D4	D3	D2	D1	D0
DATA	PORT0		PORT1		PORT2		PORT3	

PORT : INPUT





• AVR345 •NO.4

REVISION	2	4	6
1	3	5	7

SCHEMATIC DIAGRAM			SHEET
MODEL	AVR345/247/347		5/6
DESIGN	CHECK	APPROVE	DRAWING NO
C.B.L	W.Y.Y.	H.W.L	1918SCMZ (VIDEO)
07.01.29	07.01.29	07.01.29	1/1

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