

AVR 130 Audio/Video Receiver

SERVICE MANUAL



harman/kardon®

Power for the Digital Revolution™

Technical Specifications

Audio Section

Stereo Mode

Continuous Average Power (FTC)

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

Five-Channel Surround Modes

Power Per Individual Channel

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

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

Surround channels:
40 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) 95dB

Surround System Adjacent Channel Separation

Analog Decoding 40dB
(Pro Logic, etc.)

Dolby Digital (AC-3) 55dB

DTS 55dB

Frequency Response

@ 1W (+0dB, -3dB) 10Hz–100kHz

High Instantaneous

Current Capability (HCC) ±25 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/13.2dB

Signal-to-Noise Ratio Mono/Stereo: 70/65dB (DIN)

Distortion Mono/Stereo: 0.15/0.3%

Stereo Separation 35dB @ 1kHz

Selectivity ±400kHz: 70dB

Image Rejection 80dB

IF Rejection 90dB

AM Tuner Section

Frequency Range 522–1720kHz

Signal-to-Noise Ratio 45dB

Usable Sensitivity Loop: 500µV

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 10Hz–8MHz (-3dB)

General

Power Requirement AC 220-240V/50Hz

Power Consumption 72W idle, 580W maximum
(2 channels driven)

Dimensions (Max)

Width 440mm

Height 168mm

Depth 390mm

Weight 10.9 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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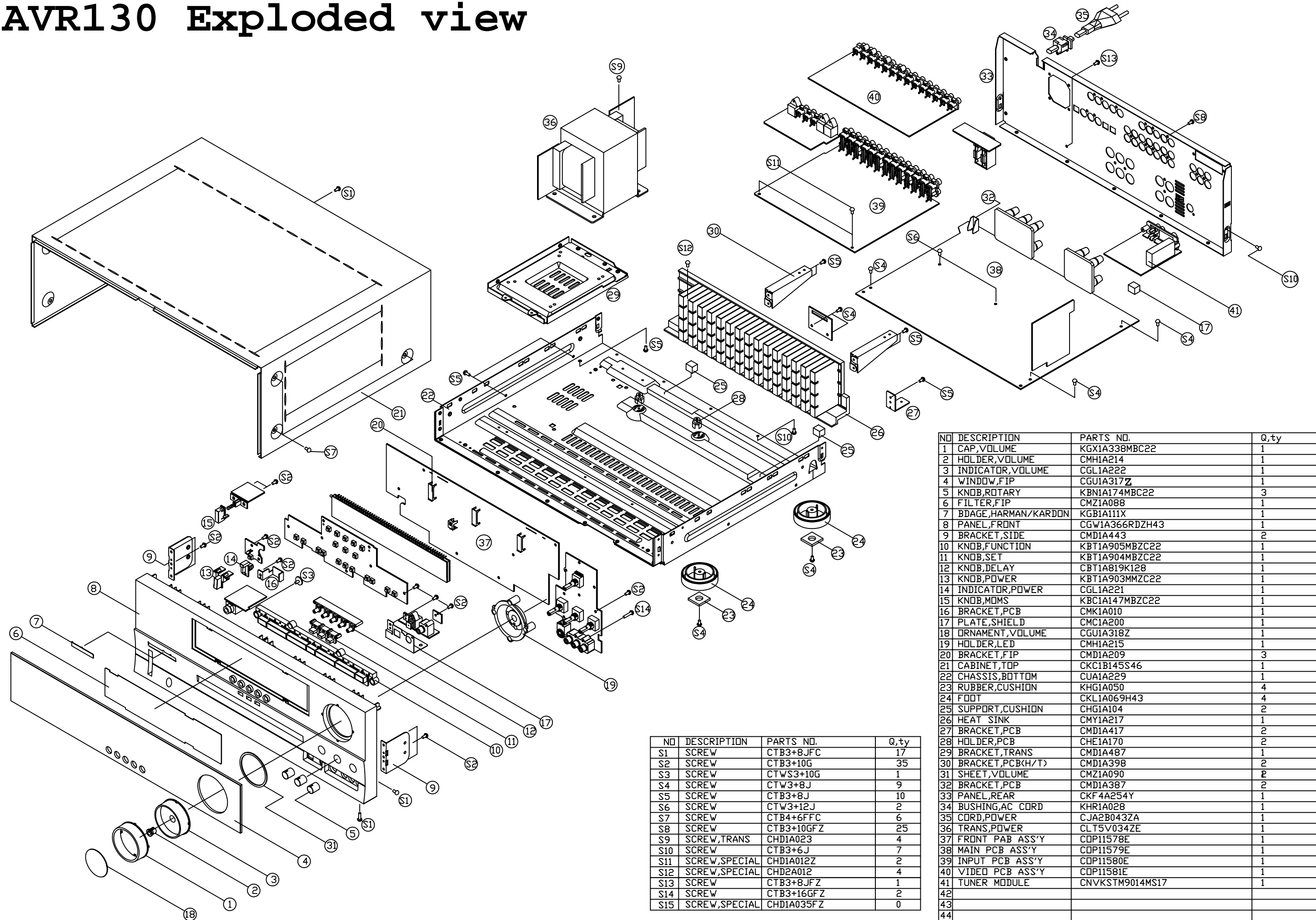
††UltraStereo is a trademark of UltraStereo Corp.

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Logic 7 is a registered trademark of Lexicon, Inc.

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AVR130 Exploded view



NO	DESCRIPTION	PARTS NO.	Q,ty
1	CAP,VOLUME	KGX1A338MBC22	1
2	HOLDER,VOLUME	CMH1A214	1
3	INDICATOR,VOLUME	CGL1A222	1
4	WINDOW,FIP	CGU1A317Z	1
5	KNOB,ROTARY	KBN1A174MBC22	3
6	FILTER,FIP	CMZ1A088	1
7	BDAGE,HARMAN/KARDON	KGB1A111X	1
8	PANEL,FRONT	CGW1A366RDZH43	1
9	BRACKET,SIDE	CMD1A443	2
10	KNOB,FUNCTION	KBT1A905MBZC22	1
11	KNOB,SET	KBT1A904MBZC22	1
12	KNOB,DELAY	CBT1A819K128	1
13	KNOB,POWER	KBT1A903MMZC22	1
14	INDICATOR,POWER	CGL1A221	1
15	KNOB,MOMS	KBC1A147MBZC22	1
16	BRACKET,PCB	CMK1A010	1
17	PLATE,SHIELD	CMC1A200	1
18	ORNAMENT,VOLUME	CGU1A318Z	1
19	HOLDER,LED	CMH1A215	1
20	BRACKET,FIP	CMD1A209	3
21	CABINET, TOP	KKC1B145S46	1
22	CHASSIS,BOTTOM	CUA1A229	1
23	RUBBER,CUSHION	KHG1A050	4
24	FOOT	CKL1A069H43	4
25	SUPPORT,CUSHION	CHG1A104	2
26	HEAT SINK	CMY1A217	1
27	BRACKET,PCB	CMD1A417	2
28	HOLDER,PCB	CHE1A170	2
29	BRACKET,TRANS	CMD1A487	1
30	BRACKET,PCBCH/T	CMD1A398	2
31	SHEET,VOLUME	CMZ1A090	2
32	BRACKET,PCB	CMD1A387	2
33	PANEL,REAR	CKF4A254Y	1
34	BUSHING,AC CORD	KHR1A028	1
35	CORD,POWER	CJA2B043ZA	1
36	TRANS,POWER	CLT5V034ZE	1
37	FRONT PAB ASS'Y	COP11578E	1
38	MAIN PCB ASS'Y	COP11579E	1
39	INPUT PCB ASS'Y	COP11580E	1
40	VIDEO PCB ASS'Y	COP11581E	1
41	TUNER MODULE	CNVKSTM9014MS17	1
42			
43			
44			

NO	DESCRIPTION	PARTS NO.	Q,ty
S1	SCREW	CTB3+8JFC	17
S2	SCREW	CTB3+10G	35
S3	SCREW	CTWS3+10G	1
S4	SCREW	CTW3+8J	9
S5	SCREW	CTB3+8J	10
S6	SCREW	CTW3+12J	2
S7	SCREW	CTB4+6FFC	6
S8	SCREW	CTB3+10GFZ	25
S9	SCREW,TRANS	CHD1A023	4
S10	SCREW	CTB3+6J	7
S11	SCREW,SPECIAL	CHD1A012Z	2
S12	SCREW,SPECIAL	CHD2A012	4
S13	SCREW	CTB3+8JFZ	1
S14	SCREW	CTB3+16GFZ	2
S15	SCREW,SPECIAL	CHD1A035FZ	0

AVR130 PACKING			
			1/1
Pos	Part number	1st part name	2nd part name
	CQXAVR130	INSTRUCTION MANUAL ASS'Y	
	CPG1A732Z	BOX , OUT CARTON	
	CPP1A081Z	BAG,POLY SET	
	CPS4A564	PAD , SNOW L	
	CPS4A565	PAD , SNOW R	
	CPB1061Y	BAG , POLY	
	CQE1A180Z	BOOKLET , IMFORMATIONS	AVR2550/3550
	CQX1A861z	MANUAL , INSTRUCTION	AVR130
	CQX1A865Y	MANUAL , SETUP	AVR130
	CSA1A018Z	FM 1 POLE ANT	
	CSA3A012Z	AM LOOP ANTENNA ASS'Y	LUG WIRE TYPE
	HABAAAM1.5VHK	BATTERY	
	HARTAVR130cc	REMOCON ASS'Y	AVR130
	KPL0905	STAPLE	
	CRE1A037	LOCKER	SH08M790BO
	KHE154	CLAMPER , ARM	
	KPL6500	STAPLE	
	K4FC240CL	TAPE , P.P	
	K4FC500CL	TAPE , OPP	CLEAR 50M/M
AVR130 MECH			
			1/2
Pos	Part number	1st part name	2nd part name
	AVR 130 SET	SET , AV SURROUND RECEIVER	
	KBN1A174MBC22	KNOB , ROTARY	
	KGB1A111X	BADGE , HARMAN/KARDON	
	KGX1A338MBC22	CAP , VOLUME	
	CGL1A222	INDICATOR , VOLUME	
	CGU1A317Z	WINDOW , FIP	
	CGU1A318Z	ORNAMENT , VOLUME	
	CGWAVR2600	FRONT PANEL ASS'Y	
	CBT1A819K128	KNOB , DELAY	
	CGL1A221	INDICATOR , POWER	
	CGW1A366RDZH43	PANEL , FRONT	
	CMC1A200	PLATE , SHIELD	
	CMD1A443	BRACKET , SIDE	
	CMH1A215	HOLDER , LED	
	CMK1A010	BRACKET , PCB	
	CMX1A148	INSULATOR , FUBCTION	
	CMX1A149	INSULATOR , SET	
	CMZ1A088	FILTER , FIP	
	CUAAVR505	BOTTOM CHASSIS ASS'Y	
	CHD1A012Z	SCREW , SPECIAL	
	CHD1A023	SCREW , TRANS	M4X10(SP/WA)
	CHD2A012	SCREW , TR	

AVR130 MECH			
			2/2
Pos	Part number	1st part name	2nd part name
CB13	CWC1C4A13B080B	CABLE , CARD 13pins FFC	TUNER - DSP
CB15	CWC1C4A09B100B	CABLE , CARD 9pins FFC	VIDEO DSP
	CHE170	HOLDER , PCB	
	CHG1A104	CUSHION , EVA	H=9.5(15X20)
	CHG1A157	CUSHION , RUBBER	
	CJA2B043ZA	CORD , POWER(EUR)	QDR-7100CC
	CKF4A254Y	PANEL , REAR	AVR505
	CKL1A069H43	FOOT	
	CLZ9W003Z	FERRITE , RING	29X7.7X19
	CMD1A487	BRACKET , TRANS	
	CNVKSTM9014MS17	TUNER MODULE(EUR)	
	CTB3+10G	SCREW	
	CTB3+16GFZ	SCREW	
	CTWS3+10G	SCREW	
	KBC1A147MBZC22	KNOB , MOMS	
	KBT1A903MMZC22	KNOB , POWER	
	KBT1A904MBZC22	KNOB , SET	
	KBT1A905MBYC22	KNOB , FUNCTION	
	KHR301	CLAMPER	
BN72	CWZAVR230BN72	WIRE ASS'Y	
	CKC1B145S46	CABINET , TOP	
	CLZ9Z028Z	FERRITE CORE(21.2X6.4X12.7)	
	CMH1A214	HOLDER , VOLUME	
	CMZ1A090	SHEET , VOLUME	
	CTB3+8JFC	SCREW	
	CTB4+6FFC	SCREW	
AVR130 FRONT BD			
			1/10
Pos	Part number	1st part name	2nd part name
COP11578E	FRONT PCB ASS'Y		
C712	HCEA1HH1R0T	CAP , ELECT	1UF 50V
C713	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C714	HCBS1H151KBT	CAP , CERAMIC	150PF 50V K
C716	HCEA1CH331T	CAP , ELECT	
C717	HCBS1H221KBT	CAP , CERAMIC	220PF 50V K
C718	HCBS1H221KBT	CAP , CERAMIC	220PF 50V K
C719	HCBS1H181KBT	CAP , CERAMIC	180PF 50V K
C720	HCBS1H181KBT	CAP , CERAMIC	180PF 50V K
C721	HCBS1H181KBT	CAP , CERAMIC	180PF 50V K
C722	HCEA1CH101T	CAP , ELECT	100UF 16V
C723	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z
C724	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C725	CCKT1H473ZF	CAP , CERAMIC	0.047UF 50V ZF
C726	HCEA0JH102T	CAP , ELECT	1000UF 6.3V

AVR130 FRONT BD			
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Pos	Part number	1st part name	2nd part name
C727	HCBS1H221KBT	CAP , CERAMIC	220PF 50V K
C728	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z
C729	CCKT1H473ZF	CAP , CERAMIC	0.047UF 50V ZF
C730	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z
C731	HCEA1HH100T	CAP , ELECT	10UF 50V
C732	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z
C733	HCEA1EH470T	CAP , ELECT	47UF 25V
C735	HCEA1VH100T	CAP , ELECT	10UF 35V
C736	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C737	HCBS1H180JT	CAP , CERAMIC	
C738	HCBS1H180JT	CAP , CERAMIC	
C770	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C771	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C773	HCEA1VH100T	CAP , ELECT	10UF 35V
C774	HCEA1VH100T	CAP , ELECT	10UF 35V
C775	HCBS1H151KBT	CAP , CERAMIC	150PF 50V K
C776	HCBS1H151KBT	CAP , CERAMIC	150PF 50V K
C777	HCEA1VH100T	CAP , ELECT	10UF 35V
C778	HCEA1VH100T	CAP , ELECT	10UF 35V
C779	HCEA1CKS470T	CAP, ELECT	
C780	HCEA1CKS470T	CAP, ELECT	
C781	HCEA1CKS100T	CAP , ELECT	
C782	HCEA1CKS100T	CAP , ELECT	
C785	HCBS1H470JT	CAP , CERAMIC	47PF 50V J
C786	HCBS1H470JT	CAP , CERAMIC	47PF 50V J
C787	HCEA1CKS100T	CAP , ELECT	
C788	HCEA1CKS100T	CAP , ELECT	
C789	HCEA1CKS100T	CAP , ELECT	
C790	HCEA1CKS100T	CAP , ELECT	
C791	HCEA1CKS470T	CAP, ELECT	
C792	HCEA1CKS470T	CAP, ELECT	
C793	KCFE1J183JBT	CAP , FILM	0.018UF 63V J
C794	KCFE1J183JBT	CAP , FILM	0.018UF 63V J
C795	KCFE1J823JBT	CAP , FILM	0.082UF 63V J
C796	KCFE1J823JBT	CAP , FILM	0.082UF 63V J
C797	KCFE1J332JBT	CAP , FILM	0.0033UF 63V J
C798	KCFE1J332JBT	CAP , FILM	0.0033UF 63V J
C799	KCFE1J183JBT	CAP , FILM	0.018UF 63V J
C800	KCFE1J183JBT	CAP , FILM	0.018UF 63V J
C805	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C806	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C807	CCKT1H104ZF	CAP , CERAMIC	50V 0.1UF
C808	CCKT1H181KB	CAP , CERAMIC	180PF 50V KB
C809	HCEA1AH471T	CAP , ELECT	470UF 10V

AVR130 FRONT BD			
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Pos	Part number	1st part name	2nd part name
C810	HCEA1CH101T	CAP , ELECT	100UF 16V
C811	HCEA1CH101T	CAP , ELECT	100UF 16V
C812	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z
C813	HCEA1HH4R7T	CAP , ELECT	4.7UF 50V
C814	HCEA1HH4R7T	CAP , ELECT	4.7UF 50V
C850	HCBS1H471KBT	CAP , CERAMIC	
C851	HCBS1H471KBT	CAP , CERAMIC	
C852	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z
C855	HCBS1H101KBT	CAP , CERAMIC	100PF 50V K
C856	HCBS1H101KBT	CAP , CERAMIC	100PF 50V K
C857	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z
C858	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C859	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C860	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C861	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C862	HCBS1H101KBT	CAP , CERAMIC	100PF 50V K
C863	HCBS1H101KBT	CAP , CERAMIC	100PF 50V K
C864	HCEA1VH100T	CAP , ELECT	10UF 35V
C865	CCKT1H473ZF	CAP , CERAMIC	0.047UF 50V ZF
C866	HCEA1CKS100T	CAP , ELECT	
C867	HCEA1CKS100T	CAP , ELECT	
C868	HCEA1CKS470T	CAP , ELECT	
C869	HCEA1CKS470T	CAP , ELECT	
C870	HCBS1H681KBT	CAP , CERAMIC	
C871	HCBS1H681KBT	CAP , CERAMIC	
C872	HCEA1CH331T	CAP , ELECT	
C873	HCEA1CH331T	CAP , ELECT	
C874	HCBS1H101KBT	CAP , CERAMIC	100PF 50V K
C875	HCBS1H473ZFT	CAP , CERAMIC	0.047UF 50V Z
C876	HCBS1H473ZFT	CAP , CERAMIC	0.047UF 50V Z
C877	HCBS1H473ZFT	CAP , CERAMIC	0.047UF 50V Z
C878	HCBS1H473ZFT	CAP , CERAMIC	0.047UF 50V Z
C880	HCEA1AH221T	CAP , ELECT	
C882	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z
C886	HCEA0JH102T	CAP , ELECT	1000UF 6.3V
C889	HCBS1H220JT	CAP , CERAMIC	
C890	HCBS1H220JT	CAP , CERAMIC	
C891	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C892	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C893	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C894	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C895	HCEA1AH471T	CAP , ELECT	470UF 10V
C896	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C897	HCEA1AH471T	CAP , ELECT	470UF 10V

AVR130 FRONT BD			
			4/10
Pos	Part number	1st part name	2nd part name
C900	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z
D724	HVD1SS133MT	DIODE	1SS133T-77
D728	HVD1SS133MT	DIODE	1SS133T-77
D729	HVD1SS133MT	DIODE	1SS133T-77
D730	HVD1SS133MT	DIODE	1SS133T-77
D761	HVD1SS133MT	DIODE	1SS133T-77
D774	HVD1SS133MT	DIODE	1SS133T-77
D775	HVD1SS133MT	DIODE	1SS133T-77
D776	KVD1N4003ST	DIODE	1N4003
D777	HVD1SS133MT	DIODE	1SS133T-77
D778	KVD1N4003ST	DIODE	1N4003
D779	HVD1SS133MT	DIODE	1SS133T-77
D783	HVD1SS133MT	DIODE	1SS133T-77
D784	HVD1SS133MT	DIODE	1SS133T-77
D785	HVD1SS133MT	DIODE	1SS133T-77
D786	HVDMTZJ5.6BT	DIODE , ZENER	
D787	HVDMTZJ5.6BT	DIODE , ZENER	
IC87	HVIRE5VL28CATZ	IC , RESET	
L702	HLQ02C100KT	COIL , AXAIL	
Q701	HVTKRC107MT	T.R	KRC107M
Q702	HVTKRC107MT	T.R	KRC107M
Q703	HVTKRC107MT	T.R	KRC107M
Q705	HVTKRC107MT	T.R	KRC107M
Q706	HVTKRC107MT	T.R	KRC107M
Q722	HVTKRA107MT	T.R	KRA107M
Q724	HVTKRC107MT	T.R	KRC107M
Q725	HVTKRC107MT	T.R	KRC107M
Q726	HVTKRC107MT	T.R	KRC107M
Q727	HVTKRC107MT	T.R	KRC107M
Q728	HVTKRC107MT	T.R	KRC107M
Q729	HVTKRC107MT	T.R	KRC107M
Q734	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q735	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q736	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q737	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q738	HVTKRC107MT	T.R	KRC107M
Q739	HVTKTA1271YT	T.R	KTA1271Y
Q743	HVTKRA107MT	T.R	KRA107M
R701	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R702	CRD20TJ1R0T	RES , CARBON	1 OHM 1/5W J
R704	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J
R705	CRD20TJ820T	RES , CARBON	82 OHM 1/5W J
R706	CRD20TJ820T	RES , CARBON	82 OHM 1/5W J
R707	CRD20TJ820T	RES , CARBON	82 OHM 1/5W J

AVR130 FRONT BD			
			5/10
Pos	Part number	1st part name	2nd part name
R708	CRD20TJ820T	RES , CARBON	82 OHM 1/5W J
R709	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J
R710	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J
R711	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J
R712	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J
R713	CRD20TJ332T	RES , CARBON	3.3K OHM 1/5W J
R714	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J
R715	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J
R716	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R717	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R718	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J
R719	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R721	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R723	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J
R724	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R725	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R726	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R727	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R728	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J
R730	CRD20TJ112T	RES,CABON	
R731	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R732	CRD20TJ202T	RES , CARBON	
R733	CRD20TJ272T	RES , CARBON	2.7K OHM 1/5W J
R734	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R735	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R736	CRD20TJ272T	RES , CARBON	2.7K OHM 1/5W J
R737	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J
R744	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R745	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R746	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R747	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R749	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R750	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R751	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R753	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R754	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J
R755	CRD20TJ182T	RES , CARBON	1.8K OHM 1/5W J
R756	CRD20TJ272T	RES , CARBON	2.7K OHM 1/5W J
R757	CRD20TJ332T	RES , CARBON	3.3K OHM 1/5W J
R758	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J
R759	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R760	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J
R761	CRD20TJ182T	RES , CARBON	1.8K OHM 1/5W J
R762	CRD20TJ272T	RES , CARBON	2.7K OHM 1/5W J

AVR130 FRONT BD			
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Pos	Part number	1st part name	2nd part name
R763	CRD20TJ332T	RES , CARBON	3.3K OHM 1/5W J
R764	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J
R765	CRD20TJ752T	RES , CARBON	7.5K OHM 1/5W J
R766	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R767	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J
R768	CRD20TJ182T	RES , CARBON	1.8K OHM 1/5W J
R769	CRD20TJ272T	RES , CARBON	2.7K OHM 1/5W J
R771	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R772	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R773	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R774	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J
R775	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J
R776	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J
R777	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J
R810	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J
R811	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J
R813	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J
R814	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J
R822	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J
R824	CRD20TJ820T	RES , CARBON	82 OHM 1/5W J
R825	CRD20TJ181T	RES , CARBON	180 OHM 1/5W J
R826	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R827	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R829	CRD20TJ184T	RES , CARBON	
R830	CRD20TJ184T	RES , CARBON	
R831	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J
R832	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J
R833	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R834	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R835	CRD20TJ184T	RES , CARBON	
R836	CRD20TJ184T	RES , CARBON	
R837	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J
R838	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J
R839	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J
R840	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J
R841	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J
R842	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J
R843	CRD20TJ105T	RES , CARBON	1M OHM 1/5W J
R844	CRD20TJ105T	RES , CARBON	1M OHM 1/5W J
R845	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J
R846	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J
R847	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R848	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R849	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J

AVR130 FRONT BD			
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Pos	Part number	1st part name	2nd part name
R850	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R851	CRD20TJ392T	RES , CARBON	
R852	CRD20TJ392T	RES , CARBON	
R853	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J
R854	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J
R855	CRD20TJ681T	RES , CARBON	680 OHM 1/5W J
R856	CRD20TJ681T	RES , CARBON	680 OHM 1/5W J
R857	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J
R858	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J
R864	CRD20TJ272T	RES , CARBON	2.7K OHM 1/5W J
R865	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R866	CRD20TJ272T	RES , CARBON	2.7K OHM 1/5W J
R868	CRD20TJ1R0T	RES , CARBON	1 OHM 1/5W J
R869	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R871	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J
R872	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J
R873	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J
R874	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J
R875	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R876	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R877	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R878	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R881	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R882	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R883	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R884	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R885	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R886	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R887	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R888	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R889	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R890	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R891	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R892	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J
R893	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J
R895	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J
R896	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J
R897	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J
R898	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J
R899	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J
R900	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J
R901	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J
R902	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J
R903	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J

AVR130 FRONT BD			
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Pos	Part number	1st part name	2nd part name
R904	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R905	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J
R906	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J
R907	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J
R908	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J
R909	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J
R910	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J
R911	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J
R912	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J
R913	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R914	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J
R915	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J
R917	CRD20TJ123T	RES , CARBON	12K OHM 1/5W J
R918	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J
R919	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J
S701	HST1A020ZT	SW , TACT	
S702	HST1A020ZT	SW , TACT	
S703	HST1A020ZT	SW , TACT	
S704	HST1A020ZT	SW , TACT	
S705	HST1A020ZT	SW , TACT	
S706	HST1A020ZT	SW , TACT	
S707	HST1A020ZT	SW , TACT	
S708	HST1A020ZT	SW , TACT	
S709	HST1A020ZT	SW , TACT	
S710	HST1A020ZT	SW , TACT	
S711	HST1A020ZT	SW , TACT	
S712	HST1A020ZT	SW , TACT	
S713	HST1A020ZT	SW , TACT	
S714	HST1A020ZT	SW , TACT	
S715	HST1A020ZT	SW , TACT	
S716	HST1A020ZT	SW , TACT	
S717	HST1A020ZT	SW , TACT	
S718	HST1A020ZT	SW , TACT	
S719	HST1A020ZT	SW , TACT	
S720	HST1A020ZT	SW , TACT	
BAT1	HABGP40BVH3A3H	BATTERY , RECHARGEABLE	GP40BBVH3A3H
BK71	CMD1A209	BRACKET , FLT	A4-92-1739
BK72	CMD1A209	BRACKET , FLT	A4-92-1739
BK73	CMD1A387	BRACKET , PCB	
BK74	CMD1A209	BRACKET , FLT	A4-92-1739
BN10	CWZAVR230BN10	WIRE ASS'Y (SHIELD)	
BN15	CWB2B906150EN	WIRE ASS'Y	
BN16	CWZAVR2550BN16	WIRE ASS'Y (SHIELD)	
BN18	CWZAVR125BN18	WIRE ASS'Y (SHIELD)	

AVR130 FRONT BD			
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Pos	Part number	1st part name	2nd part name
BN41	CWZAVR130BN41	WIRE ASS'Y (SHIELD)	
BN80	CWB2B911420EW	WIRE ASS'Y	
BN81	CWB2B908250BM	WIRE , ASS'Y	
BN84	CWB2B905080EN	WIRE ASS'Y	
BN85	CWB2B902090EN	WIRE ASS'Y	
BN87	CWZAVR2550BN87	WIRE ASS'Y (SHIELD)	
BN88	CWB2B904070EN	WIRE ASS'Y	
BN89	CWB2B905080EN	WIRE ASS'Y	
BN90	CWB2B902090EN	WIRE ASS'Y	
BN94	KJP13GB99ZM	CONNECTOR	MOLEX35237-1310
BN95	KJP08GB99ZM	CONNECTOR , HOUSING	MOLEX35237-0810
CN10	KJP04GB46ZM	WAFER	MOLEX 53015
CN11	KJP15GA98ZM	WAFER	MOLEX35336-1510
CN12	KJP15GA98ZM	WAFER	MOLEX35336-1510
CN15	KJP06GA19ZM	WAFER	MOLEX53014-0610
CN16	KJP08GB46ZM	WAFER	
CN72	KJP32GA161ZY	WAFER	YD200 SERIES
CN82	KJP06HA37ZM	WAFER	MOLEX42140-2206
CN84	KJP05GA19ZM	WAFER	MOLEX53014-0510
CN85	KJP02GA19ZM	WAFER	
CN86	KJP02GA89ZM	WAFER	MOLEX35328-02
CN87	KJP06GA19ZM	WAFER	MOLEX53014-0610
CN88	KJP04GA19ZM	WAFER	
CN89	KJP05GA19ZM	WAFER	MOLEX53014-0510
CN90	KJP02GA19ZM	WAFER	
CN91	KJP06HA37ZM	WAFER	MOLEX42140-2206
C853	KCKDKS472ME	CAP , CERAMIC(X1/Y2/SC)	0.0047UF/2.5KV
D702	CVD52CSBBCEAB2	BLUE L.E.D	
D703	CVD52CSBBCEAB2	BLUE L.E.D	
D704	CVD52CSBBCEAB2	BLUE L.E.D	
D706	CVD52CSBBCEAB2	BLUE L.E.D	
D707	CVD52CSBBCEAB2	BLUE L.E.D	
D723	CVD50BOGDWGA	L.E.D , 2 COLOR	
FIP1	HFLHCA18ML01	F.I.P	
IC71	BVISAA6579TV1	I.C , RDS FILTER TW	SAA6579TV1
IC72	BVIMB90F482APFG	IC , FLASH U-COM	FUJITSU
IC73	HRVRPM6938H4	SENSOR , REMOTE	RPM6938-H4
IC74	HVIS3F84BB	I.C , FLASH U-COM	S3F84BB
IC75	HVI74ACT04MTR	I.C , HEX	
IC76	HVITC74HCU04AFN	IC , INVERTER	TC74HCU04AFN
IC80	HVIHCF4053M013T	I.C	
IC81	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
IC82	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
IC83	HVI74ACT04MTR	I.C , HEX	

AVR130FRONT BD			
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Pos	Part number	1st part name	2nd part name
IC84	HVI74ACT04MTR	I.C , HEX	
IC85	HVIRH5VT18C	I.C , RESET	
IC86	HVINJM4556AL	I.C	NJM4556AL
IC88	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
JK81	CJJ4M041Y	JACK , BOARD (COAX)	
JK82	HJSTORX179L	MODULE , OPTICAL(RX)	TORX179L
JK83	CJJ2E026Z	JACK , HEADPHONE(SILVER PLATE)	
JK85	CJJ9M003Z	JACK , S-VIDEO	
JK86	CJJ4S023Y	JACK , BOARD	
JW82	CWZAVR2550JW82	WIRE , ASS'Y	
JW84	CWE8202110RV	WIRE, ASS'Y	
JW85	CWE8202070AA	WIRE ASS'Y	
SW01	CSH1A008ZV	SW , PUSH (MOMS)	
VR71	CVV2X05M104Z	RES , VARIABLE(BALANCE)	RK14128030214Y
VR72	CVV2X07C104Z	RES , VARIABLE(TONE)	RK14128030214C
VR73	CVV2X07C104Z	RES , VARIABLE(TONE)	RK14128030214C
VR74	HSR2A026Z	VR , ENCODER	
X701	HOX05000E160C	CRYSTAL	
X702	HOX04332E200C	CRYSTAL	
X703	HOX10000E220C	CRYSTAL	
AVR130 MAIN BD			
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Pos	Part number	1st part name	2nd part name
	COP11579E	MAIN PCB ASS'Y	
C501	HCEA1VH100T	CAP , ELECT	10UF 35V
C502	HCEA1VH100T	CAP , ELECT	10UF 35V
C503	HCEA1VH100T	CAP , ELECT	10UF 35V
C504	HCEA1VH100T	CAP , ELECT	10UF 35V
C505	HCEA1VH100T	CAP , ELECT	10UF 35V
C506	CCKT1H331KB	CAP , CERAMIC	330PF 50V KB
C507	CCKT1H331KB	CAP , CERAMIC	330PF 50V KB
C508	CCKT1H331KB	CAP , CERAMIC	330PF 50V KB
C509	CCKT1H331KB	CAP , CERAMIC	330PF 50V KB
C510	CCKT1H331KB	CAP , CERAMIC	330PF 50V KB
C561	HCEA1CH101T	CAP , ELECT	100UF 16V
C562	HCEA1CH101T	CAP , ELECT	100UF 16V
C563	HCEA1CH101T	CAP , ELECT	100UF 16V
C564	HCEA1CH101T	CAP , ELECT	100UF 16V
C565	HCEA1CH101T	CAP , ELECT	100UF 16V
C566	HCEA1CH101T	CAP , ELECT	100UF 16V
C567	HCEA1CH101T	CAP , ELECT	100UF 16V
C568	HCEA1CH101T	CAP , ELECT	100UF 16V
C569	HCEA1CH101T	CAP , ELECT	100UF 16V
C570	HCEA1CH101T	CAP , ELECT	100UF 16V

AVR130 MAIN BD			
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Pos	Part number	1st part name	2nd part name
C571	HCBS1H681KBT	CAP , CERAMIC	
C572	HCBS1H681KBT	CAP , CERAMIC	
C573	HCBS1H681KBT	CAP , CERAMIC	
C574	HCBS1H681KBT	CAP , CERAMIC	
C575	HCBS1H681KBT	CAP , CERAMIC	
C601	CCCT1H120JC	CAP , CERAMIC	12PF 50V JC
C602	CCCT1H120JC	CAP , CERAMIC	12PF 50V JC
C603	CCCT1H120JC	CAP , CERAMIC	12PF 50V JC
C604	CCCT1H120JC	CAP , CERAMIC	12PF 50V JC
C605	CCCT1H120JC	CAP , CERAMIC	12PF 50V JC
C606	CCCT1H330JC	CAP , CERAMIC	33PF 50V JC
C607	CCCT1H330JC	CAP , CERAMIC	33PF 50V JC
C608	CCCT1H330JC	CAP , CERAMIC	33PF 50V JC
C609	CCCT1H330JC	CAP , CERAMIC	33PF 50V JC
C610	CCCT1H330JC	CAP , CERAMIC	33PF 50V JC
C681	HCEA1HH100T	CAP , ELECT	10UF 50V
C682	HCEA1HH100T	CAP , ELECT	10UF 50V
C683	HCEA1HH100T	CAP , ELECT	10UF 50V
C684	HCEA1HH100T	CAP , ELECT	10UF 50V
C685	HCEA1HH100T	CAP , ELECT	10UF 50V
C726	CCKT1H221KB	CAP , MYLAR	220PF 50V KB
C900	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J
C901	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J
C905	CCKT1H223ZF	CAP , CERAMIC	0.022UF 50V ZF
C907	HCEA1CH101T	CAP , ELECT	100UF 16V
C908	CCKT1H223ZF	CAP , CERAMIC	0.022UF 50V ZF
C910	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J
C911	HCEA1CH471T	CAP , ELECT	
C912	HCEA1CH221T	CAP , ELECT	
C913	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V ZF
C918	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J
C919	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J
C923	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z
C924	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z
C925	HCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z
C939	HCEA1HH4R7T	CAP , ELECT	4.7UF 50V
C940	HCEA1AH471T	CAP , ELECT	470UF 10V
C971	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J
C973	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J
C974	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J
C980	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J
C981	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J
C990	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J
C991	HCEA1HH1R0T	CAP , ELECT	1UF 50V

AVR130 MAIN BD			
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Pos	Part number	1st part name	2nd part name
C992	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J
C993	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J
C995	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J
C997	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J
C999	CCKT1H223ZF	CAP , CERAMIC	0.022UF 50V ZF
D501	HVD1SS133MT	DIODE	1SS133T-77
D502	HVD1SS133MT	DIODE	1SS133T-77
D503	HVD1SS133MT	DIODE	1SS133T-77
D504	HVD1SS133MT	DIODE	1SS133T-77
D505	HVD1SS133MT	DIODE	1SS133T-77
D581	HVD1SS133MT	DIODE	1SS133T-77
D582	HVD1SS133MT	DIODE	1SS133T-77
D583	HVD1SS133MT	DIODE	1SS133T-77
D584	HVD1SS133MT	DIODE	1SS133T-77
D585	HVD1SS133MT	DIODE	1SS133T-77
D901	KVD1N4003ST	DIODE	1N4003
D902	HVD1SS133MT	DIODE	1SS133T-77
D911	HVD1SS133MT	DIODE	1SS133T-77
D912	HVD1SS133MT	DIODE	1SS133T-77
D914	HVD1SS133MT	DIODE	1SS133T-77
D917	HVD1SS133MT	DIODE	1SS133T-77
D953	HVD1SS133MT	DIODE	1SS133T-77
D954	KVD1N4003SRT	DIODE TW	1N4003
D955	KVD1N4003SRT	DIODE TW	1N4003
D961	KVD1N4003ST	DIODE	1N4003
D962	KVD1N4003ST	DIODE	1N4003
D963	KVD1N4003ST	DIODE	1N4003
D977	HVD1SS133MT	DIODE	1SS133T-77
D978	HVD1SS133MT	DIODE	1SS133T-77
Q501	HVTKTA1268GRT	T.R	KTA1268GR
Q502	HVTKTA1268GRT	T.R	KTA1268GR
Q503	HVTKTA1268GRT	T.R	KTA1268GR
Q504	HVTKTA1268GRT	T.R	KTA1268GR
Q505	HVTKTA1268GRT	T.R	KTA1268GR
Q511	HVTKTC3200GRT	T.R	KTC3200GR
Q512	HVTKTC3200GRT	T.R	KTC3200GR
Q513	HVTKTC3200GRT	T.R	KTC3200GR
Q514	HVTKTC3200GRT	T.R	KTC3200GR
Q515	HVTKTC3200GRT	T.R	KTC3200GR
Q516	HVTKTC3200GRT	T.R	KTC3200GR
Q517	HVTKTC3200GRT	T.R	KTC3200GR
Q518	HVTKTC3200GRT	T.R	KTC3200GR
Q519	HVTKTC3200GRT	T.R	KTC3200GR
Q520	HVTKTC3200GRT	T.R	KTC3200GR

AVR130 MAIN BD			
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Pos	Part number	1st part name	2nd part name
Q541	HVTKTC3198YT	T.R	
Q542	HVTKTC3198YT	T.R	
Q543	HVTKTC3198YT	T.R	
Q544	HVTKTC3198YT	T.R	
Q545	HVTKTC3198YT	T.R	
Q556	HVTKTC3200GRT	T.R	KTC3200GR
Q557	HVTKTC3200GRT	T.R	KTC3200GR
Q558	HVTKTC3200GRT	T.R	KTC3200GR
Q559	HVTKTC3200GRT	T.R	KTC3200GR
Q560	HVTKTC3200GRT	T.R	KTC3200GR
Q561	HVTKTC3200GRT	T.R	KTC3200GR
Q562	HVTKTC3200GRT	T.R	KTC3200GR
Q563	HVTKTC3200GRT	T.R	KTC3200GR
Q564	HVTKTC3200GRT	T.R	KTC3200GR
Q565	HVTKTC3200GRT	T.R	KTC3200GR
Q601	HVTKTA1268GRT	T.R	KTA1268GR
Q602	HVTKTA1268GRT	T.R	KTA1268GR
Q603	HVTKTA1268GRT	T.R	KTA1268GR
Q604	HVTKTA1268GRT	T.R	KTA1268GR
Q605	HVTKTA1268GRT	T.R	KTA1268GR
Q681	KVTKSC2785YT	T.R	KSC2785Y
Q682	KVTKSC2785YT	T.R	KSC2785Y
Q683	KVTKSC2785YT	T.R	KSC2785Y
Q684	KVTKSC2785YT	T.R	KSC2785Y
Q685	KVTKSC2785YT	T.R	KSC2785Y
Q706	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q901	KVTKSC2785YT	T.R	KSC2785Y
Q938	HVTKRA107MT	T.R	KRA107M
Q939	HVTKRA107MT	T.R	KRA107M
Q942	KVTKSC2785YT	T.R	KSC2785Y
Q943	KVTKSC2785YT	T.R	KSC2785Y
Q951	HVTKRC107MT	T.R	KRC107M
Q952	HVTKRA107MT	T.R	KRA107M
Q960	HVTKRC107MT	T.R	KRC107M
Q961	HVTKTA1024YT	T.R	
Q969	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q970	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q971	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q972	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q973	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q991	HVTKRC107MT	T.R	KRC107M
Q992	HVTKRA107MT	T.R	KRA107M
R501	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J
R502	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J

AVR130 MAIN BD			
			5/11
Pos	Part number	1st part name	2nd part name
R503	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J
R504	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J
R505	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J
R506	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J
R507	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J
R508	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J
R509	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J
R510	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J
R511	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J
R512	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J
R513	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J
R514	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J
R515	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J
R516	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J
R517	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J
R518	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J
R519	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J
R520	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J
R521	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J
R522	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J
R523	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J
R524	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J
R525	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J
R531	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J
R532	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J
R533	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J
R534	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J
R535	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J
R536	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J
R537	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J
R538	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J
R539	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J
R540	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J
R541	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J
R542	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J
R543	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J
R544	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J
R545	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J
R556	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J
R557	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J
R558	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J
R559	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J
R560	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J
R561	CRD20TJ202T	RES , CARBON	

AVR130 MAIN BD			
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Pos	Part number	1st part name	2nd part name
R562	CRD20TJ202T	RES , CARBON	
R563	CRD20TJ202T	RES , CARBON	
R564	CRD20TJ202T	RES , CARBON	
R565	CRD20TJ202T	RES , CARBON	
R566	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R567	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R568	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R569	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R570	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R571	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R572	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R573	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R574	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R575	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R576	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J
R577	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J
R578	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J
R579	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J
R580	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J
R581	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R582	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R583	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R584	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R585	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R586	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R587	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R588	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R589	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R590	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R591	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R592	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R593	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R594	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R595	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R596	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R597	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R598	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R599	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R600	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R601	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R602	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R603	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R604	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R605	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J

AVR130 MAIN BD			
			7/11
Pos	Part number	1st part name	2nd part name
R606	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R607	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R608	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R609	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R610	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R631	KRD25FJ180T	RES , CARBON	
R632	KRD25FJ180T	RES , CARBON	
R633	KRD25FJ180T	RES , CARBON	
R634	KRD25FJ180T	RES , CARBON	
R635	KRD25FJ180T	RES , CARBON	
R636	KRD25FJ180T	RES , CARBON	
R637	KRD25FJ180T	RES , CARBON	
R638	KRD25FJ180T	RES , CARBON	
R639	KRD25FJ180T	RES , CARBON	
R640	KRD25FJ180T	RES , CARBON	
R646	KRD25FJ3R3T	RES , CARBON	
R647	KRD25FJ3R3T	RES , CARBON	
R648	KRD25FJ3R3T	RES , CARBON	
R649	KRD25FJ3R3T	RES , CARBON	
R650	KRD25FJ3R3T	RES , CARBON	
R651	KRD25FJ3R3T	RES , CARBON	
R652	KRD25FJ3R3T	RES , CARBON	
R653	KRD25FJ3R3T	RES , CARBON	
R654	KRD25FJ3R3T	RES , CARBON	
R655	KRD25FJ3R3T	RES , CARBON	
R666	CRD25TJ470T	RES , CARBON	
R667	CRD25TJ470T	RES , CARBON	
R668	CRD25TJ470T	RES , CARBON	
R669	CRD25TJ470T	RES , CARBON	
R670	CRD25TJ470T	RES , CARBON	
R671	CRD20TJ911T	RES , CARBON	910 OHM 1/5W J
R672	CRD20TJ911T	RES , CARBON	910 OHM 1/5W J
R673	CRD20TJ911T	RES , CARBON	910 OHM 1/5W J
R674	CRD20TJ911T	RES , CARBON	910 OHM 1/5W J
R675	CRD20TJ911T	RES , CARBON	910 OHM 1/5W J
R676	CRD20TJ182T	RES , CARBON	1.8K OHM 1/5W J
R677	CRD20TJ182T	RES , CARBON	1.8K OHM 1/5W J
R678	CRD20TJ182T	RES , CARBON	1.8K OHM 1/5W J
R679	CRD20TJ182T	RES , CARBON	1.8K OHM 1/5W J
R680	CRD20TJ182T	RES , CARBON	1.8K OHM 1/5W J
R681	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J
R682	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J
R683	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J
R684	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J

AVR130 MAIN BD

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Pos	Part number	1st part name	2nd part name
R685	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J
R686	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R687	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R688	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R689	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R690	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R696	CRD25TJ470T	RES , CARBON	
R697	CRD25TJ470T	RES , CARBON	
R698	CRD25TJ470T	RES , CARBON	
R699	CRD25TJ470T	RES , CARBON	
R700	CRD25TJ470T	RES , CARBON	
R706	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R716	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J
R726	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J
R771	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R772	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R773	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R774	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R775	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R781	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R782	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R783	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R784	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R785	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R900	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R901	CRD25TJ393T	RES , CARBON	
R902	CRD25TJ393T	RES , CARBON	
R903	CRD25TJ393T	RES , CARBON	
R906	CRD25TJ393T	RES , CARBON	
R910	CRD20TJ105T	RES , CARBON	1M OHM 1/5W J
R911	CRD25TJ680T	RES , CARBON	68 OHM 1/4W J
R917	CRD25TJ393T	RES , CARBON	
R918	CRD25TJ393T	RES , CARBON	
R919	CRD25TJ393T	RES , CARBON	
R920	CRD25TJ393T	RES , CARBON	
R932	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R939	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J
R940	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J
R941	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R942	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R943	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R944	CRD25TJ223T	RES , CARBON	22K OHM 1/4W J
R945	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R946	CRD25TJ223T	RES , CARBON	22K OHM 1/4W J

AVR130 MAIN BD			
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Pos	Part number	1st part name	2nd part name
R947	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J
R955	CRD20TJ393T	RES , CARBON	
R956	CRD20TJ394T	RES , CARBON	
R957	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J
R960	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J
R961	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J
R962	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J
R963	CRD20TJ105T	RES , CARBON	1M OHM 1/5W J
R966	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J
R969	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J
R970	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J
R971	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J
R972	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J
R973	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J
R974	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J
R975	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J
R976	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J
R977	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J
R978	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J
R979	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J
R980	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J
R981	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J
R982	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J
R983	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J
R986	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R987	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J
R988	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J
R991	CRD20TJ822T	RES , CARBON	8.2K OHM 1/5W J
R992	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J
R998	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
	CMD1A387	BRACKET , PCB	
	CMYAVR130CC	HEAT SINK ASS'Y	
	CHD1A012Z	SCREW , SPECIAL	
	CMD1A398	BRACKET , PCB	AG-D9320
	CMD1A417	BRACKET , PCB	AG-D8900
	CMY1A217	HEAT SINK	
	CTB3+8J	SCREW	
	CTW3+10J	SCREW	
	CTW3+12J	SCREW	
	K8AYG6260	COMPOUND , SILICONE	
Q652	BVT2SB1560-OKM	T.R , POWER	2SB1560
Q653	BVT2SB1560-OKM	T.R , POWER	2SB1560
Q654	BVT2SB1560-OKM	T.R , POWER	2SB1560
Q655	BVT2SB1560-OKM	T.R , POWER	2SB1560

AVR130 MAIN BD			
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Pos	Part number	1st part name	2nd part name
Q657	BVT2SD2390-OKM	T.R , POWER	2SD2390
Q658	BVT2SD2390-OKM	T.R , POWER	2SD2390
Q659	BVT2SD2390-OKM	T.R , POWER	2SD2390
Q660	BVT2SD2390-OKM	T.R , POWER	2SD2390
Q661	BVT2SB1560-OKM	T.R , POWER	2SB1560
Q670	BVT2SD2390-OKM	T.R , POWER	2SD2390
	CTW3+8J	SCREW	
BN19	CWB3FE03250UP	WIRE ASS'Y	
BN20	CWB3FB43280UP	WIRE ASS'Y	
BN82	CWB1C902050EN	WIRE ASS'Y	
BN83	CWB1C902050EN	WIRE ASS'Y	
BN84	CWB1C902050EN	WIRE ASS'Y	
BN85	CWB1C902050EN	WIRE ASS'Y	
BN86	CWB1C902050EN	WIRE ASS'Y	
BN98	BJP08GA130ZK	WAFER	
BN99	CWB1C902050EN	WIRE ASS'Y	
CN61	KJP02GA01ZM	WAFER	MOLEX 5267-02A
CN62	KJP02GA01ZM	WAFER	MOLEX 5267-02A
CN63	KJP02GA01ZM	WAFER	MOLEX 5267-02A
CN64	KJP02GA01ZM	WAFER	MOLEX 5267-02A
CN65	KJP02GA01ZM	WAFER	MOLEX 5267-02A
CN80	KJP11GA19ZM	WAFER	MOLEX-53014
CN91	KJP03GA89ZM	WAFER	MOLEX35328-0310
CN94	KJP13GA98ZM	WAFER	MOLEX35336-1310
CN95	KJP08GA98ZM	WAFER	MOLEX35336-0810
CN99	KJP02GA19ZM	WAFER	
C631	CCEA1JH221E	CAP , ELECT	
C632	CCEA1JH221E	CAP , ELECT	
C633	CCEA1JH221E	CAP , ELECT	
C634	CCEA1JH221E	CAP , ELECT	
C635	CCEA1JH221E	CAP , ELECT	
C636	CCEA1JH221E	CAP , ELECT	
C637	CCEA1JH221E	CAP , ELECT	
C638	CCEA1JH221E	CAP , ELECT	
C639	CCEA1JH221E	CAP , ELECT	
C640	CCEA1JH221E	CAP , ELECT	
C902	CCET50VKL4472NK	CAP , ELECT	4700UF/50V
C904	KCKDKS472ME	CAP , CERAMIC(X1/Y2/SC)	0.0047UF/2.5KV
C906	HCEA1EH102E	CAP , ELECT	1000UF 25V
C909	CCET50VKL4472NK	CAP , ELECT	4700UF/50V
C915	CCET50VKL4682NK	CAP , ELECT	6800UF/50V
C916	CCET50VKL4682NK	CAP , ELECT	6800UF/50V
ET01	CNE75	PLATE , EARTH	
ET02	CMD1A387	BRACKET , PCB	

AVR130 MAIN BD			
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Pos	Part number	1st part name	2nd part name
ET03	CNE75	PLATE , EARTH	
IC94	HVIMC7805C	I.C, REGULATOR	KA7805-ABTU
JK90	CJJ4M040Z	JACK , BOARD (SW)	
JK91	CJJ5R006Z	TERMINAL , SPEAKER	
JK92	CJJ5P020Z	TERMINAL , SPEAKER	
JW90	CWEE212120VV	WIRE ASS'Y	
JW91	CWE8212180VV	WIRE ASS'Y	
JW92	CWEE212120VV	WIRE ASS'Y	
JW99	CWE8202150AA	WIRE ASS'Y	
L501	CLEY0R5KAK	COIL , SPEAKER	0.5UH K
L502	CLEY0R5KAK	COIL , SPEAKER	0.5UH K
L503	CLEY0R5KAK	COIL , SPEAKER	0.5UH K
L504	CLEY0R5KAK	COIL , SPEAKER	0.5UH K
L505	CLEY0R5KAK	COIL , SPEAKER	0.5UH K
Q858	HVT2SA1360O	T.R	2SA1360O
Q871	HVT2SA1360O	T.R	2SA1360O
Q872	HVT2SA1360O	T.R	2SA1360O
Q874	HVT2SA1360O	T.R	2SA1360O
Q875	HVT2SA1360O	T.R	2SA1360O
Q881	HVT2SC3423O	T.R	2SC3423O
Q882	HVT2SC3423O	T.R	2SC3423O
Q883	HVT2SC3423O	T.R	2SC3423O
Q884	HVT2SC3423O	T.R	2SC3423O
Q885	HVT2SC3423O	T.R	2SC3423O
RY94	HSL1A008ZE	RELAY	SDT-S-112DMR
R656	CRF5EKR27HX2	RES , CEMENT	0.27OHM(*2) ,5W
R657	CRF5EKR27HX2	RES , CEMENT	0.27OHM(*2) ,5W
R658	CRF5EKR27HX2	RES , CEMENT	0.27OHM(*2) ,5W
R659	CRF5EKR27HX2	RES , CEMENT	0.27OHM(*2) ,5W
R660	CRF5EKR27HX2	RES , CEMENT	0.27OHM(*2) ,5W
R905	CRG1ANJ100H	RES , METAL OXIDE FILM	
R990	CRG1ANJ100H	RES , METAL OXIDE FILM	
R993	CRG1ANJ100H	RES , METAL OXIDE FILM	
R995	CRG1ANJ100H	RES , METAL OXIDE FILM	
R997	CRG1ANJ100H	RES , METAL OXIDE FILM	
R999	CRG1ANJ100H	RES , METAL OXIDE FILM	
TH91	KRTP42T7D330B	THERMAL SENSOR , POSISTOR	P42T7D330BW20
T902	CLT5J033ZE	TRANS , SUB	

AVR130 INPUT			
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Pos	Part number	1st part name	2nd part name
	COP11580D	INPUT PCB ASS'Y	
C105	HCUS1H223KC	CAP , CHIP	
C106	HCUS1H223KC	CAP , CHIP	
C201	HCUS1H221JA	CAP , CHIP	
C202	HCUS1H221JA	CAP , CHIP	
C203	HCUS1H221JA	CAP , CHIP	
C204	HCUS1H221JA	CAP , CHIP	
C205	HCUS1H221JA	CAP , CHIP	
C206	HCUS1H221JA	CAP , CHIP	
C211	HCUS1H221JA	CAP , CHIP	
C212	HCUS1H221JA	CAP , CHIP	
C213	HCUS1H221JA	CAP , CHIP	
C214	HCUS1H221JA	CAP , CHIP	
C215	HCUS1H221JA	CAP , CHIP	
C216	HCUS1H221JA	CAP , CHIP	
C217	HCUS1H221JA	CAP , CHIP	
C218	HCUS1H221JA	CAP , CHIP	
C219	HCUS1H221JA	CAP , CHIP	
C220	HCUS1H221JA	CAP , CHIP	
C221	HCUS1H221JA	CAP , CHIP	
C222	HCUS1H221JA	CAP , CHIP	
C223	HCUS1H221JA	CAP , CHIP	
C224	HCUS1H221JA	CAP , CHIP	
C241	HCUS1H181JA	CAP , CHIP	
C242	HCUS1H471JA	CAP , CHIP	
C253	HCUS1H181JA	CAP , CHIP	
C254	HCUS1H471JA	CAP , CHIP	
C255	HCUS1H223KC	CAP , CHIP	
C256	HCUS1H223KC	CAP , CHIP	
C270	HCUS1H181JA	CAP , CHIP	
C271	HCUS1H471JA	CAP , CHIP	
C291	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C292	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C294	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C295	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C296	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C297	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C317	HCUS1H223KC	CAP , CHIP	
C318	HCUS1H223KC	CAP , CHIP	
C319	HCUS1H223KC	CAP , CHIP	
C320	HCUS1H223KC	CAP , CHIP	

AVR130 INPUT			
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Pos	Part number	1st part name	2nd part name
C321	HCUS1H561JA	CAP , CHIP	
C322	HCUS1H561JA	CAP , CHIP	
C323	HCUS1H561JA	CAP , CHIP	
C324	HCUS1H561JA	CAP , CHIP	
C325	HCUS1H561JA	CAP , CHIP	
C326	HCUS1H561JA	CAP , CHIP	
C327	HCUS1H561JA	CAP , CHIP	
C328	HCUS1H561JA	CAP , CHIP	
C329	HCUS1H561JA	CAP , CHIP	
C330	HCUS1H561JA	CAP , CHIP	
C331	HCUS1H561JA	CAP , CHIP	
C332	HCUS1H561JA	CAP , CHIP	
C333	HCUS1H561JA	CAP , CHIP	
C334	HCUS1H561JA	CAP , CHIP	
C335	HCUS1H561JA	CAP , CHIP	
C336	HCUS1H561JA	CAP , CHIP	
C337	HCUS1H223KC	CAP , CHIP	
C338	HCUS1H223KC	CAP , CHIP	
C339	HCUS1H223KC	CAP , CHIP	
C340	HCUS1H223KC	CAP , CHIP	
C371	HCUS1H221JA	CAP , CHIP	
C372	HCUS1H221JA	CAP , CHIP	
C373	HCUS1H221JA	CAP , CHIP	
C374	HCUS1H221JA	CAP , CHIP	
C375	HCUS1H223KC	CAP , CHIP	
C376	HCUS1H223KC	CAP , CHIP	
C378	HCUS1H223KC	CAP , CHIP	
C379	HCUS1H223KC	CAP , CHIP	
C381	HCUS1H561JA	CAP , CHIP	
C382	HCUS1H223KC	CAP , CHIP	
C383	HCUS1H223KC	CAP , CHIP	
C413	HCUS1H223KC	CAP , CHIP	
C414	HCUS1H223KC	CAP , CHIP	
C415	HCUS1H223KC	CAP , CHIP	
C416	HCUS1H223KC	CAP , CHIP	
C417	HCUS1H223KC	CAP , CHIP	
C418	HCUS1H223KC	CAP , CHIP	
C425	HCUS1H151JA	CAP , CHIP , 150PF JA	1608 SIZE
C427	HCUS1H151JA	CAP , CHIP , 150PF JA	1608 SIZE
C428	HCUS1H151JA	CAP , CHIP , 150PF JA	1608 SIZE
C471	HCUS1H181JA	CAP , CHIP	
C472	HCUS1H181JA	CAP , CHIP	
C474	HCUS1H181JA	CAP , CHIP	
C721	HCUS1H270JA	CAP , CHIP , 27PF JA	1608 SIZE

AVR130 INPUT

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Pos	Part number	1st part name	2nd part name
C722	HCUS1H270JA	CAP , CHIP , 27PF JA	1608 SIZE
C723	HCUS1H270JA	CAP , CHIP , 27PF JA	1608 SIZE
C724	HCUS1H270JA	CAP , CHIP , 27PF JA	1608 SIZE
C726	HCUS1H473ZF	CAP , CHIP	
C727	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C729	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C730	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C731	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C733	HCUS1H223KC	CAP , CHIP	
C734	HCUS1H101JA	CAP , CHIP	
C735	HCUS1H101JA	CAP , CHIP	
C736	HCUS1H101JA	CAP , CHIP	
C737	HCUS1H101JA	CAP , CHIP	
C738	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C739	HCUS1H330JA	CAP , CHIP	
C740	HCUS1H330JA	CAP , CHIP	
C742	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C743	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C744	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C746	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C747	HCUS1H223KC	CAP , CHIP	
C748	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C750	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C751	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C753	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C755	HCUS1H223KC	CAP , CHIP	
C756	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C758	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C760	HCUS1H471JA	CAP , CHIP	
C761	HCUS1H103KC	CAP , CHIP	
C762	HCUS1H120JA	CAP , CHIP	
C763	HCUS1H120JA	CAP , CHIP	
C764	HCUS1H102KC	CAP , CHIP	
C765	HCUS1H101JA	CAP , CHIP	
C766	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C767	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C769	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C771	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C773	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C774	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C775	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C777	HCUS1H473ZF	CAP , CHIP	
C779	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C780	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE

AVR130 INPUT			
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Pos	Part number	1st part name	2nd part name
C783	HCUS1H473ZF	CAP , CHIP	
C784	HCUS1E104ZF	CAP , CHIP , 0.1UF ZF	1608 SIZE
C787	HCUS1H473ZF	CAP , CHIP	
D703	HVDRB160L60TE25	DIODE , SCHOTTKY BARRIER HK	RB160L-60TE25
IC13	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
IC23	HVITC9164AF	I.C , FUNCTION	TC9164AF
IC24	HVITC9163AF	I.C , FUNCTION	TC9163AF
IC25	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
IC26	HVITC9162AF	I.C , FUNCTION	TC9162AF
IC31	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
IC32	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
IC33	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
IC34	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
IC35	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
IC36	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
IC37	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
IC42	HVITC9459F	I.C , VOLUME	
IC43	HVITC9459F	I.C , VOLUME	
IC44	HVITC9459F	I.C , VOLUME	
IC46	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
IC47	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
IC48	HVINJM2068MDTE1	I.C , OP AMP	NJM2068MD-TE1
IC72	HVITC74HCU04AFN	IC , INVERTER	TC74HCU04AFN
IC73	HVIAK4114VQ	IC , DIR	
IC74	HVIAK4358VQ	I.C , DAC(8CH)	
IC75	HVICS493263-CLG	I.C , DSP HK	CS493263-CLG
IC76	HVIAK5381VT	I.C , ADC	
R101	HRJ10DJ562T	RES , CHIP	
R102	HRJ10DJ562T	RES , CHIP	
R103	HRJ10DJ682T	RES , CHIP	1608 SIZE
R104	HRJ10DJ682T	RES , CHIP	1608 SIZE
R105	HRJ10DJ151T	RES , CHIP	
R106	HRJ10DJ151T	RES , CHIP	
R107	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R108	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R201	HRJ10DJ471T	RES , CHIP	
R202	HRJ10DJ471T	RES , CHIP	
R203	HRJ10DJ471T	RES , CHIP	
R204	HRJ10DJ471T	RES , CHIP	
R205	HRJ10DJ471T	RES , CHIP	
R206	HRJ10DJ471T	RES , CHIP	
R211	HRJ10DJ471T	RES , CHIP	
R212	HRJ10DJ471T	RES , CHIP	
R213	HRJ10DJ471T	RES , CHIP	

AVR130 INPUT			
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Pos	Part number	1st part name	2nd part name
R214	HRJ10DJ471T	RES , CHIP	
R215	HRJ10DJ471T	RES , CHIP	
R216	HRJ10DJ471T	RES , CHIP	
R217	HRJ10DJ471T	RES , CHIP	
R218	HRJ10DJ471T	RES , CHIP	
R219	HRJ10DJ471T	RES , CHIP	
R220	HRJ10DJ471T	RES , CHIP	
R221	HRJ10DJ471T	RES , CHIP	
R222	HRJ10DJ471T	RES , CHIP	
R223	HRJ10DJ471T	RES , CHIP	
R224	HRJ10DJ272T	RES , CHIP	
R227	HRJ10DJ474T	RES , CHIP	1608 SIZE
R228	HRJ10DJ474T	RES , CHIP	1608 SIZE
R229	HRJ10DJ474T	RES , CHIP	1608 SIZE
R230	HRJ10DJ474T	RES , CHIP	1608 SIZE
R231	HRJ10DJ474T	RES , CHIP	1608 SIZE
R232	HRJ10DJ474T	RES , CHIP	1608 SIZE
R237	HRJ10DJ474T	RES , CHIP	1608 SIZE
R238	HRJ10DJ474T	RES , CHIP	1608 SIZE
R239	HRJ10DJ474T	RES , CHIP	1608 SIZE
R240	HRJ10DJ474T	RES , CHIP	1608 SIZE
R241	HRJ10DJ474T	RES , CHIP	1608 SIZE
R242	HRJ10DJ474T	RES , CHIP	1608 SIZE
R243	HRJ10DJ474T	RES , CHIP	1608 SIZE
R244	HRJ10DJ474T	RES , CHIP	1608 SIZE
R245	HRJ10DJ474T	RES , CHIP	1608 SIZE
R246	HRJ10DJ474T	RES , CHIP	1608 SIZE
R247	HRJ10DJ474T	RES , CHIP	1608 SIZE
R248	HRJ10DJ474T	RES , CHIP	1608 SIZE
R249	HRJ10DJ474T	RES , CHIP	1608 SIZE
R250	HRJ10DJ103T	RES , CHIP	
R265	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R267	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R268	HRJ10DJ184T	RES , CHIP	1608 SIZE
R269	HRJ10DJ184T	RES , CHIP	1608 SIZE
R270	HRJ10DJ472T	RES , CHIP (1/10W) ,4.7K OHM J	1608 SIZE
R271	HRJ10DJ472T	RES , CHIP (1/10W) ,4.7K OHM J	1608 SIZE
R272	HRJ10DJ472T	RES , CHIP (1/10W) ,4.7K OHM J	1608 SIZE
R273	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R274	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R275	HRJ10DJ472T	RES , CHIP (1/10W) ,4.7K OHM J	1608 SIZE
R276	HRJ10DJ472T	RES , CHIP (1/10W) ,4.7K OHM J	1608 SIZE
R277	HRJ10DJ472T	RES , CHIP (1/10W) ,4.7K OHM J	1608 SIZE
R278	HRJ10DJ104T	RES , CHIP	

AVR130 INPUT			
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Pos	Part number	1st part name	2nd part name
R279	HRJ10DJ104T	RES , CHIP	
R280	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R281	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R283	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R284	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R285	HRJ10DJ184T	RES , CHIP	1608 SIZE
R286	HRJ10DJ184T	RES , CHIP	1608 SIZE
R288	HRJ10DJ184T	RES , CHIP	1608 SIZE
R289	HRJ10DJ184T	RES , CHIP	1608 SIZE
R291	HRJ10DJ472T	RES , CHIP (1/10W) ,4.7K OHM J	1608 SIZE
R292	HRJ10DJ472T	RES , CHIP (1/10W) ,4.7K OHM J	1608 SIZE
R293	HRJ10DJ472T	RES , CHIP (1/10W) ,4.7K OHM J	1608 SIZE
R301	HRJ10DJ332T	RES , CHIP	
R302	HRJ10DJ332T	RES , CHIP	
R303	HRJ10DJ332T	RES , CHIP	
R304	HRJ10DJ332T	RES , CHIP	
R305	HRJ10DJ332T	RES , CHIP	
R306	HRJ10DJ332T	RES , CHIP	
R307	HRJ10DJ332T	RES , CHIP	
R308	HRJ10DJ332T	RES , CHIP	
R309	HRJ10DJ332T	RES , CHIP	
R310	HRJ10DJ332T	RES , CHIP	
R311	HRJ10DJ332T	RES , CHIP	
R312	HRJ10DJ332T	RES , CHIP	
R313	HRJ10DJ332T	RES , CHIP	
R314	HRJ10DJ332T	RES , CHIP	
R315	HRJ10DJ332T	RES , CHIP	
R316	HRJ10DJ332T	RES , CHIP	
R317	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R318	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R319	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R320	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R321	HRJ10DJ562T	RES , CHIP	
R322	HRJ10DJ562T	RES , CHIP	
R323	HRJ10DJ562T	RES , CHIP	
R324	HRJ10DJ562T	RES , CHIP	
R325	HRJ10DJ562T	RES , CHIP	
R326	HRJ10DJ562T	RES , CHIP	
R327	HRJ10DJ223T	RES , CHIP	1608 SIZE
R328	HRJ10DJ223T	RES , CHIP	1608 SIZE
R329	HRJ10DJ562T	RES , CHIP	
R330	HRJ10DJ562T	RES , CHIP	
R331	HRJ10DJ562T	RES , CHIP	
R332	HRJ10DJ562T	RES , CHIP	

AVR130 INPUT			
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Pos	Part number	1st part name	2nd part name
R333	HRJ10DJ562T	RES , CHIP	
R334	HRJ10DJ562T	RES , CHIP	
R335	HRJ10DJ562T	RES , CHIP	
R336	HRJ10DJ562T	RES , CHIP	
R337	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R338	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R339	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R340	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R341	HRJ10DJ122T	RES , CHIP	
R342	HRJ10DJ122T	RES , CHIP	
R343	HRJ10DJ122T	RES , CHIP	
R344	HRJ10DJ122T	RES , CHIP	
R345	HRJ10DJ122T	RES , CHIP	
R346	HRJ10DJ122T	RES , CHIP	
R347	HRJ10DJ122T	RES , CHIP	
R348	HRJ10DJ122T	RES , CHIP	
R349	HRJ10DJ122T	RES , CHIP	
R350	HRJ10DJ122T	RES , CHIP	
R351	HRJ10DJ122T	RES , CHIP	
R352	HRJ10DJ122T	RES , CHIP	
R353	HRJ10DJ122T	RES , CHIP	
R354	HRJ10DJ122T	RES , CHIP	
R355	HRJ10DJ122T	RES , CHIP	
R356	HRJ10DJ122T	RES , CHIP	
R361	HRJ10DJ104T	RES , CHIP	
R362	HRJ10DJ104T	RES , CHIP	
R363	HRJ10DJ104T	RES , CHIP	
R364	HRJ10DJ104T	RES , CHIP	
R365	HRJ10DJ104T	RES , CHIP	
R366	HRJ10DJ104T	RES , CHIP	
R367	HRJ10DJ104T	RES , CHIP	
R368	HRJ10DJ104T	RES , CHIP	
R371	HRJ10DJ332T	RES , CHIP	
R372	HRJ10DJ332T	RES , CHIP	
R373	HRJ10DJ332T	RES , CHIP	
R374	HRJ10DJ332T	RES , CHIP	
R375	HRJ10DJ332T	RES , CHIP	
R376	HRJ10DJ332T	RES , CHIP	
R377	HRJ10DJ332T	RES , CHIP	
R378	HRJ10DJ332T	RES , CHIP	
R379	HRJ10DJ332T	RES , CHIP	
R380	HRJ10DJ332T	RES , CHIP	
R381	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R382	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE

AVR130 INPUT			
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Pos	Part number	1st part name	2nd part name
R383	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R384	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R385	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R386	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R389	HRJ10DJ332T	RES , CHIP	
R390	HRJ10DJ332T	RES , CHIP	
R391	HRJ10DJ105T	RES , CHIP (1/10W)	1608 SIZE
R392	HRJ10DJ105T	RES , CHIP (1/10W)	1608 SIZE
R393	HRJ10DJ332T	RES , CHIP	
R394	HRJ10DJ153T	RES , CHIP	
R395	HRJ10DJ153T	RES , CHIP	
R396	HRJ10DJ332T	RES , CHIP	
R397	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R398	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R403	HRJ10DJ184T	RES , CHIP	1608 SIZE
R404	HRJ10DJ184T	RES , CHIP	1608 SIZE
R405	HRJ10DJ184T	RES , CHIP	1608 SIZE
R406	HRJ10DJ184T	RES , CHIP	1608 SIZE
R407	HRJ10DJ184T	RES , CHIP	1608 SIZE
R408	HRJ10DJ184T	RES , CHIP	1608 SIZE
R415	HRJ10DJ562T	RES , CHIP	
R416	HRJ10DJ103T	RES , CHIP	
R417	HRJ10DJ562T	RES , CHIP	
R418	HRJ10DJ562T	RES , CHIP	
R425	HRJ10DJ102T	RES , CHIP (1/10W) , 1K OHM J	1608 SIZE
R426	HRJ10DJ102T	RES , CHIP (1/10W) , 1K OHM J	1608 SIZE
R427	HRJ10DJ102T	RES , CHIP (1/10W) , 1K OHM J	1608 SIZE
R428	HRJ10DJ102T	RES , CHIP (1/10W) , 1K OHM J	1608 SIZE
R433	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R434	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R435	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R436	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R437	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R438	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R453	HRJ10DJ184T	RES , CHIP	1608 SIZE
R454	HRJ10DJ184T	RES , CHIP	1608 SIZE
R455	HRJ10DJ184T	RES , CHIP	1608 SIZE
R456	HRJ10DJ184T	RES , CHIP	1608 SIZE
R457	HRJ10DJ184T	RES , CHIP	1608 SIZE
R458	HRJ10DJ184T	RES , CHIP	1608 SIZE
R471	HRJ10DJ272T	RES , CHIP	
R472	HRJ10DJ272T	RES , CHIP	
R473	HRJ10DJ272T	RES , CHIP	
R491	HRJ10DJ4R7T	RES , CHIP	1608 SIZE

AVR130 INPUT			
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Pos	Part number	1st part name	2nd part name
R492	HRJ10DJ4R7T	RES , CHIP	1608 SIZE
R494	HRJ10DJ4R7T	RES , CHIP	1608 SIZE
R495	HRJ10DJ4R7T	RES , CHIP	1608 SIZE
R496	HRJ10DJ4R7T	RES , CHIP	1608 SIZE
R497	HRJ10DJ4R7T	RES , CHIP	1608 SIZE
R721	HRJ10DJ104T	RES , CHIP	
R722	HRJ10DJ104T	RES , CHIP	
R723	HRJ10DJ104T	RES , CHIP	
R724	HRJ10DJ104T	RES , CHIP	
R725	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R726	HRJ10DJ1R0T	RES , CHIP	
R727	HRJ10DJ1R0T	RES , CHIP	
R728	HRJ10DJ1R0T	RES , CHIP	
R729	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R730	HRJ10DJ1R0T	RES , CHIP	
R731	HRJ10DJ1R0T	RES , CHIP	
R732	HRJ10DJ183T	RES , CHIP	
R733	HRJ10DJ4R7T	RES , CHIP	1608 SIZE
R734	HRJ10DJ330T	RES , CHIP (1/10W) , 33 OHM J	1608 SIZE
R735	HRJ10DJ105T	RES , CHIP (1/10W)	1608 SIZE
R736	HRJ10DJ121T	RES , CHIP (1/10W)	1608 SIZE
R737	HRJ10DJ4R7T	RES , CHIP	1608 SIZE
R738	HRJ10DJ1R0T	RES , CHIP	
R739	HRJ10DJ2R7T	RES , CHIP	
R740	HRJ10DJ330T	RES , CHIP (1/10W) , 33 OHM J	1608 SIZE
R741	HRJ10DJ330T	RES , CHIP (1/10W) , 33 OHM J	1608 SIZE
R742	HRJ10DJ330T	RES , CHIP (1/10W) , 33 OHM J	1608 SIZE
R743	HRJ10DJ330T	RES , CHIP (1/10W) , 33 OHM J	1608 SIZE
R744	HRJ10DJ330T	RES , CHIP (1/10W) , 33 OHM J	1608 SIZE
R745	HRJ10DJ330T	RES , CHIP (1/10W) , 33 OHM J	1608 SIZE
R746	HRJ10DJ472T	RES , CHIP (1/10W) ,4.7K OHM J	1608 SIZE
R747	HRJ10DJ472T	RES , CHIP (1/10W) ,4.7K OHM J	1608 SIZE
R748	HRJ10DJ103T	RES , CHIP	
R749	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R750	HRJ10DJ332T	RES , CHIP	
R751	HRJ10DJ332T	RES , CHIP	
R752	HRJ10DJ102T	RES , CHIP (1/10W) , 1K OHM J	1608 SIZE
R753	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R754	HRJ10DJ103T	RES , CHIP	
R755	HRJ10DJ103T	RES , CHIP	
R756	HRJ10DJ103T	RES , CHIP	
R757	HRJ10DJ103T	RES , CHIP	
R758	HRJ10DJ103T	RES , CHIP	
R759	HRJ10DJ103T	RES , CHIP	

AVR130 INPUT			
			11/14
Pos	Part number	1st part name	2nd part name
R760	HRJ10DJ103T	RES , CHIP	
R761	HRJ10DJ103T	RES , CHIP	
R762	HRJ10DJ103T	RES , CHIP	
R763	HRJ10DJ333T	RES , CHIP	
R764	HRJ10DJ330T	RES , CHIP (1/10W) , 33 OHM J	1608 SIZE
R765	HRJ10DJ332T	RES , CHIP	
R766	HRJ10DJ103T	RES , CHIP	
R767	HRJ10DJ332T	RES , CHIP	
R768	HRJ10DJ330T	RES , CHIP (1/10W) , 33 OHM J	1608 SIZE
R769	HRJ10DJ101T	RES , CHIP (1/10W) , 100 OHM J	1608 SIZE
R770	HRJ10DJ103T	RES , CHIP	
R771	HRJ10DJ4R7T	RES , CHIP	1608 SIZE
R772	HRJ10DJ182T	RES , CHIP	
R773	HRJ10DJ8R2T	RES , CHIP	
R774	HRJ10DJ471T	RES , CHIP	
R780	HRJ10DJ330T	RES , CHIP (1/10W) , 33 OHM J	1608 SIZE
C101	HCEA1VH100T	CAP , ELECT	10UF 35V
C102	HCEA1VH100T	CAP , ELECT	10UF 35V
C103	HCEA1VH100T	CAP , ELECT	10UF 35V
C104	HCEA1VH100T	CAP , ELECT	10UF 35V
C237	HCEA1CH101T	CAP , ELECT	100UF 16V
C238	HCEA1CH101T	CAP , ELECT	100UF 16V
C239	HCEA1VH100T	CAP , ELECT	10UF 35V
C240	HCEA1VH100T	CAP , ELECT	10UF 35V
C251	HCEA1CH101T	CAP , ELECT	100UF 16V
C252	HCEA1CH101T	CAP , ELECT	100UF 16V
C261	HCEA1CH101T	CAP , ELECT	100UF 16V
C262	HCEA1CH101T	CAP , ELECT	100UF 16V
C263	HCEA1VH100T	CAP , ELECT	10UF 35V
C264	HCEA1VH100T	CAP , ELECT	10UF 35V
C267	HCEA1VH100T	CAP , ELECT	10UF 35V
C268	HCEA1VH100T	CAP , ELECT	10UF 35V
C301	HCQI1H332JZT	CAP , MYLAR	3300PF 50V J
C302	HCQI1H332JZT	CAP , MYLAR	3300PF 50V J
C303	HCQI1H332JZT	CAP , MYLAR	3300PF 50V J
C304	HCQI1H332JZT	CAP , MYLAR	3300PF 50V J
C305	HCQI1H332JZT	CAP , MYLAR	3300PF 50V J
C306	HCQI1H332JZT	CAP , MYLAR	3300PF 50V J
C307	HCQI1H332JZT	CAP , MYLAR	3300PF 50V J
C308	HCQI1H332JZT	CAP , MYLAR	3300PF 50V J
C309	HCQI1H332JZT	CAP , MYLAR	3300PF 50V J
C310	HCQI1H332JZT	CAP , MYLAR	3300PF 50V J
C311	HCQI1H332JZT	CAP , MYLAR	3300PF 50V J
C312	HCQI1H332JZT	CAP , MYLAR	3300PF 50V J

AVR130 INPUT			
			12/14
Pos	Part number	1st part name	2nd part name
C313	HCQI1H332JZT	CAP , MYLAR	3300PF 50V J
C314	HCQI1H332JZT	CAP , MYLAR	3300PF 50V J
C315	HCQI1H332JZT	CAP , MYLAR	3300PF 50V J
C316	HCQI1H332JZT	CAP , MYLAR	3300PF 50V J
C341	HCEA1VH100T	CAP , ELECT	10UF 35V
C342	HCEA1VH100T	CAP , ELECT	10UF 35V
C343	HCEA1VH100T	CAP , ELECT	10UF 35V
C344	HCEA1VH100T	CAP , ELECT	10UF 35V
C345	HCEA1VH100T	CAP , ELECT	10UF 35V
C346	HCEA1VH100T	CAP , ELECT	10UF 35V
C347	HCEA1VH100T	CAP , ELECT	10UF 35V
C348	HCEA1VH100T	CAP , ELECT	10UF 35V
C349	HCEA1HH1R0T	CAP , ELECT	1UF 50V
C403	HCEA1VH100T	CAP , ELECT	10UF 35V
C404	HCEA1VH100T	CAP , ELECT	10UF 35V
C405	HCEA1VH100T	CAP , ELECT	10UF 35V
C406	HCEA1VH100T	CAP , ELECT	10UF 35V
C407	HCEA1VH100T	CAP , ELECT	10UF 35V
C408	HCEA1VH100T	CAP , ELECT	10UF 35V
C426	HCQI1H182JZT	CAP , MYLAR	1800PF 50V J
C433	HCEA1CH101T	CAP , ELECT	100UF 16V
C434	HCEA1CH101T	CAP , ELECT	100UF 16V
C435	HCEA1CH101T	CAP , ELECT	100UF 16V
C436	HCEA1CH101T	CAP , ELECT	100UF 16V
C437	HCEA1CH101T	CAP , ELECT	100UF 16V
C438	HCEA1CH101T	CAP , ELECT	100UF 16V
C453	HCEA1VH100T	CAP , ELECT	10UF 35V
C454	HCEA1VH100T	CAP , ELECT	10UF 35V
C455	HCEA1VH100T	CAP , ELECT	10UF 35V
C456	HCEA1VH100T	CAP , ELECT	10UF 35V
C457	HCEA1VH100T	CAP , ELECT	10UF 35V
C458	HCEA1VH100T	CAP , ELECT	10UF 35V
C725	HCEA1CH101T	CAP , ELECT	100UF 16V
C728	HCEA1EH470T	CAP , ELECT	47UF 25V
C732	HCEA1CH101T	CAP , ELECT	100UF 16V
C741	HCEA1CH101T	CAP , ELECT	100UF 16V
C745	HCEA1CH101T	CAP , ELECT	100UF 16V
C749	HCEA1CH101T	CAP , ELECT	100UF 16V
C752	HCEA1CH101T	CAP , ELECT	100UF 16V
C754	HCEA1VH100T	CAP , ELECT	10UF 35V
C757	HCEA1HH2R2T	CAP , ELECT	2.2UF 50V
C759	HCEA1VH100T	CAP , ELECT	10UF 35V
C768	HCEA1HH2R2T	CAP , ELECT	2.2UF 50V
C770	HCEA1EH470T	CAP , ELECT	47UF 25V

AVR130 INPUT			
			13/14
Pos	Part number	1st part name	2nd part name
C772	HCEA1EH470T	CAP , ELECT	47UF 25V
C776	HCEA1CH101T	CAP , ELECT	100UF 16V
C778	HCEA0JH102T	CAP , ELECT	1000UF 6.3V
C781	HCEA1CH101T	CAP , ELECT	100UF 16V
C782	HCEA1AH471T	CAP , ELECT	470UF 10V
C785	HCEA1CH101T	CAP , ELECT	100UF 16V
C786	HCEA1AH471T	CAP , ELECT	470UF 10V
D201	HVD1SS133MT	DIODE	1SS133T-77
D202	HVD1SS133MT	DIODE	1SS133T-77
D203	HVD1SS133MT	DIODE	1SS133T-77
D204	HVD1SS133MT	DIODE	1SS133T-77
D207	HVD1SS133MT	DIODE	1SS133T-77
D208	HVD1SS133MT	DIODE	1SS133T-77
D209	HVD1SS133MT	DIODE	1SS133T-77
D210	HVD1SS133MT	DIODE	1SS133T-77
D211	HVD1SS133MT	DIODE	1SS133T-77
D212	HVD1SS133MT	DIODE	1SS133T-77
D213	HVD1SS133MT	DIODE	1SS133T-77
D214	HVD1SS133MT	DIODE	1SS133T-77
D701	HVDMTZJ4.7BT	DIODE , ZENER	4.7V 1/2W
D702	HVDMTZJ3.3BT	DIODE , ZENER	3.3V 1/2W
J101	C3A206	WIRE , COPPER	SN95/PB5 , 0.6
J102	C3A206	WIRE , COPPER	SN95/PB5 , 0.6
L703	KLQ100J405T	COIL, PEAKING(RADIAL)	10UH J 4X5
Q201	HVTKTD1302T	T.R	KTD1302
Q202	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q203	HVTKTC2874BT	T.R , MUTE	KTC2874B
Q204	HVTKRA107MT	T.R	KRA107M
Q701	HVTKSC2316YT	T.R	KSC2316Y
Q702	HVTKSC2316YT	T.R	KSC2316Y
BN11	KJP15GB99ZM	WAFER	35237(15PIN)
BN12	KJP15GB99ZM	WAFER	35237(15PIN)
CN13	CJP13GA115ZY	WAFER , CARD CABLE	
CN15	CJP09GA115ZY	WAFER , CARD CABLE	
CN17	KJP12GB142ZP	PIN HEADER	2110 - DR12 - G
CN18	KJP05GA19ZM	WAFER	MOLEX53014-0510
CN72	KJP32GA161ZY	WAFER	YD200 SERIES
JK11	CJJ4R019W	TERMINAL , IN/OUT	
JK13	CJJ4P014W	JACK , IN/OUT	
JK14	CJJ4R019W	TERMINAL , IN/OUT	
JK15	CJJ4P043W	JACK IN/OUT	
JW21	CWE7202090AA	WIRE ASS'Y	
L701	KLZ9H001Z	BEAD , CORE	
L702	KLZ9H001Z	BEAD , CORE	

AVR130 INPUT			
			14/14
Pos	Part number	1st part name	2nd part name
L704	KLZ9H001Z	BEAD , CORE	
L705	KLZ9H001Z	BEAD , CORE	
R781	CRG2ANJ150H	RES , METAL OXIDE FILM	15 OHM 2W J
R782	CRG2ANJ330H	RES , METAL OXIDE FILM	33 OHM 2W J
X701	HOX12288E220TF	CRYSTAL(HC-49/S,ATS)	12.288MHZ 22PF
AVR130 VIDEO			
			1/3
Pos	Part number	1st part name	2nd part name
	COP11581E	VIDEO PCB ASS'Y	
C404	CCKT1H101KB	CAP , CERAMIC	100PF 50V KB
C407	CCKT1H101KB	CAP , CERAMIC	100PF 50V KB
C411	HCBS1H101KBT	CAP , CERAMIC	100PF 50V K
C412	HCBS1H101KBT	CAP , CERAMIC	100PF 50V K
C413	HCBS1H151KBT	CAP , CERAMIC	150PF 50V K
C414	HCBS1H151KBT	CAP , CERAMIC	150PF 50V K
C416	HCEA1CH101T	CAP , ELECT	100UF 16V
C417	HCEA1CH101T	CAP , ELECT	100UF 16V
C418	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C420	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C421	HCEA1CH101T	CAP , ELECT	100UF 16V
C422	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C423	HCEA1CH101T	CAP , ELECT	100UF 16V
C427	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C428	HCEA1CH101T	CAP , ELECT	100UF 16V
C429	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C430	HCEA1CH101T	CAP , ELECT	100UF 16V
C436	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C437	HCEA1CH101T	CAP , ELECT	100UF 16V
C438	HCBS1H223ZFT	CAP , CERAMIC	0.022UF 50V Z
C439	HCEA1CH101T	CAP , ELECT	100UF 16V
C461	HCEA1CH101T	CAP , ELECT	100UF 16V
C462	HCEA1CH101T	CAP , ELECT	100UF 16V
C463	HCBS1H473ZFT	CAP , CERAMIC	0.047UF 50V Z
C498	HCBS1H101KBT	CAP , CERAMIC	100PF 50V K
C499	HCBS1H101KBT	CAP , CERAMIC	100PF 50V K
C701	HCEA1AH471T	CAP , ELECT	470UF 10V
C702	HCEA1AH471T	CAP , ELECT	470UF 10V
C703	CCKT1H181KB	CAP , CERAMIC	180PF 50V KB
C704	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V ZF
C705	CCKT1H181KB	CAP , CERAMIC	180PF 50V KB
C706	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V ZF

AVR130VIDEO			
			2/3
Pos	Part number	1st part name	2nd part name
C707	CCKT1H101KB	CAP , CERAMIC	100PF 50V KB
C708	HCEA1CKS101T	CAP , ELECT	
C709	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V ZF
C710	CCCT1H270JC	CAP , CERAMIC	22PF 50V JC
C711	HCEA1CH101T	CAP , ELECT	100UF 16V
C712	CCKT1H473ZF	CAP , CERAMIC	0.047UF 50V ZF
C713	CCCT1H270JC	CAP , CERAMIC	22PF 50V JC
R404	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R405	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R406	CRD20TJ332T	RES , CARBON	3.3K OHM 1/5W J
R407	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R408	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R409	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R410	CRD20TJ332T	RES , CARBON	3.3K OHM 1/5W J
R417	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R418	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R419	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R420	CRD20TJ332T	RES , CARBON	3.3K OHM 1/5W J
R421	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R422	CRD20TJ332T	RES , CARBON	3.3K OHM 1/5W J
R423	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R424	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R425	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R426	CRD20TJ332T	RES , CARBON	3.3K OHM 1/5W J
R427	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R428	CRD20TJ332T	RES , CARBON	3.3K OHM 1/5W J
R430	CRD20TJ1R8T	RES , CARBON	1.8 OHM 1/5W J
R431	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R432	CRD20TJ1R0T	RES , CARBON	1 OHM 1/5W J
R433	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R434	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R435	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R436	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R437	CRD25TJ102T	RES , CARBON	
R438	CRD25TJ1R0T	RES , CARBON	
R481	CRG2ANJ150H	RES , METAL OXIDE FILM	15 OHM 2W J
R439	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R440	CRD20TJ1R8T	RES , CARBON	1.8 OHM 1/5W J
R441	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R442	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R443	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R444	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R445	CRD20TJ1R0T	RES , CARBON	1 OHM 1/5W J
R446	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J

AVR130 VIDEO			
			3/3
Pos	Part number	1st part name	2nd part name
R447	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R448	CRD20TJ1R8T	RES , CARBON	1.8 OHM 1/5W J
R449	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R450	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R451	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R452	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J
R476	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J
R701	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R702	CRD20TJ1R0T	RES , CARBON	1 OHM 1/5W J
R703	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
R704	CRD20TJ1R0T	RES , CARBON	1 OHM 1/5W J
R705	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R706	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R707	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J
R708	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J
R709	CRD20TJ111T	RES , CARBON	110 OHM 1/5W J
R710	CRD20TJ1R0T	RES , CARBON	1 OHM 1/5W J
R711	CRD20TJ1R0T	RES , CARBON	1 OHM 1/5W J
R712	CRD20TJ101T	RES , CARBON	100 OHM 1/5W J
R713	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J
R714	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J
BN17	KJP12GB143ZP	DIP SOCKET	3011 - DR12 - G
CN41	KJP06GA19ZM	WAFER	MOLEX53014-0610
CN43	CJP09GA115ZY	WAFER , CARD CABLE	
CN84	KJP02KA060ZY	WAFER	7.92MM(YUNHO)
IC41	HVINJM2296M	I.C , VIDEO SW	NJM2296M
IC42	HVINJM2296M	I.C , VIDEO SW	NJM2296M
IC43	HVINJM2296M	I.C , VIDEO SW	NJM2296M
IC48	CVIL7805CPNA	I.C ASS'Y	
IC49	CVIL7905CPNA	I.C ASS'Y	
IC71	HVITC74HCU04AFN	IC , INVERTER	TC74HCU04AFN
JK42	CJJ9N001Z	JACK , S-VIDEO (2P/H)	
JK43	CJJ9S001Z	JACK , S-VIDEO (3P/H)	
JK49	CJJ4N043Z	JACK , BOARD	
JK50	CJJ4S010Z	JACK , BOARD	
JK71	HJSTORX179L	MODULE , OPTICAL(RX)	TORX179L
JK72	HJSTORX179L	MODULE , OPTICAL(RX)	TORX179L
JK73	CJJ4S022Z	JACK , BOARD	
JK74	HJSTOTX179L	MODULE , OPTICAL(TX)	TOTX179L
JW11	CWEP202110VV	WIRE	

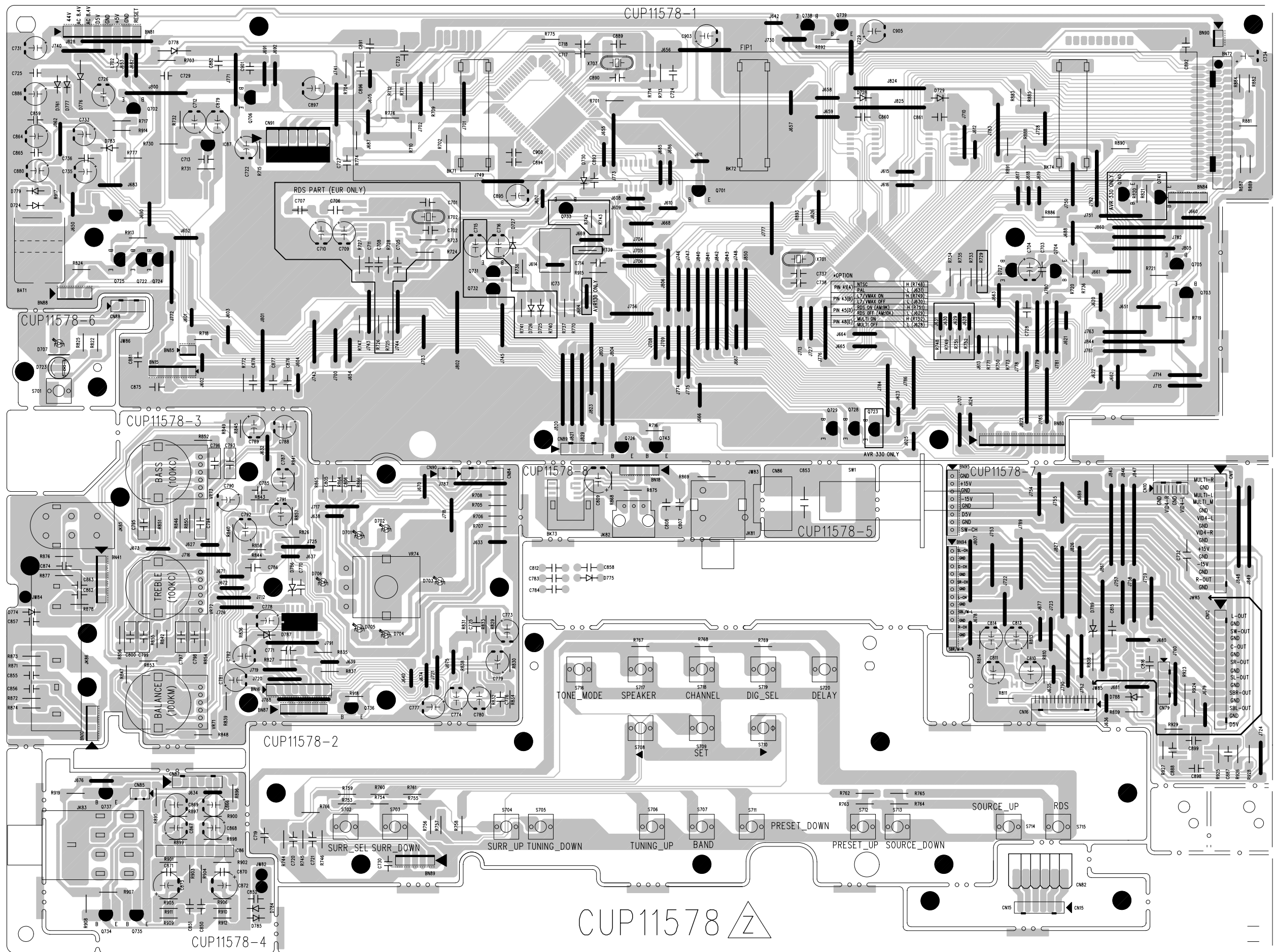
AVR130 BIAS			
			1/1
Pos	Part number	1st part name	2nd part name
	COP11651D	BIAS T.R PCB ASS'Y	
C853	HCEA1HH100T	CAP , ELECT	10UF 50V
C854	HCEA1HH100T	CAP , ELECT	10UF 50V
C855	HCEA1HH100T	CAP , ELECT	10UF 50V
C856	HCEA1HH100T	CAP , ELECT	10UF 50V
C857	HCEA1HH100T	CAP , ELECT	10UF 50V
CN81	KJP02GB46ZM	WAFER	
CN82	KJP02GB46ZM	WAFER	
CN83	KJP02GB46ZM	WAFER	
CN84	KJP02GB46ZM	WAFER	
CN85	KJP02GB46ZM	WAFER	
Q853	HVTKTD600KGR	T.R , BIAS	KTD600KGR
Q854	HVTKTD600KGR	T.R , BIAS	KTD600KGR
Q855	HVTKTD600KGR	T.R , BIAS	KTD600KGR
Q856	HVTKTD600KGR	T.R , BIAS	KTD600KGR
Q857	HVTKTD600KGR	T.R , BIAS	KTD600KGR
R876	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J
R877	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J
R878	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J
R879	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J
R880	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J
R884	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J
R885	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J
R886	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J
R887	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J
R888	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J
VR83	HVN1RA221B01T	RES , SEMI FIXED(220 OHM)	RH0615C100221
VR84	HVN1RA221B01T	RES , SEMI FIXED(220 OHM)	RH0615C100221
VR85	HVN1RA221B01T	RES , SEMI FIXED(220 OHM)	RH0615C100221
VR86	HVN1RA221B01T	RES , SEMI FIXED(220 OHM)	RH0615C100221
VR87	HVN1RA221B01T	RES , SEMI FIXED(220 OHM)	RH0615C100221

AVR130 Regulator PCB

AVR130 Regulator PCB			
			1/1
Pos	Part number	1st part name	2nd part name
	CUP116551-1	IC REGULATOR PCB ASS'Y	
R912	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J
R913	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J
R914	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J
IC91	HVIL7815CP	I.C, REGULATOR	
IC92	HVIL7915CP	I.C, REGULATOR	
IC93	HVIL7805CP	I.C, REGULATOR	
D903	KVD1N4003SRT	DIODE TW	1N4003
D904	KVD1N4003ST	DIODE	1N4003
D905	KVD1N4003ST	DIODE	1N4003
D906	KVD1N4003ST	DIODE	1N4003
D907	KVD1N4003ST	DIODE	1N4003
D915	HVD1SS133MT	DIODE	1SS133T-77
D916	HVD1SS133MT	DIODE	1SS133T-77
CN96	KJP08GA01ZM	WAFER	MOLEX 5267-08A
CN98	BJP08GB131ZK	WAFER	
C922	HCEA1EH101T	CAP , ELECT	100UF 25V
C923	HCEA1EH101T	CAP , ELECT	100UF 25V
C924	HCEA1EH101T	CAP , ELECT	100UF 25V
C926	CCKT1H223ZF	CAP , CERAMIC	0.022UF 50V ZF
C927	CCKT1H223ZF	CAP , CERAMIC	0.022UF 50V ZF
C928	CCEA1CH472E	CAP , ELECT	
C931	HCEA1HH4R7T	CAP , ELECT	4.7UF 50V

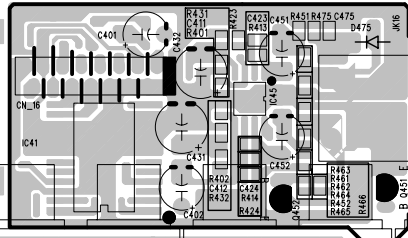
AVR130 Power supply			
			1/1
Pos	Part number	1st part name	2nd part name
C107	CCKT1H103ZF	CAP , CERAMIC	0.01UF 50V ZF
C108	CCKT1H103ZF	CAP , CERAMIC	0.01UF 50V ZF
C109	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V ZF
C110	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V ZF
C111	CCKT1H103ZF	CAP , CERAMIC	0.01UF 50V ZF
C112	CCKT1H103ZF	CAP , CERAMIC	0.01UF 50V ZF
C117	HCEA1HH4R7T	CAP , ELECT	4.7UF 50V
C118	CCKT1H103ZF	CAP , CERAMIC	0.01UF 50V ZF
C119	HCEA1HH470T	CAP , ELECT	47UF 50V
C120	HCEA1HH470T	CAP , ELECT	47UF 50V
C121	CCKT1H103ZF	CAP , CERAMIC	0.01UF 50V ZF
C122	HCEA1JH101E	CAP , ELECT	100UF 63V
CN13	KJP05GA01ZM	WAFER	MOLEX 5267-05A
CN81	KJP08GA01ZM	WAFER	MOLEX 5267-08A
BN96	CWB1C908150BM	WIRE ASS'Y	
SW91	KST1A010Z	SW , TACT CN	reset
R101	KRQ1AJR47H	RES , FUSE	0.47 OHM 1W J
R104	KRQ1AJR47H	RES , FUSE	0.47 OHM 1W J
R105	KRQ1AJR47H	RES , FUSE	0.47 OHM 1W J
R106	KRQ1AJR47H	RES , FUSE	0.47 OHM 1W J
R107	KRQ1AJR47H	RES , FUSE	0.47 OHM 1W J
R108	CRD20TJ4R7T	RES , CARBON	
R109	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J
R110	CRD20TJ4R7T	RES , CARBON	
R112	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J
R113	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J
D101	HVDMTZJ15BT	DIODE , ZENER	15V 1/2W
D102	HVDMTZJ27BT	DIODE , ZENER	
D104	KVD1N4003ST	DIODE	1N4003
D105	KVD1N4003ST	DIODE	1N4003
D106	KVD1N4003ST	DIODE	1N4003
D107	KVD1N4003ST	DIODE	1N4003
D108	KVD1N4003ST	DIODE	1N4003
D109	HVDMTZ12BT	DIODE , ZENER(20MM)	12V 1/2W
D111	HVDMTZJ12BT	DIODE , ZENER	12V 1/2W
Q104	HVTKSC2316YT	T.R	KSC2316Y

AVR130 Power supply CUP11581-6			
			1/1
Pos	Part number	1st part name	2nd part name
C124	BCQE2E104KDE	CAP , LINE ACROSS	0.1UF 250V KD
F901	KBA2D2500TLET	FUSE	
F902	KBA2D2500TLET	FUSE	
OL91	KJJ7A025Z	OUTLET , EUR(2P)	A3-04-D007-2P
F907	KBA2C4000TLEZ	FUSE	
F907	KJCF5S	HOLDER , FUSE	
CN21	KJP02GA89ZM	WAFER	MOLEX35328-02
BN91	CWB4FE53130PU	WIRE ASS'Y	
AVR130 Power supply CUP11581-4			
			1/1
Pos	Part number	1st part name	2nd part name
C921	HCQ1H104JZT	CAP , MYLAR	0.1UF 50V J
C922	HCQ1H104JZT	CAP , MYLAR	0.1UF 50V J
C923	HCQ1H104JZT	CAP , MYLAR	0.1UF 50V J
C924	HCQ1H104JZT	CAP , MYLAR	0.1UF 50V J
C925	CCKT1H223ZF	CAP , CERAMIC	0.022UF 50V ZF
C925	HCQ1H103JZT	CAP , MYLAR	0.01UF 50V J
C926	HCQ1H103JZT	CAP , MYLAR	0.01UF 50V J
C927	HCQ1H103JZT	CAP , MYLAR	0.01UF 50V J
C928	HCQ1H103JZT	CAP , MYLAR	0.01UF 50V J
C929	CCEA1EH332F	CAP , ELECT	
C930	CCEA1EH222E	CAP. ELECT.	2200UF 25V
C931	HCQ1H473JZT	CAP , MYLAR	0.047UF 50V J
C932	HCQ1H473JZT	CAP , MYLAR	0.047UF 50V J
C933	HCQ1H473JZT	CAP , MYLAR	0.047UF 50V J
C934	HCQ1H473JZT	CAP , MYLAR	0.047UF 50V J
D991	CVDKBU804FMA	BRIDGE DIODE ASS'Y	KBU804F
D992	CVDKBU804FMA	BRIDGE DIODE ASS'Y	KBU804F
F903	KBA2C6300TLEZ	FUSE	
F903	KJCF5S	HOLDER , FUSE	
F904	KBA2C6300TLEZ	FUSE	
F904	KJCF5S	HOLDER , FUSE	
F905	KBA2C4000TLEZ	FUSE	
F905	KJCF5S	HOLDER , FUSE	
F906	KBA2C4000TLEZ	FUSE	
F906	KJCF5S	HOLDER , FUSE	
CN19	KJP03GA90ZM	WAFER	MOLEX35313-0310
CN20	KJP04GA90ZM	WAFER	MOLEX35313-0310
AVR130Power supply			
			1/1
Pos	Part number	1st part name	2nd part name
T901	CLT5V034ZE	TRANS , POWER	

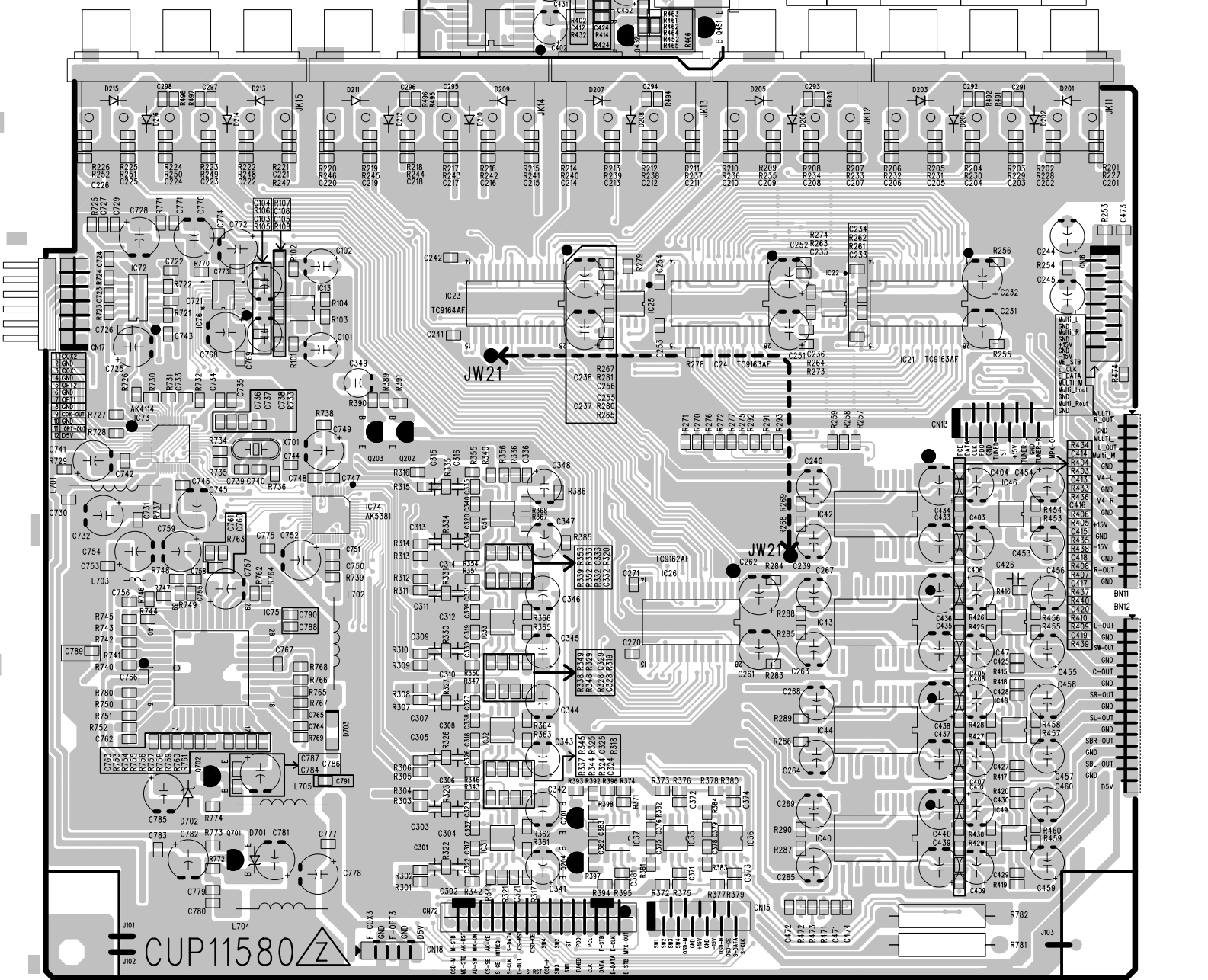


CUP11578

DIPPING



IC	IC	T	ADJ1	ADJ2	RP
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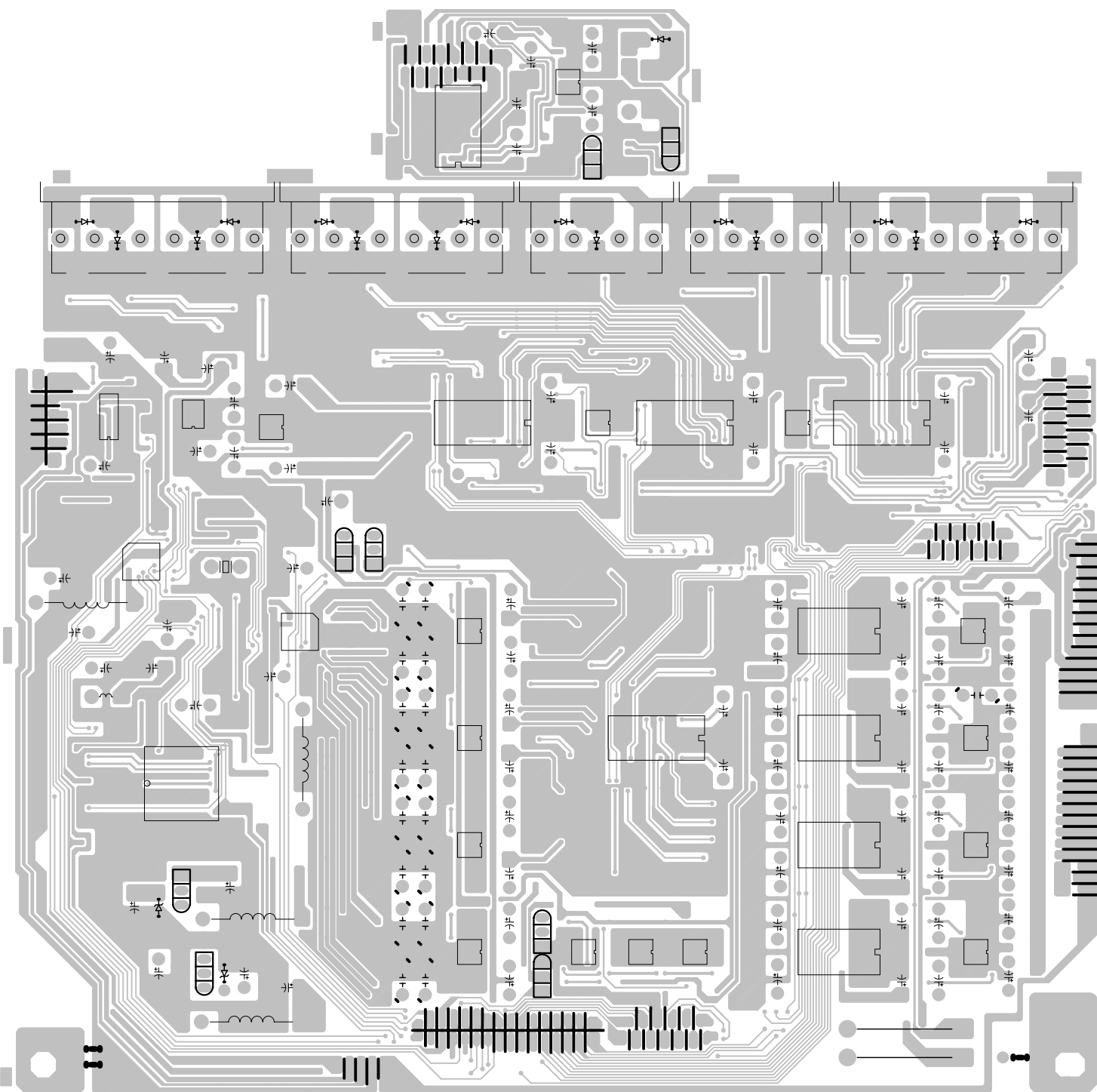


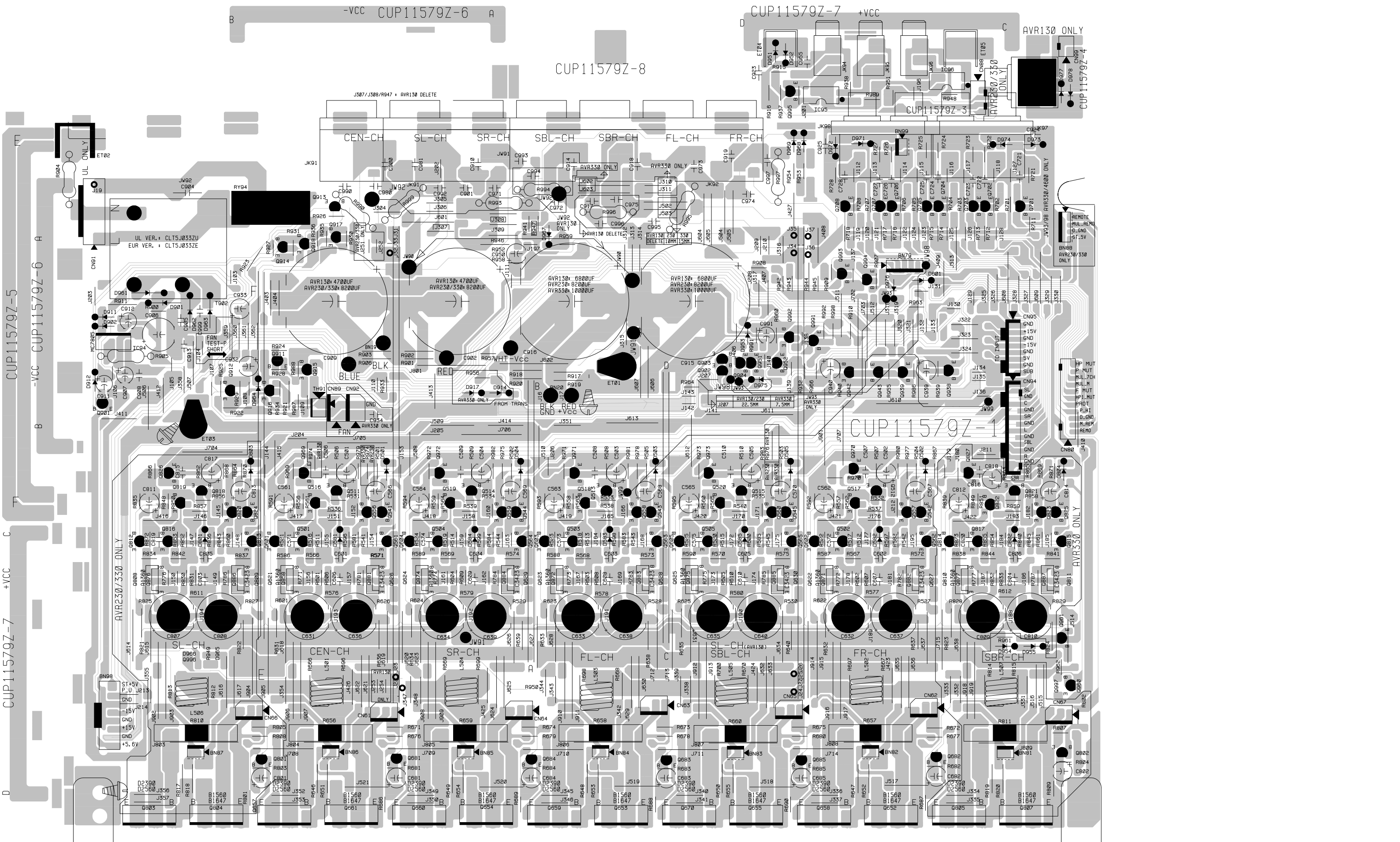
J101 L704 CUP11580



- 05-W
- 06-S
- 07-S
- 08-S
- 09-S
- 10-S
- 11-S
- 12-S
- 13-S
- 14-S
- 15-S
- 16-S
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- 90-S
- 91-S
- 92-S
- 93-S
- 94-S
- 95-S
- 96-S
- 97-S
- 98-S
- 99-S
- 100-S

J03





CUP11579Z-5
-VCC CUP11579Z-6
A
B
C
+VCC
CUP11579Z-7
D

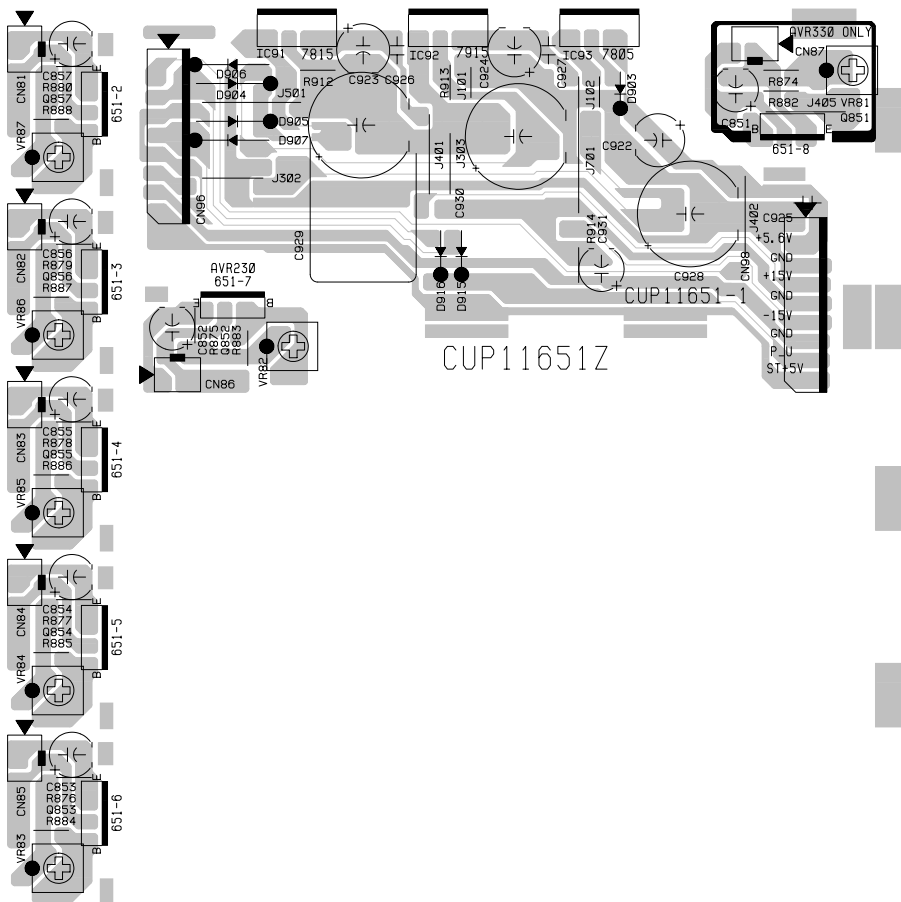
-VCC CUP11579Z-6 A

CUP11579Z-8

CUP11579Z-7 +VCC









AVR130 ONLY

CUP11579Z-4



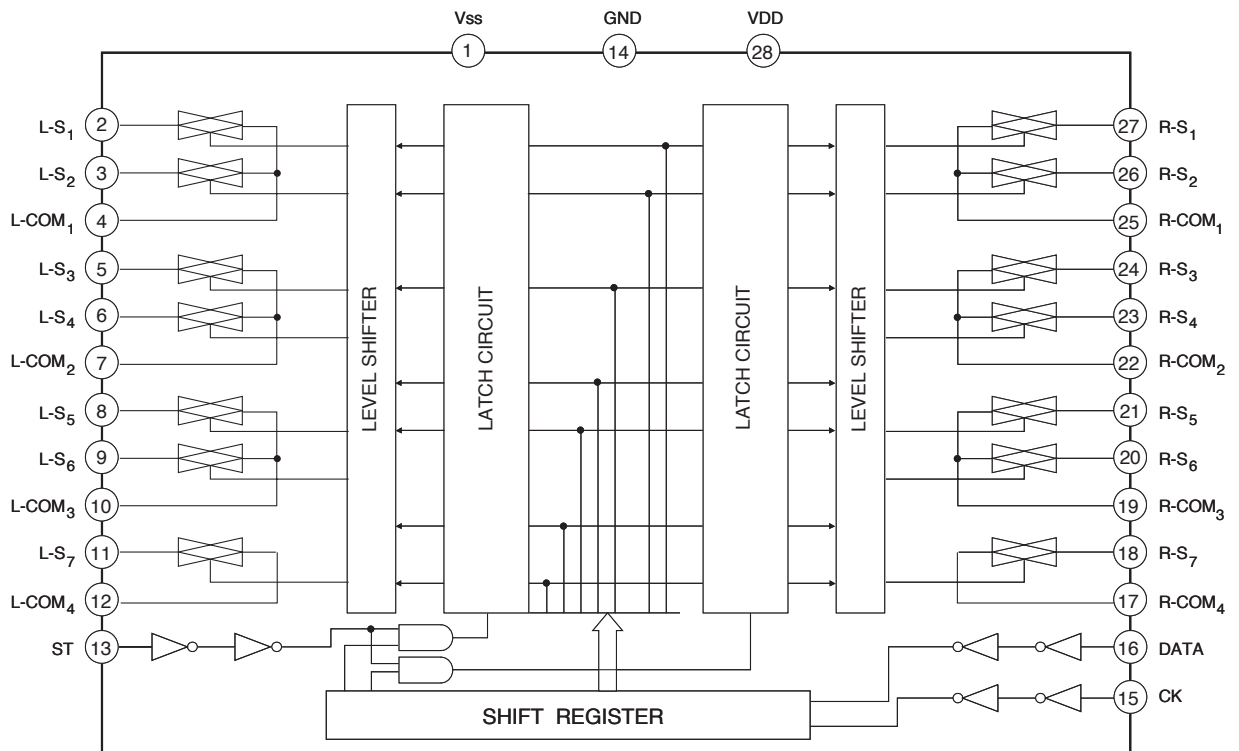
CUP11651-9

TRANSISTOR, REGULATOR IC BLOCK DIAGRAM

<p>TO-92M</p>  <p>1. Emitter 2. Collector 3. Base</p> <p>123</p> <p>KTC2874B KSC2785Y KRA107M KRC107M</p>	<p>TO-92</p>  <p>1. Emitter 2. Collector 3. Base</p> <p>123</p> <p>KTD1302T KTA1268GR KTC3200GR KTC3198Y KTA1271Y</p>	<p>TO-220</p>  <p>1. GND 2. INPUT 3. OUTPUT</p> <p>123</p> <p>MCNJM7905 MC7915C</p>	<p>TO-92L</p>  <p>1. Emitter 2. Collector 3. Base</p> <p>123</p> <p>KTA1024Y KSC2316Y</p>
<p>TO-126</p>  <p>1. Emitter 2. Collector 3. Base</p> <p>123</p> <p>2SA1360O 2SC3423O KTD600KG</p>	<p>TO-220</p>  <p>1. Base 2. Collector 3. Emitter</p> <p>123</p> <p>KSA614Y</p>	<p>TO-220</p>  <p>1. INPUT 2. GND 3. OUTPUT</p> <p>123</p> <p>MC7815C MC7805C</p>	<p>TO-3P</p>  <p>1. Base 2. Collector 3. Emitter</p> <p>1 2 3</p> <p>2SB1560 2SD2390</p>

TC9162AF (FUNCTION/INPUT : IC30)

■ BLOCK DIAGRAM





DUAL HIGH CURRENT OPERATIONAL AMPLIFIER

■ **GENERAL DESCRIPTION**

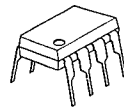
The NJM4556A integrated circuit is a high-gain, high output current dual operational amplifier capable of driving $\pm 70\text{mA}$ into $150\ \Omega$ loads ($\pm 10.5\text{V}$ output voltage), and operating low supply voltage ($V^+/V^- = \pm 2\text{V} \sim$).

The NJM4556A combines many of the fetures of the popular NJM4558 as well as having the capability of driving $150\ \Omega$ 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.

■ **FEATURES**

- Operating Voltage ($\pm 2\text{V} \sim \pm 18\text{V}$)
- High Output Current ($I_o = 70\text{mA}$)
- Slew Rate ($3\text{V}/\mu\text{s}$ typ.)
- Gain Band Width Product (8MHz typ.)
- Package Outline DIP8, DMP8, SIP8, SSOP8
- Bipolar Technology

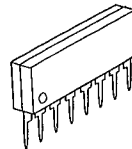
■ **PACKAGE OUTLINE**



NJM4556AD



NJM4556AM

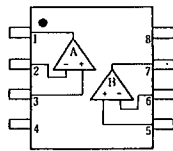


NJM4556AL

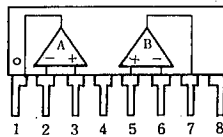


NJM4556AV

■ **PIN CONFIGURATION**



NJM4556AD
NJM4556AM
NJM4556AV

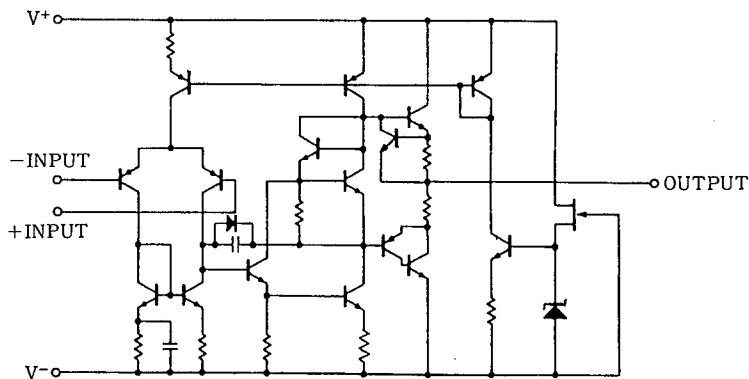


NJM4556AL

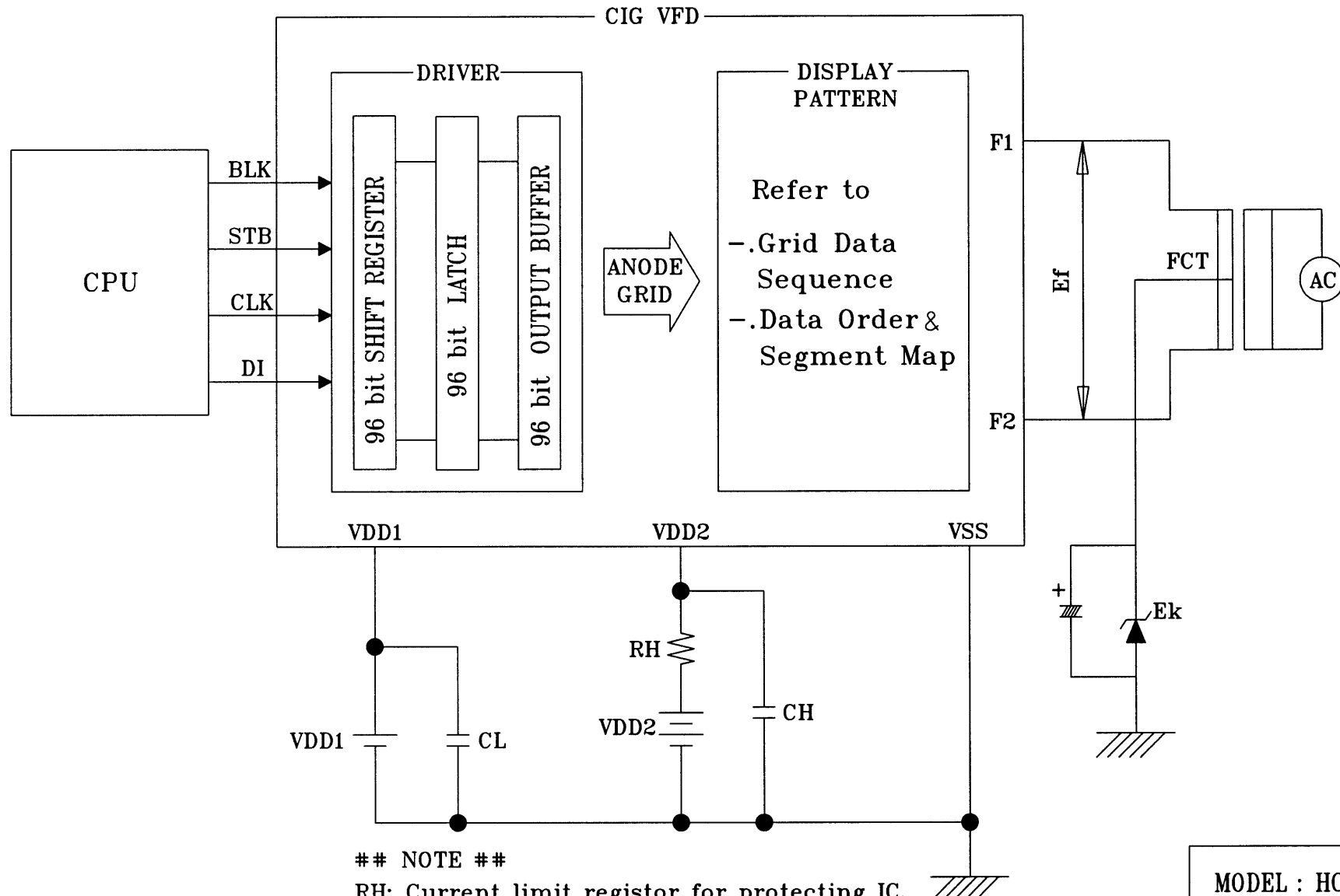
PIN FUNCTION

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)**



BLOCK DIAGRAM



NOTE

RH: Current limit resistor for protecting IC.

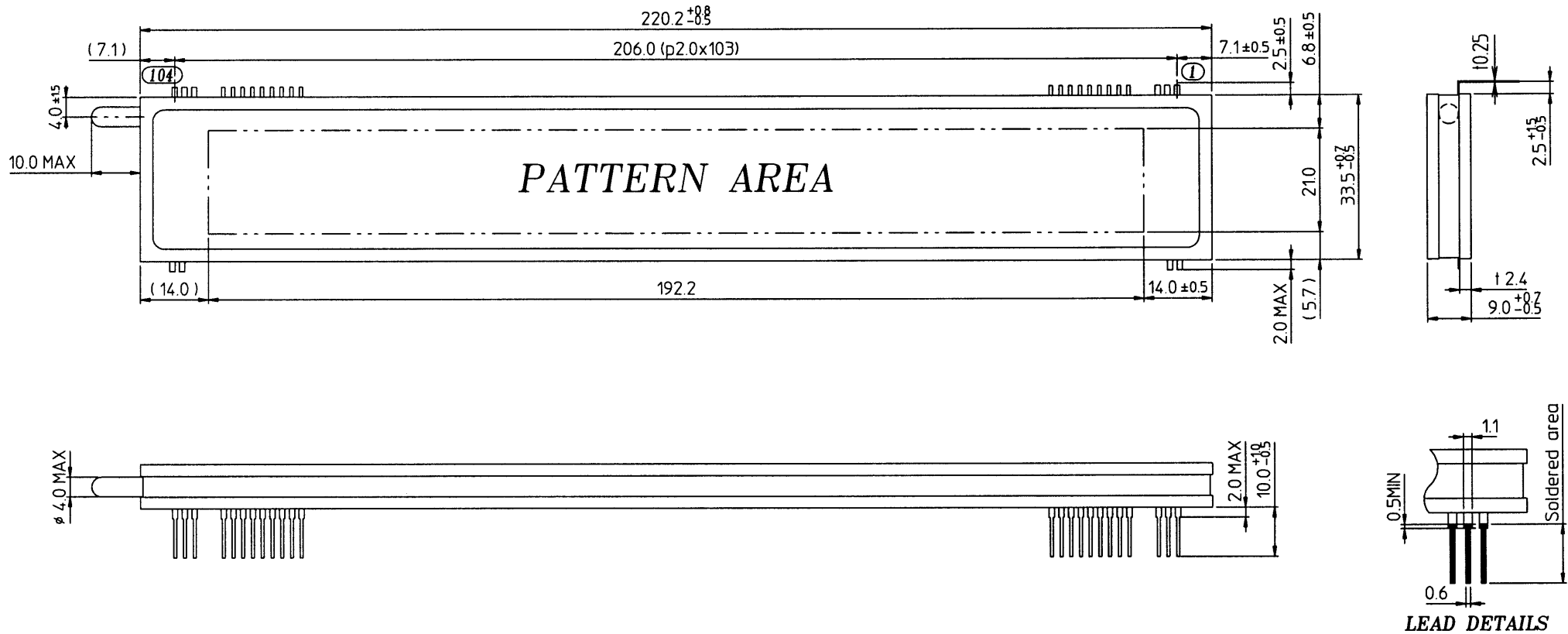
CH,CL: Low pass filter for noise filtering.

RH: 22Ω, CH: 0.1 μF, CL: 0.1 μF

FCT: Filament is center-tab grounded.

MODEL : HCA-18ML01
 BLOCK DIAGRAM
 Rev. ① 20-Feb-2003

OUTER DIMENSIONS



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	VDD2	VSS	VSS	CLK	D0	DI	BLK	STB	VDD1	NP	NC	NP	NP	F1	F1	F1

***Notes**

Fn : Filament Pin

NP : No Pin

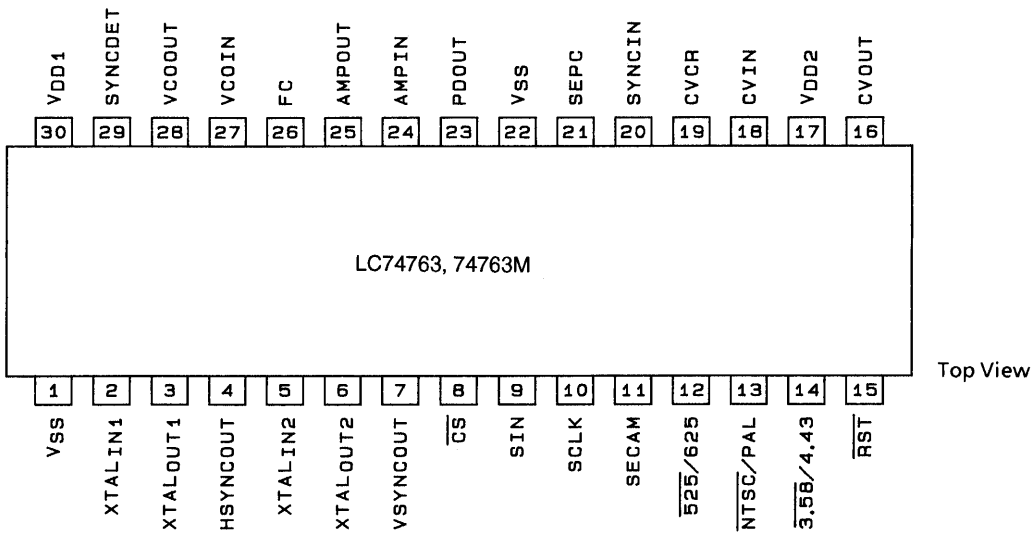
NC : No Connection Pin

* D0(Serial data output) : Be left open if not used.

MODEL : HCA-18ML01
 OUTER DIMENSIONS
 Rev. ① 20-Feb-2003

LC74763, 74763M

Pin Assignment

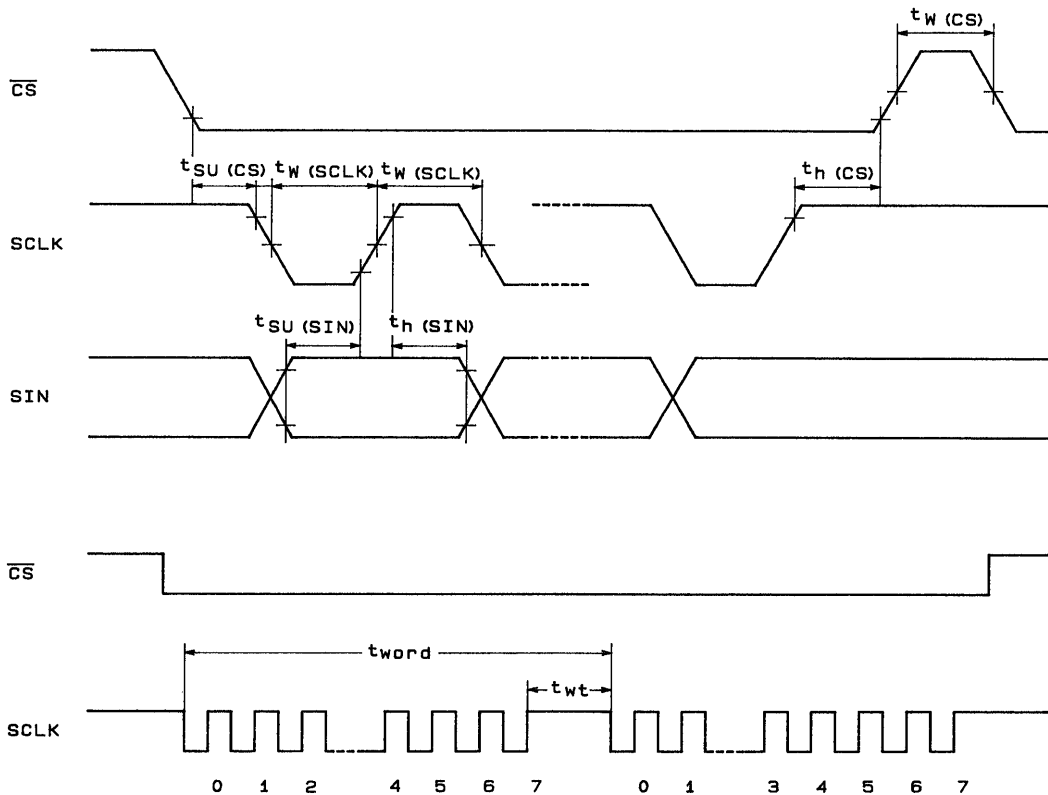


Top View

A03518

Top view

Serial Data Input Timing



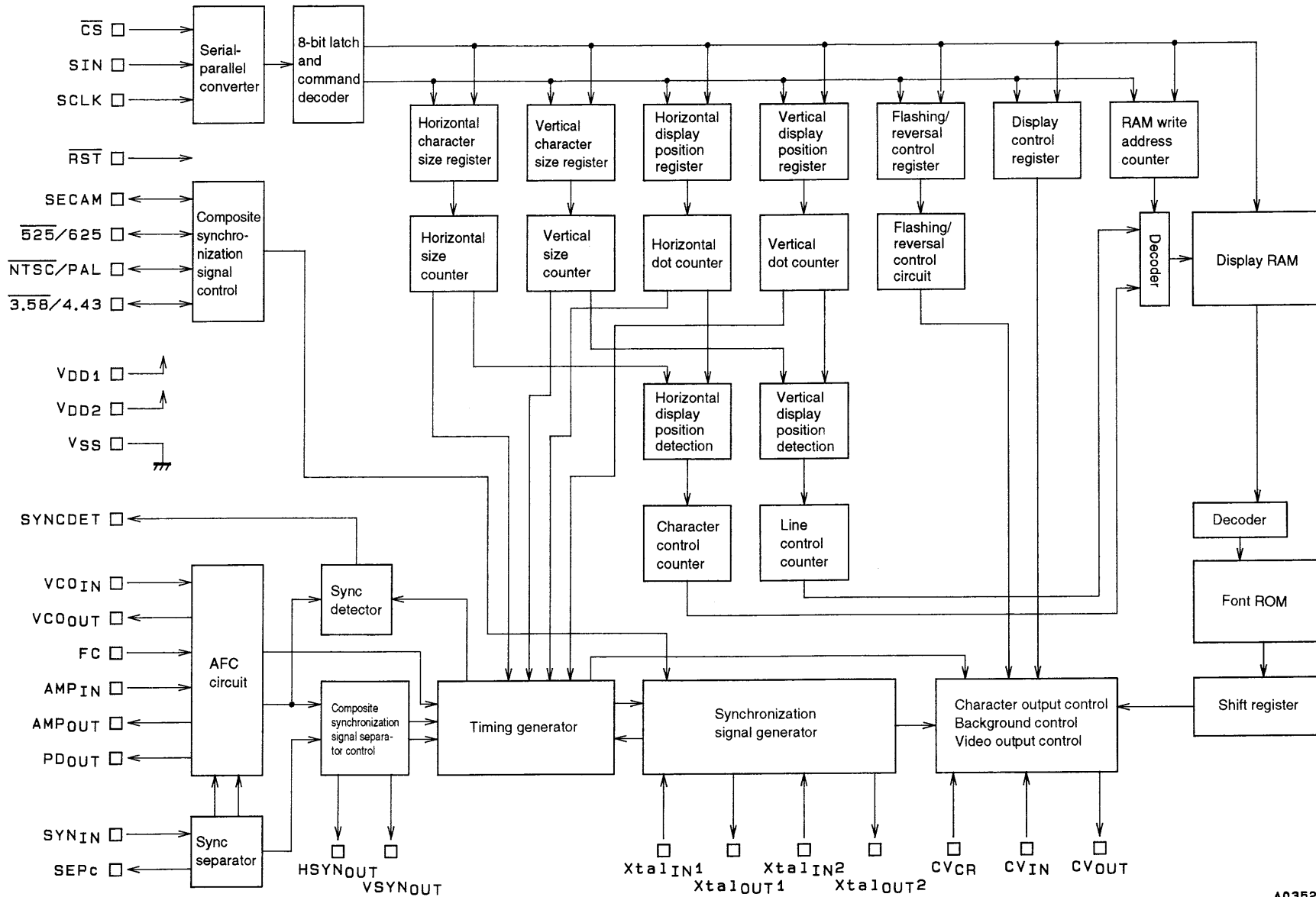
A03519

O.S.D IC (74763M)

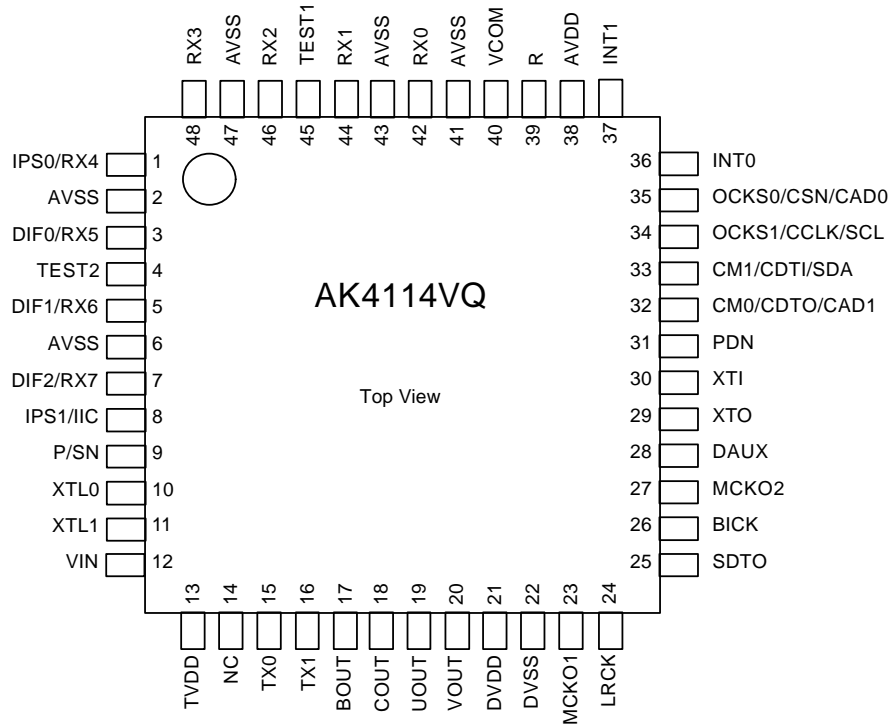
Pin Functions (IC51)

Pin No.	Symbol	Function	Description
1	V _{SS}	Ground	Ground connection
2	Xtal _{IN1}	Crystal oscillator connection	Connection for the crystal and capacitor used to form the crystal oscillator that generates the internal synchronization signal. The oscillator can be selected with a command switch.
3	Xtal _{OUT1}		
4	HSYNC _{OUT}	Horizontal synchronization output	Outputs the horizontal synchronization signal (AFC). The output polarity can be selected (metal option). Also functions as general output port (command switch).
5	Xtal _{IN2}	Crystal oscillator connection	Connection for the crystal and capacitor used to form the crystal oscillator that generates the internal synchronization signal.
6	Xtal _{OUT2}		
7	VSYNC _{OUT}	Vertical synchronization output	Outputs the vertical synchronization signal. The output polarity can be selected (metal option). Also functions as general output port (command switch).
8	\overline{CS}	Enable input	Enables/disables serial data input. Serial data is enabled when this pin is low (hysteresis input). Pull-up resistor built in (metal option).
9	SIN	Data input	Serial data input (hysteresis input). Pull-up resistor built in (metal option).
10	SCLK	Clock input	Clock input for serial data input (hysteresis input). Pull-up resistor built in (metal option).
11	SECAM	SECAM mode switch input/output (command switch)	During input, switches between SECAM and other modes. During output, functions as general output port or internal V output (command switch). Low = other modes, high = SECAM mode
12	$\overline{525/625}$	525/625 switch input/output (command switch)	During input, switches between 525 scan lines and 625 scan lines. During output, functions as general output port or character data output (command switch). Low = 525 lines, high = 625 lines
13	$\overline{NTSC/PAL}$	NTSC/PAL switch input/output (command switch)	Switches the color mode between NTSC and PAL. During output, functions as general output port or frame data output (command switch). Low = NTSC, high = PAL
14	$\overline{3.58/4.43}$	3.58/4.43 switch input/output (command switch)	Switch FSC between 3.58 MHz and 4.43 MHz. During output, functions as general output port or halftone output (command switch). Low = 3.58, high = 4.43
15	\overline{RST}	Reset input	System reset input pin, low is active (hysteresis input). Pull-up resistor built in (metal option).
16	CV _{OUT}	Video signal output	Composite video output
17	V _{DD2}	Power supply connection	Power supply connection for composite video signal level generation
18	CV _{IN}	Video signal input	Composite video input
19	CV _{CR}	Video signal input	SECAM chroma signal input
20	SYNC _{IN}	Sync separator circuit input	Built-in sync separator circuit video signal input
21	SEP _C	Sync separator circuit	Built-in sync separator circuit
22	V _{SS}	Ground	Ground connection
23	PD _{OUT}	Control voltage output	AFC control voltage output
24	AMP _{IN}	AFC filter connection	Filter connection
25	AMP _{OUT}		
26	FC	Control voltage input	AFC control voltage input
27	VCO _{IN}	LC oscillator connection	VCO LC oscillator circuit coil and capacitor connection
28	VCO _{OUT}		
29	SYNC _{DET}	External synchronization signal detection output	Outputs the exclusive NOR of the horizontal synchronization signal (AFC) and CSYNC (sync separator). The output polarity can be selected (metal option). Also functions as general output port (command switch).
30	V _{DD1}	Power supply connection	Power supply connection (+5 V: digital system power supply)

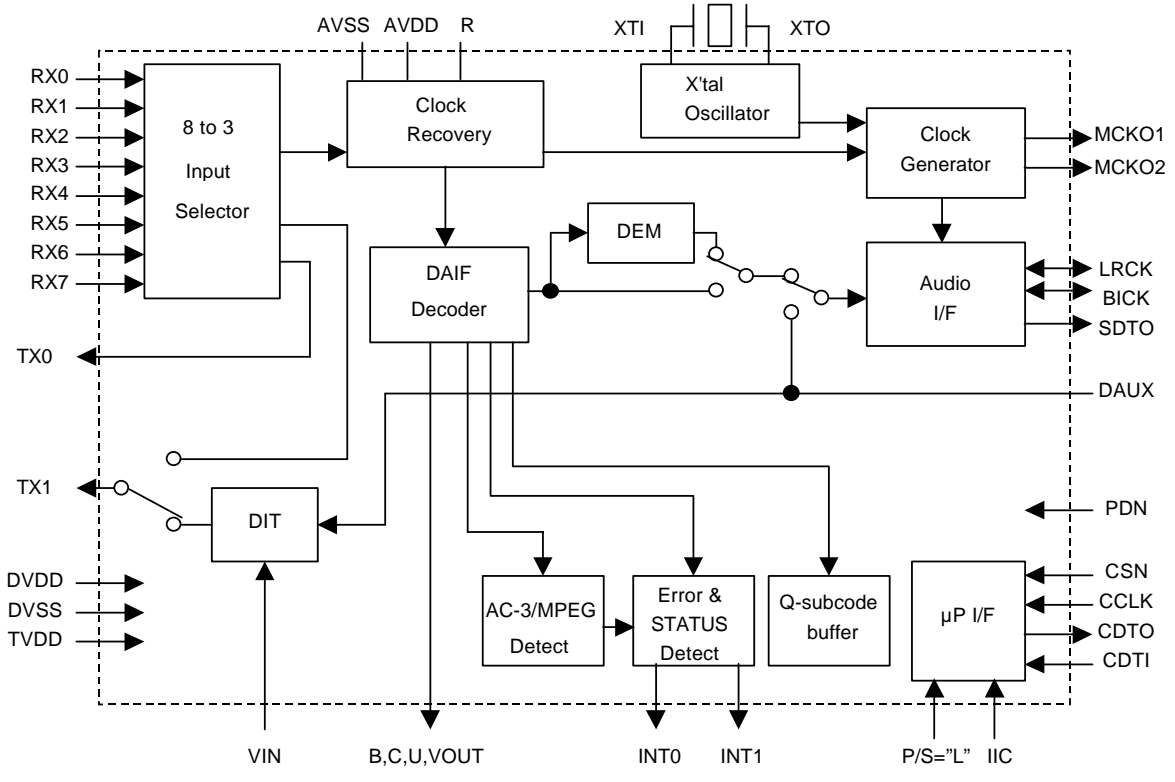
System Block Diagram



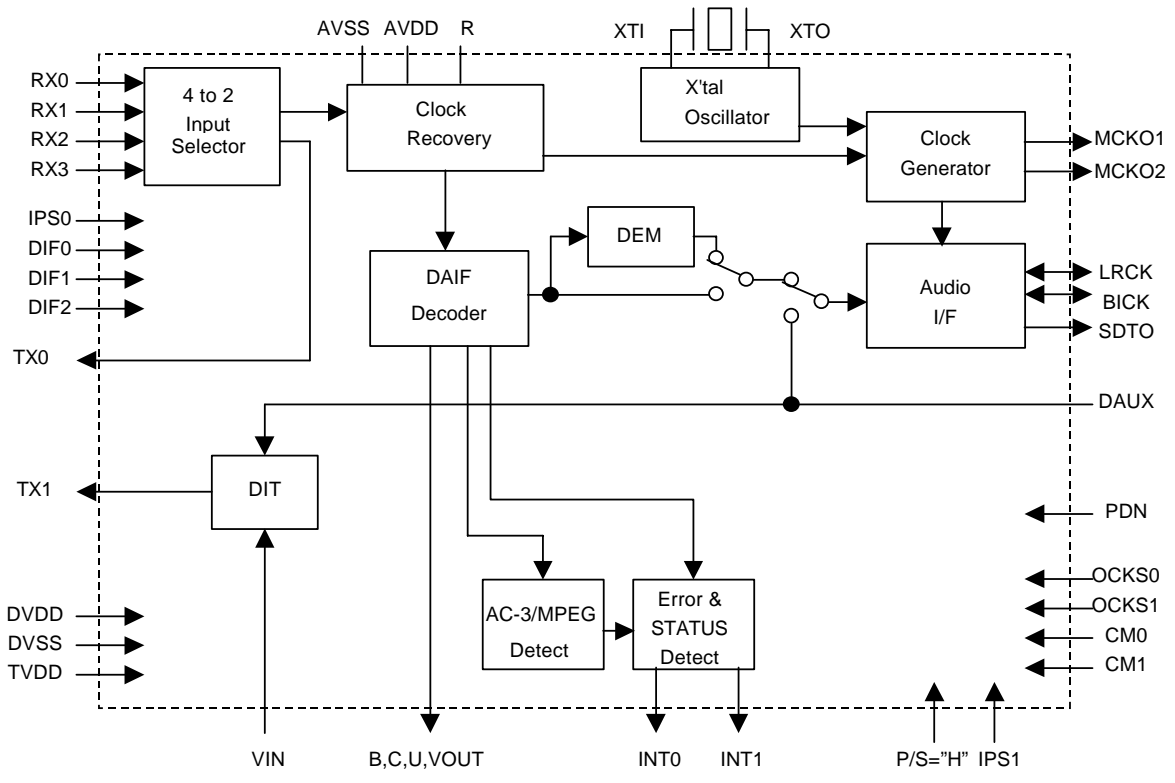
DIR IC PIN ASSIGNMENT & BLOCK DIAGRAM
PIN ASSIGNMENT (TOP VIEW) : IC73



BLOCK DIAGRAM



Serial Control Mode



Parallel Control Mode

DIR IC PIN FUNCTION (AK4114VQ) : IC73 □

PIN/FUNCTION

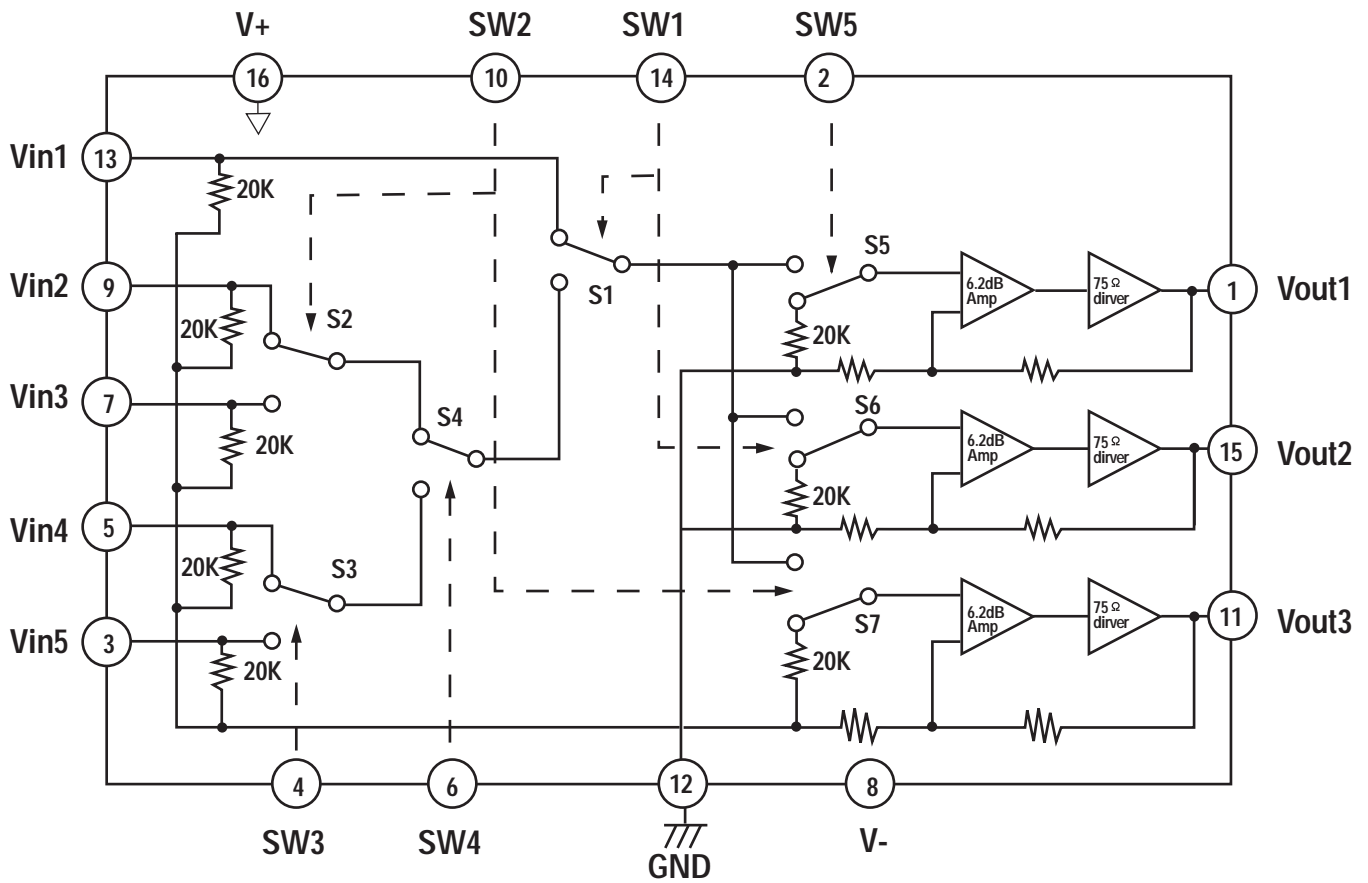
No.	Pin Name	I/O	Function
1	IPS0	I	Input Channel Select 0 Pin in Parallel Mode
	RX4	I	Receiver Channel 4 Pin in Serial Mode (Internal biased pin)
2	NC(AVSS)	I	No Connect No internal bonding. This pin should be connected to AVSS.
3	DIF0	I	Audio Data Interface Format 0 Pin in Parallel Mode
	RX5	I	Receiver Channel 5 Pin in Serial Mode (Internal biased pin)
4	TEST2	I	TEST 2 pin This pin should be connect to AVSS.
5	DIF1	I	Audio Data Interface Format 1 Pin in Parallel Mode
	RX6	I	Receiver Channel 6 Pin in Serial Mode (Internal biased pin)
6	NC(AVSS)	I	No Connect No internal bonding. This pin should be connected to AVSS.
7	DIF2	I	Audio Data Interface Format 2 Pin in Parallel Mode
	RX7	I	Receiver Channel 7 Pin in Serial Mode (Internal biased pin)
8	IPS1	I	Input Channel Select 1 Pin in Parallel Mode
	IIC	I	IIC Select Pin in Serial Mode. “L”: 4-wire Serial, “H”: IIC
9	P/SN	I	Parallel/Serial Select Pin “L”: Serial Mode, “H”: Parallel Mode
10	XTL0	I	X'tal Frequency Select 0 Pin
11	XTL1	I	X'tal Frequency Select 1 Pin
12	VIN	I	V-bit Input Pin for Transmitter Output
13	TVDD	I	Input Buffer Power Supply Pin, 3.3V or 5V
14	NC	I	No Connect No internal bonding. This pin should be open or connected to DVSS.
15	TX0	O	Transmit Channel (Through Data) Output 0 Pin
16	TX1	O	When TX bit = “0”, Transmit Channel (Through Data) Output 1 Pin. When TX bit = “1”, Transmit Channel (DAUX Data) Output Pin (Default).
17	BOUT	O	Block-Start Output Pin for Receiver Input “H” during first 40 frames.
18	COUT	O	C-bit Output Pin for Receiver Input
19	UOUT	O	U-bit Output Pin for Receiver Input
20	VOUT	O	V-bit Output Pin for Receiver Input
21	DVDD	I	Digital Power Supply Pin, 3.3V
22	DVSS	I	Digital Ground Pin
23	MCKO1	O	Master Clock Output 1 Pin
24	LRCK	I/O	Channel Clock Pin
25	SDTO	O	Audio Serial Data Output Pin
26	BICK	I/O	Audio Serial Data Clock Pin
27	MCKO2	O	Master Clock Output 2 Pin
28	DAUX	I	Auxiliary Audio Data Input Pin
29	XTO	O	X'tal Output Pin
30	XTI	I	X'tal Input Pin

PIN/FUNCTION (Continued)

No.	Pin Name	I/O	Function
31	PDN	I	Power-Down Mode Pin When “L”, the AK4114 is powered-down and reset.
32	CM0	I	Master Clock Operation Mode 0 Pin in Parallel Mode
	CDTO	O	Control Data Output Pin in Serial Mode, IIC= “L”.
	CAD1	I	Chip Address 1 Pin in Serial Mode, IIC= “H”.
33	CM1	I	Master Clock Operation Mode 1 Pin in Parallel Mode
	CDTI	I	Control Data Input Pin in Serial Mode, IIC= “L”.
	SDA	I/O	Control Data Pin in Serial Mode, IIC= “H”.
34	OCKS1	I	Output Clock Select 1 Pin in Parallel Mode
	CCLK	I	Control Data Clock Pin in Serial Mode, IIC= “L”
	SCL	I	Control Data Clock Pin in Serial Mode, IIC= “H”
35	OCKS0	I	Output Clock Select 0 Pin in Parallel Mode
	CSN	I	Chip Select Pin in Serial Mode, IIC= “L”.
	CAD0	I	Chip Address 0 Pin in Serial Mode, IIC= “H”.
36	INT0	O	Interrupt 0 Pin
37	INT1	O	Interrupt 1 Pin
38	AVDD	I	Analog Power Supply Pin, 3.3V
39	R	-	External Resistor Pin 18k Ω +/-1% resistor should be connected to AVSS externally.
40	VCOM	-	Common Voltage Output Pin 0.47 μ F capacitor should be connected to AVSS externally.
41	AVSS	I	Analog Ground Pin
42	RX0	I	Receiver Channel 0 Pin (Internal biased pin) This channel is default in serial mode.
43	NC(AVSS)	I	No Connect No internal bonding. This pin should be connected to AVSS.
44	RX1	I	Receiver Channel 1 Pin (Internal biased pin)
45	TEST1	I	TEST 1 pin. This pin should be connected to AVSS.
46	RX2	I	Receiver Channel 2 Pin (Internal biased pin)
47	NC(AVSS)	I	No Connect No internal bonding. This pin should be connected to AVSS.
48	RX3	I	Receiver Channel 3 Pin (Internal biased pin)

Note 1. All input pins except internal biased pins should not be left floating.

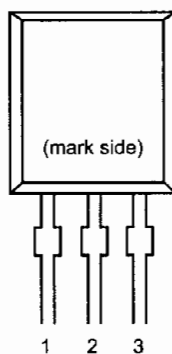
■ BLOCK DIAGAM (NJM2296M) : IC41, 42, 43



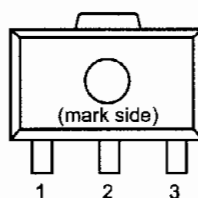
*** Normally mute**
Above circuits show that the switches are set at low.

PIN CONFIGURATION

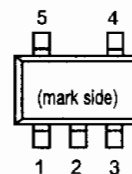
• TO-92



• SOT-89



• SOT-23-5



PIN DESCRIPTION

• TO-92

Pin No.	Symbol
1	OUT
2	V _{DD}
3	GND

• SOT-89

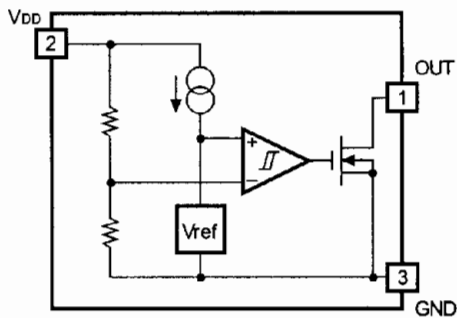
Pin No.	Symbol
1	OUT
2	V _{DD}
3	GND

• SOT-23-5

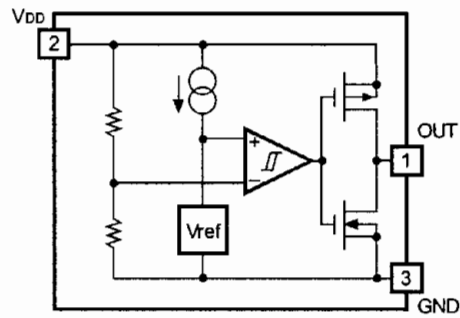
Pin No.	Symbol
1	OUT
2	V _{DD}
3	GND
4	NC
5	NC

BLOCK DIAGRAMS

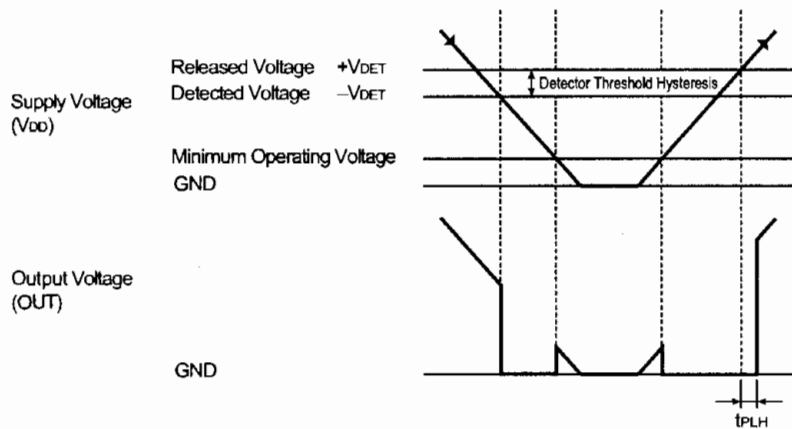
• Nch Open Drain Output (R5VTxA)



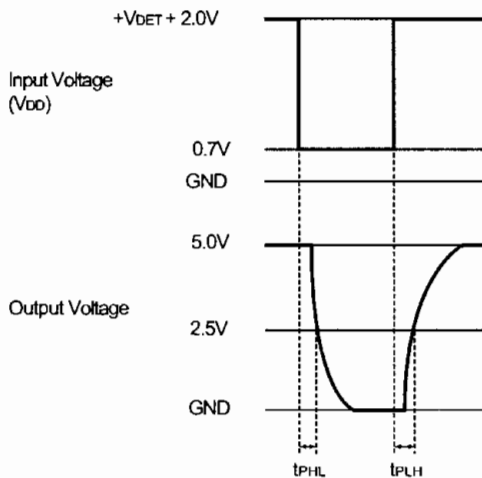
• CMOS Output (R5VTC)



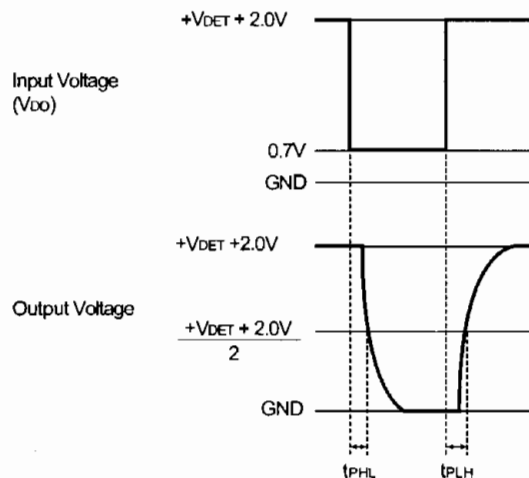
TIME CHART



DEFINITION OF OUTPUT DELAY TIME t_{PLH}



Nch Open Drain Output



CMOS Output

OPERATION

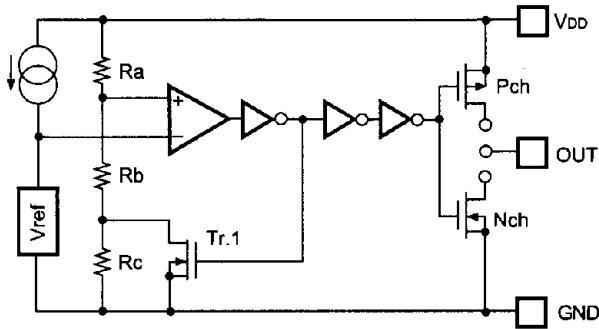


FIG. 1 Block Diagram

- In R5VTXA, Nch Tr. drain is connected to OUT pin.
- In R5VTC, Nch Tr. drain and Pch Tr. drain are connected to OUT pin.

Operation Diagram

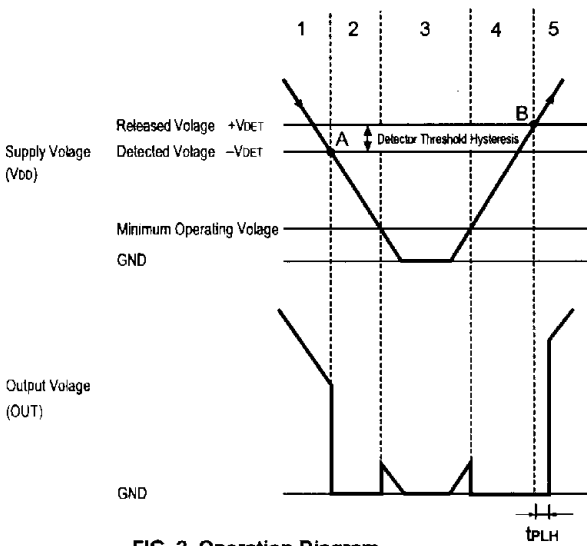


FIG. 2 Operation Diagram

Step	Step 1	Step 2	Step 3	Step 4	Step 5
Comparator(+) Pin Input Voltage	I	II	II	II	I
Comparator Output	H	L	Indefinite	L	H
Tr. 1	OFF	ON	Indefinite	ON	OFF
Output Tr.	Pch	ON	Indefinite	OFF	ON
	Nch	OFF	ON	Indefinite	ON

$$I. \frac{R_b + R_c}{R_a + R_b + R_c} \cdot V_{DD}$$

$$II. \frac{R_b}{R_a + R_b} \cdot V_{DD}$$

Step 1. Output Voltage is equal to Power Source Voltage (V_{DD}).

Step 2. When Input Voltage to Comparator reaches the state of $V_{ref} \geq V_{DD} \cdot (R_b + R_c) / (R_a + R_b + R_c)$ at Point A (Detected Voltage $-V_{DET}$), the output of Comparator is reserved, so that Output Voltage becomes GND.

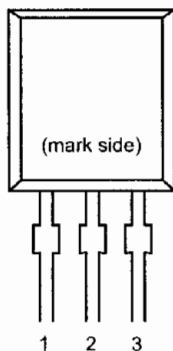
Step 3. In the case of CMOS Output. Output Voltage becomes unstable when Supply Voltage (V_{DD}) is smaller than Minimum Operating Voltage. In the case of Nch Open Drain Output, a pulled-up voltage is output.

Step 4. Output Voltage becomes equal to GND.

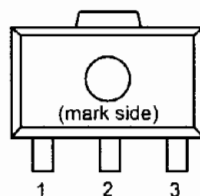
Step 5. When Input Voltage to Comparator reaches the state of $V_{ref} \leq V_{DD} \cdot (R_b) / (R_a + R_b)$ at Point B (Released Voltage $+V_{DET}$), the output of Comparator is reversed, so that Output Voltage becomes equal to Supply Voltage (V_{DD}).

PIN CONFIGURATION

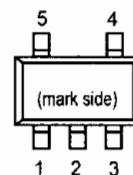
• TO-92



• SOT-89



• SOT-23-5



PIN DESCRIPTION

• TO-92

Pin No	Symbol
1	OUT
2	V _{DD}
3	GND

• SOT-89

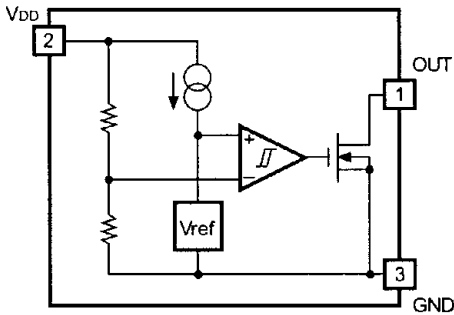
Pin No	Symbol
1	OUT
2	V _{DD}
3	GND

• SOT-23-5

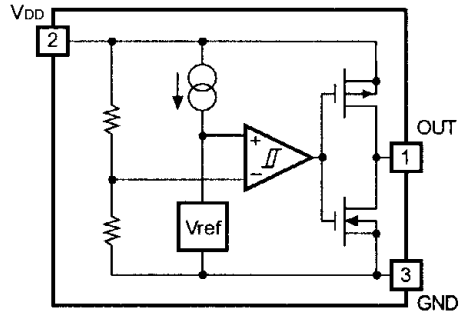
Pin No	Symbol
1	OUT
2	V _{DD}
3	GND
4	NC
5	NC

BLOCK DIAGRAMS

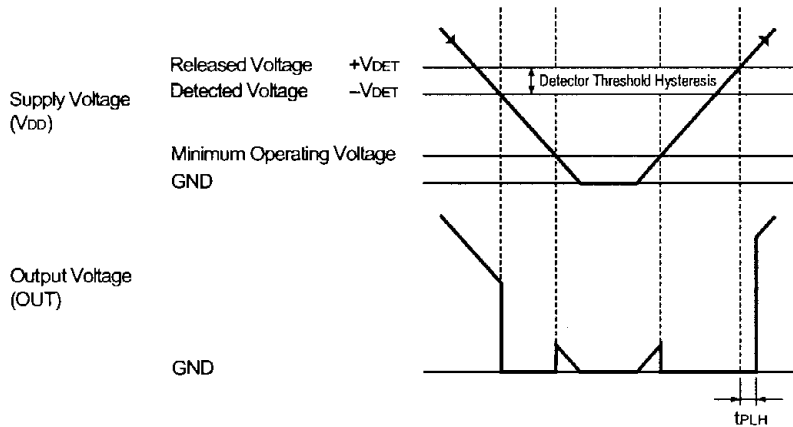
• Nch Open Drain Output (R×5VL×A)



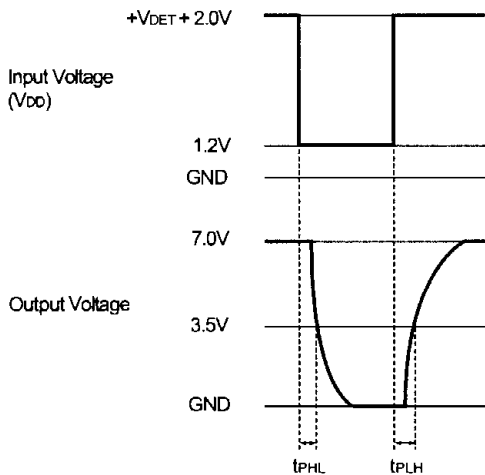
• CMOS Output (R×5VL×C)



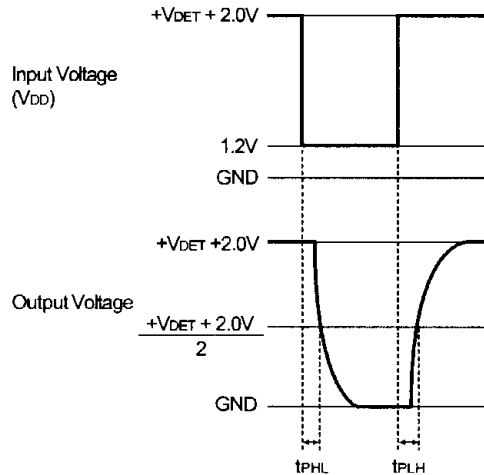
TIME CHART



DEFINITION OF OUTPUT DELAY TIME tPLH



Nch Open Drain Output



CMOS Output

OPERATION

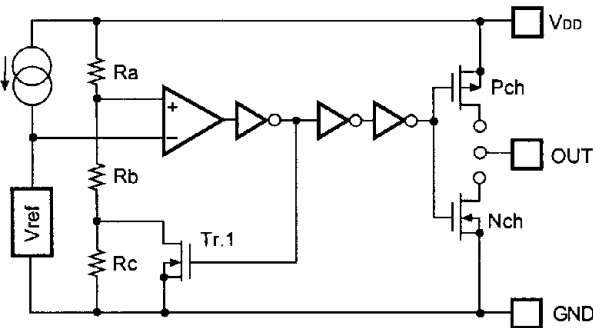


FIG. 1 Block Diagram

- In R5VLxA, Nch Tr. drain is connected to OUT pin.
- In R5VLxC, Nch Tr. drain and Pch Tr. drain are connected to OUT pin.

Operation Diagram

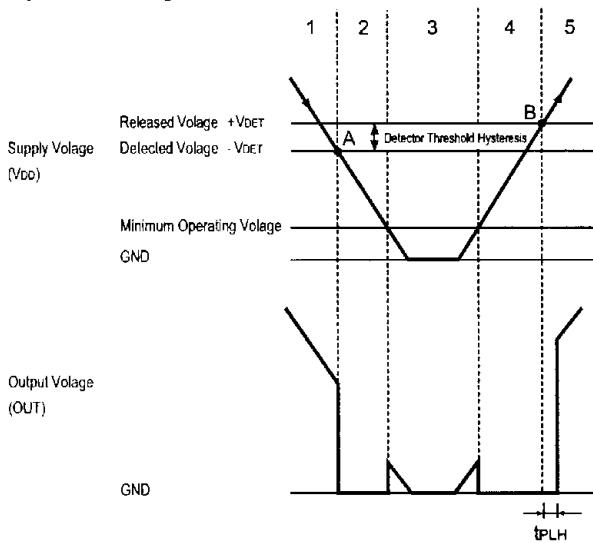


FIG. 2 Operation Diagram

Step	Step 1	Step 2	Step 3	Step 4	Step 5
Comparator(+)Pin Input Voltage	I	II	II	II	I
Comparator Output	H	L	Indefinite	L	H
Tr. 1	OFF	ON	Indefinite	ON	OFF
Output Tr.	Pch	ON	OFF	OFF	ON
	Nch	OFF	ON	Indefinite	ON

$$I. \frac{R_b + R_c}{R_a + R_b + R_c} \cdot V_{DD}$$

$$II. \frac{R_b}{R_a + R_b} \cdot V_{DD}$$

Step 1. Output Voltage is equal to Power Source Voltage (V_{DD}).

Step 2. When Input Voltage to Comparator reaches the state of $V_{ref} \geq V_{DD} \cdot (R_b + R_c) / (R_a + R_b + R_c)$ at Point A (Detected Voltage $-V_{DET}$), the output of Comparator is reserved, so that Output Voltage becomes GND.

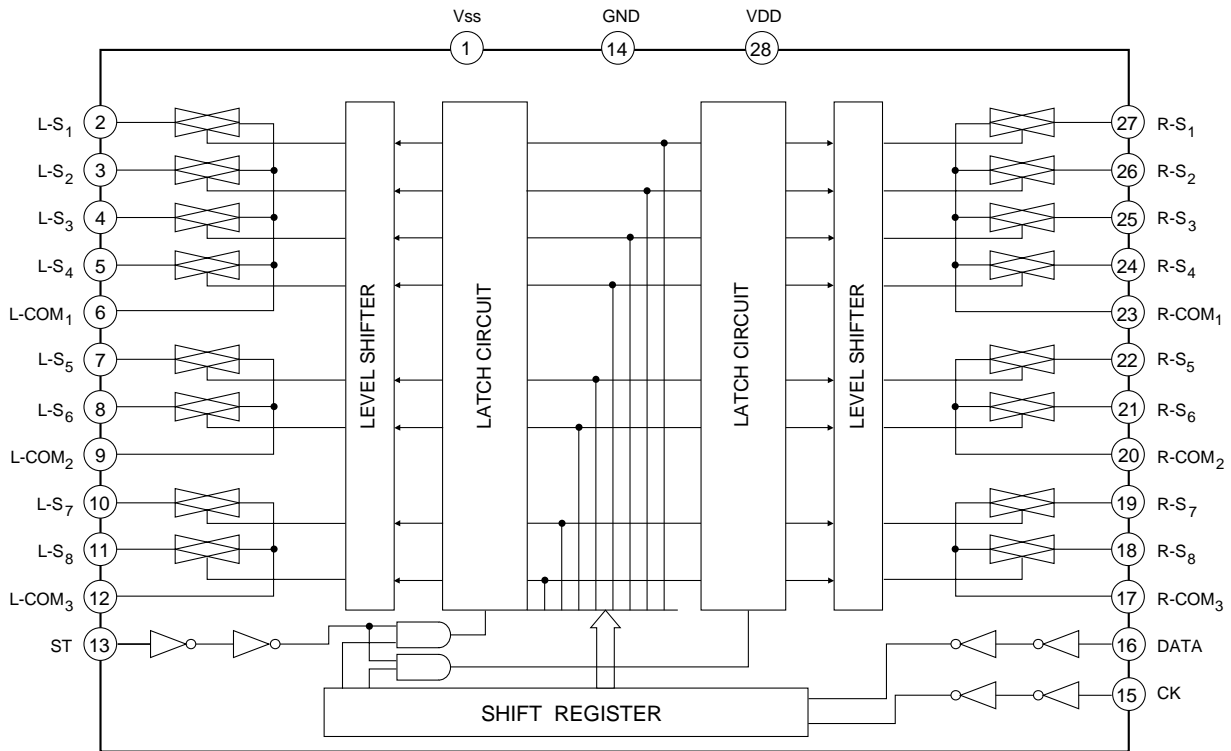
Step 3. In the case of CMOS Output. Output Voltage becomes unstable when Supply Voltage (V_{DD}) is smaller than Minimum Operating Voltage. In the case of Nch Open Drain Output, a pulled-up voltage is output.

Step 4. Output Voltage becomes equal to GND.

Step 5. When Input Voltage to Comparator reaches the state of $V_{ref} \leq V_{DD} \cdot (R_b) / (R_a + R_b)$ at Point B (Released Voltage $+V_{DET}$), the output of Comparator is reserved, so that Output Voltage becomes equal to Supply Voltage (V_{DD}).

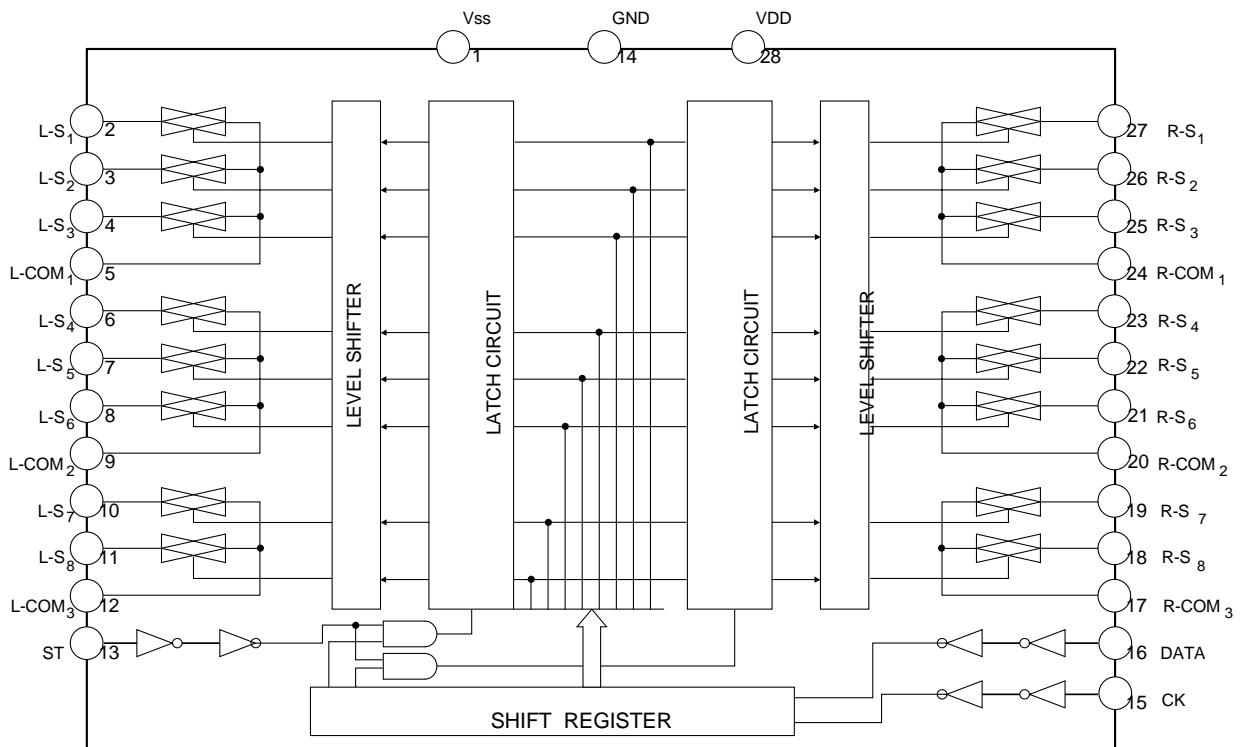
TC9164AF (FUNCTION/INPUT) : IC23

■ BLOCK DIAGRAM



TC9163AF (FUNCTION/INPUT) : IC21,24

■ BLOCK DIAGRAM



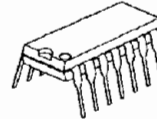
DUAL SUPPLY WIDE BAND 3ch VIDEO AMPLIFIER

■ GENERAL DESCRIPTION

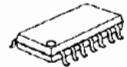
The **NJM2581** is a dual supply voltage wide band 3ch video amplifier. It is suitable for Y, Pb, and Pr signal because frequency range is 50MHz.

The **NJM2581** is suitable for Set Top Box, AV amplifier, and other high quality AV systems.

■ PACKAGE OUTLINE



NJM2581D

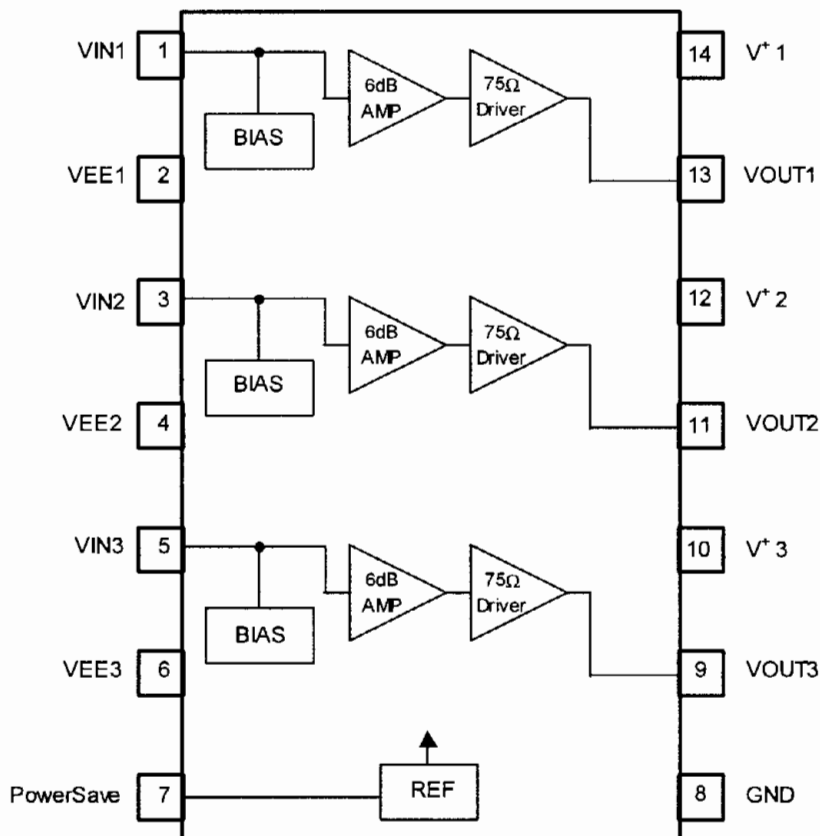


NJM2581M

■ FEATURES

- Operating Voltage ± 4.5 to $\pm 5.5V$
- Wide frequency range 50MHz at 0dB typ.
- Internal 6dB Amplifier
- Internal 75Ω Driver Circuit (2-system drive)
- Power Save Circuit
- Bipolar Technology
- Package Outline DIP14, DMP14

■ BLOCK DIAGRAM



■ EQUIVALENT CIRCUIT

PIN No.	PIN NAME	FUNCTION	INSIDE EQUIVALENT CIRCUIT
1 3 5	VIN1 VIN2 VIN3	Input	
13 11 9	VOUT1 VOUT2 VOUT3	Output	
7	PowerSave	Power Save	
14 12 10	V ⁺ 1 V ⁺ 2 V ⁺ 3	V ⁺	_____
2 4 6	VEE1 VEE2 VEE3	V ⁻	_____
8	GND	GND	_____

BLOCK DIAGRAM (IC74)

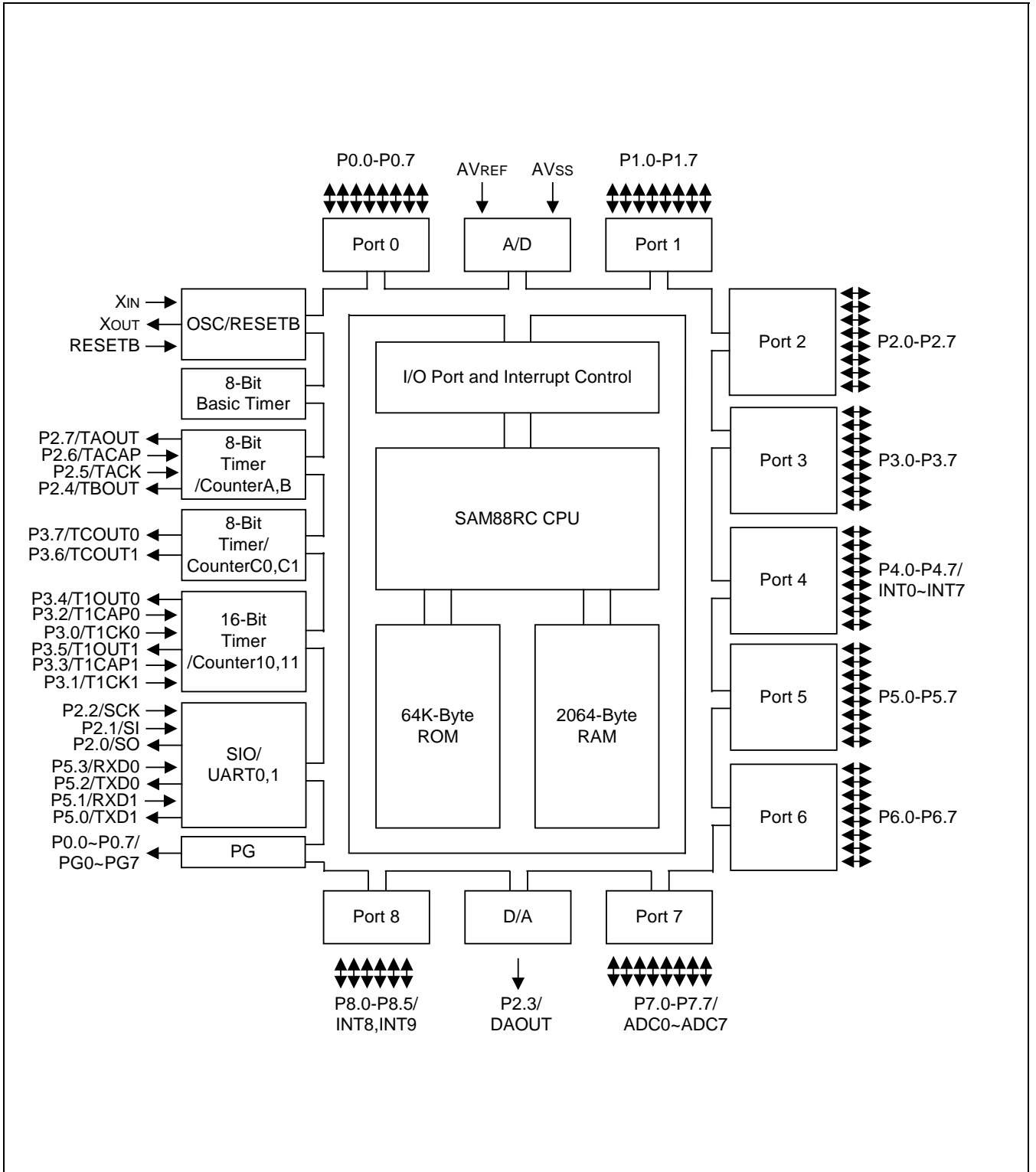


Figure 1-1. S3C84BB/F84BB Block Diagram

PIN ASSIGNMENT (IC74)

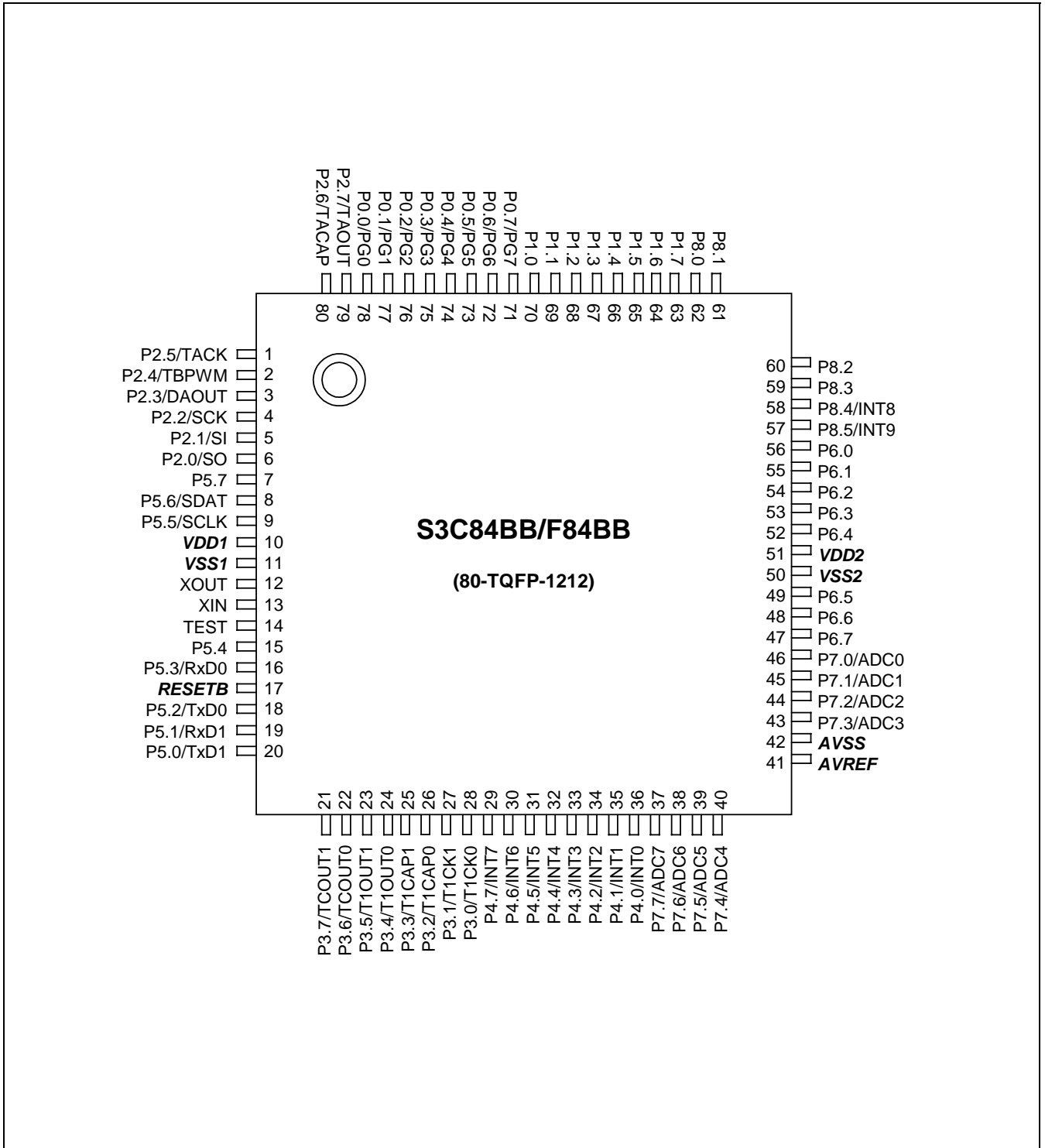


Figure 1-3. S3C84BB/F84BB Pin Assignment (80-TQFP)

PIN DESCRIPTIONS (IC74)

Table 1-1. S3C84BB/F84BB Pin Descriptions (80-QFP)

Pin Name	Pin Type	Pin Description	Circuit Type	Pin Number	Share Pins
P0.0 - P0.7	I/O	Bit programmable port; input or output mode selected by software; input or push-pull output. Software assignable pull-up. Alternately, P0.0-P0.7 can be used as the PG output port (PG0-PG7).	D	80-73	PG0-PG7
P1.0 - P1.7	I/O	Bit programmable port; input or output mode selected by software; input or push-pull output. Software assignable pull-up.	D	72-65	
P2.0 - P2.7	I/O	Bit programmable port; input or output mode selected by software; input or push-pull output. Software assignable pull-up. Alternately, P2.0~P2.7 can be used as I/O for TIMERA, TIMERB, D/A, SIO	D,D-2	8-1	SO SI SCK DAOUT TBPWM TACK TACAP TAOUT
P3.0 - P3.7	I/O	Bit programmable port; input or output mode selected by software; input or push-pull output. Software assignable pull-up. Alternately, P3.0~P3.7 can be used as I/O for TIMERC0/C1, TIMER10/11	D	30-23	T1CK0 T1CK1 T1CAP0 T1CAP1 T1OUT0 T1OUT1 TCOUT0 TCOUT1

Table 1-1. S3C84BB/F84BB Pin Descriptions (80-QFP) (Continued)

Pin Name	Pin Type	Pin Description	Circuit Type	Pin Number	Share Pins
P4.0 - P4.7	I/O	Bit programmable port; input or output mode selected by software; input or push-pull output. Software assignable pull-up. P4.0-P4.7 can alternately be used as inputs for external interrupts INT0-INT7, respectively (with noise filters and interrupt controller)	D-1	38-31	INT0-INT7
P5.0 - P5.7	I/O	Bit programmable port; input or output mode selected by software; input or push-pull output. Software assignable pull-up. Alternately, P5.0~P5.3 can be used as I/O for serial por, UART0, UART1, respectively.	G	22-17,11-9	TxD1 RxD1 TxD0 RxD0
P6.0 - P6.7	O	N-channel, open-drain output only port.	F	58-54,51-49	
P7.0 - P7.7	I	General-purpose digital input ports. Alternatively used as analog input pins for A/D converter modules.	E	48-45,42-39	ADC0-ADC7
P8.0 - P8.5	I/O	Bit programmable port; input or output mode selected by software; input or push-pull output. Software assignable pull-up. P8.4, P8.5 can alternately be used as inputs for external interrupts INT8, INT9, respectively (with noise filters and interrupt controller)	D,D-1	64-59	INT8,INT9

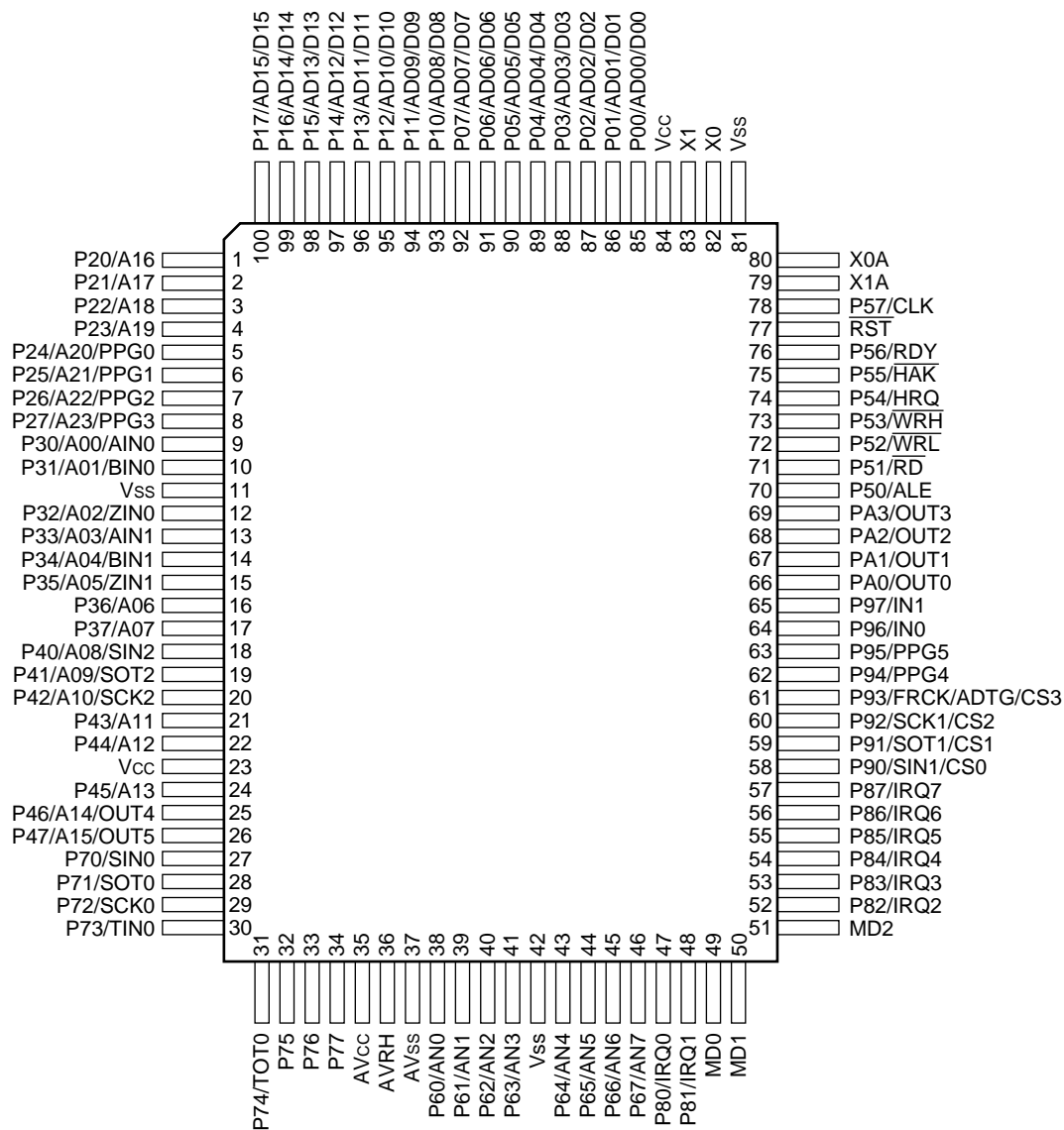
Table 1-1. S3C84BB/F84BB Pin Descriptions (80-QFP) (Continued)

Pin Name	Pin Type	Pin Description	Circuit Type	Pin Number	Share Pins
AD0 - AD7	I	Analog input pins for A/D converter module. Alternatively used as general-purpose digital input port 7.	E	48–45 42–39	P7.0–P7.7
AVREF, AVSS	-	A/D converter reference voltage and ground	-	43, 44	-
RxD0, RxD1	I/O	Serial data RxD pin for receive input and transmit output (mode 0)	D	18, 21	P5.3, P5.1
TxD0, TxD1	O	Serial data TxD pin for transmit output and shift clock input (mode 0)	D	20, 22	P5.2, P5.0
TACK	I	External clock input pins for timer A	D	3	P2.5
TACAP	I	Capture input pins for timer A	D	2	P2.6
TAOUT	O	Pulse width modulation output pins for timer A	D	1	P2.7
TBPWM	O	Carrier frequency output pins for timer B	D	4	P2.4
TCOUT0 TCOUT1	O	Timer C 8-bit PWM mode output or counter match toggle output pins	D	24,23	P3.6,P3.7
T1CK0 T1CK1	I	External clock input pins for timer 1	D	39,30	P3.0,P3.1
T1CAP0 T1CAP1	I	Capture input pins for timer 1	D	28,27	P3.2,P3.3
T1OUT0 T1OUT1	O	Timer 1 16-bit PWM mode output or counter match toggle output pins	D	26,25	P3.4,P3.5
SI,SO,SCK	I/O	Synchronous SIO pins	D	7,8,9	P2.1,P2.0, P2.2
RESETB	I	System reset pin (pull-up resistor: 240 kΩ)	B	19	-
TEST	I	Pull – down register connected internally	-	16	-
VDD1, VDD2, VSS1, VSS2	-	Power input pins	-	12,53, 13,52	-
XIN, XOUT	-	Main oscillator pins	-	15,14	-

U-COM IC PIN ASSIGNMENT & DESCRIPTIONS

■ PIN ASSIGNMENT (IC72)

(TOP VIEW)



(FPT-100P-M06)

■ PIN DESCRIPTIONS (IC72)

Pin No.		Pin name	Circuit type	Function
LQFP*1	QFP*2			
80	82	X0	A	Oscillator pin
81	83	X1	A	Oscillator pin
78	80	X0A	A	32 kHz oscillator pin
77	79	X1A	A	32 kHz oscillator pin
75	77	$\overline{\text{RST}}$	B	Reset input pin
83 to 90	85 to 92	P00 to P07	C (CMOS)	This is a general purpose I/O port. A setting in the pull-up resistance setting register (RDR0) can be used to apply pull-up resistance (RD00-RD07 = "1") . (Disabled when pin is set for output.)
		AD00 to AD07		In multiplex mode, these pins function as the external address/ data bus low I/O pins.
		D00 to D07		In non-multiplex mode, these pins function as the external data bus low output pins.
91 to 98	93 to 100	P10 to P17	C (CMOS)	This is a general purpose I/O port. A setting in the pull-up resistance setting register (RDR1) can be used to apply pull-up resistance (RD10-RD17 = "1") . (Disabled when pin is set for output.)
		AD08 to AD15		In multiplex mode, these pins function as the external address/ data bus high I/O pins.
		D08 to D15		In non-multiplex mode, these pins function as the external data bus high output pins.
99, 100, 1,2	1 to 4	P20 to P23	E (CMOS/H)	This is a general purpose I/O port. When the bits of external address output control register (HACR) are set to "1" in external bus mode, these pins function as general purpose I/O ports.
		A16 to A19		When the bits of external address output control register (HACR) are set to "0" in multiplex mode, these pins function as address high output pins (A16-A19).
		A16 to A19		When the bits of external address output control register (HACR) are set to "0" in non-multiplex mode, these pins function as address high output pins (A16-A19).
3 to 6	5 to 8	P24 to P27	E (CMOS/H)	This is a general purpose I/O port. When the bits of external address output control register (HACR) are set to "1" in external bus mode, these pins function as general purpose I/O ports.
		A20 to A23		When the bits of external address output control register (HACR) are set to "0" in multiplex mode, these pins function as address high output pins (A20-A23).
		A20 to A23		When the bits of external address output control register (HACR) are set to "0" in non-multiplex mode, these pins function as address high output pins (A20-A23).
		PPG0 to PPG3		PPG timer output pins.

(Continued)

Pin No.		Pin name	Circuit type	Function
LQFP*1	QFP*2			
7	9	P30	E (CMOS/H)	This is a general purpose I/O port.
		A00		In non-multiplex mode, this pin functions as an external address pin.
		AIN0		8/16-bit up/down timer input pin (channel 0) .
8	10	P31	E (CMOS/H)	This is a general purpose I/O port.
		A01		In non-multiplex mode, this pin functions as an external address pin.
		BIN0		8/16-bit up/down counter input pin (channel0) .
10	12	P32	E (CMOS/H)	This is a general purpose I/O port.
		A02		In non-multiplex mode, this pin functions as an external address pin.
		ZIN0		8/16-bit up/down counter input pin (channel 0)
11	13	P33	E (CMOS/H)	This is a general purpose I/O port.
		A03		In non-multiplex mode, this pin functions as an external address pin.
		AIN1		8/16-bit up/down counter input pin (channel 1) .
12	14	P34	E (CMOS/H)	This is a general purpose I/O port.
		A04		In non-multiplex mode, this pin functions as an external address pin.
		BIN1		8/16-bit up/down counter input pin (channel 1) .
13	15	P35	E (CMOS/H)	This is a general purpose I/O port.
		A05		In non-multiplex mode, this pin functions as an external address pin.
		ZIN1		8/16-bit up/down counter input pin (channel 1)
14 15	16 17	P36, P37 A06, A07	D*3 (CMOS)	This is a general purpose I/O port. In non-multiplex mode, this pin functions as an external address pin.
16	18	P40	G (CMOS/H)	This is a general purpose I/O port.
		A08		In non-multiplex mode, this pin functions as an external address pin.
		SIN2		Simple serial I/O input pin.
17	19	P41	F (CMOS)	This is a general purpose I/O port.
		A09		In non-multiplex mode, this pin functions as an external address pin.
		SOT2		Simple serial I/O output pin.
18	20	P42	G (CMOS/H)	This is a general purpose I/O port.
		A10		In non-multiplex mode, this pin functions as an external address pin.
		SCK2		Simple serial I/O clock input/output pin.

(Continued)

MB90482

Pin No.		Pin name	Circuit type	Function
LQFP*1	QFP*2			
19 20	21 22	P43, P44	F (CMOS)	This is a general purpose I/O port.
		A11, A12		In non-multiplex mode, this pin functions as an external address pin.
22	24	P45	F*4 (CMOS)	This is a general purpose I/O port.
		A13		In non-multiplex mode, this pin functions as an external address pin.
23 24	25 26	P46, P47	F (CMOS)	This is a general purpose I/O port.
		A14, A15		In non-multiplex mode, this pin functions as an external address pin.
		OUT4/OUT5		Output compare event output pins.
68	70	P50	D (CMOS)	This is a general purpose I/O port. In external bus mode, this pin functions as the ALE pin.
		ALE		In external bus mode, this pin functions as the address load enable (ALE) signal pin.
69	71	P51	D (CMOS)	This is a general purpose I/O port. In external bus mode, this pin functions as the \overline{RD} pin.
		\overline{RD}		In external bus mode, this pin functions as the read strobe output (\overline{RD}) signal pin.
70	72	P52	D (CMOS)	This is a general purpose I/O port. In external bus mode, when the WRE pin in the EPCR register is set to "1", this pin functions as the \overline{WRL} pin.
		\overline{WRL}		In external bus mode, this pin functions as the lower data write strobe output (\overline{WRL}) pin. When the WRE bit in the EPCR register is set to "0", this pin functions as a general purpose I/O port.
71	73	P53	D (CMOS)	This is a general purpose I/O port. In external bus mode with 16-bit bus width, when the WRE bit in the EPCR register is set to "1", this pin functions as the \overline{WRH} pin.
		\overline{WRH}		In external bus mode with 16-bit bus width, this pin functions as the upper data write strobe output (\overline{WRH}) pin. When the WRE bit in the EPCR register is set to "0", this pin functions as a general purpose I/O port.
72	74	P54	D (CMOS)	This is a general purpose I/O port. In external bus mode, when the HDE bit in the EPCR register is set to "1", this pin functions as the HRQ pin.
		HRQ		In external bus mode, this pin functions as the hold request input (HRQ) pin. When the HDE bit in the EPCR register is set to "0", this pin functions as a general purpose I/O port.
73	75	P55	D (CMOS)	This is a general purpose I/O port. In external bus mode, when the HDE bit in the EPCR register is set to "1", this pin functions as the \overline{HAK} pin.
		\overline{HAK}		In external bus mode, this pin functions as the hold acknowledge (\overline{HAK}) pin. When the HDE bit in the EPCR register is set to "0", this pin functions as a general purpose I/O port.

(Continued)

Pin No.		Pin name	Circuit type	Function
LQFP*1	QFP*2			
74	76	P56	D (CMOS)	This is a general purpose I/O port. In external bus mode, when the RYE bit in the EPCR register is set to "1", this pin functions as the RDY pin.
		RDY		In external bus mode, this pin functions as the external ready (RDY) input pin. When the RYE bit in the EPCR register is set to "0", this pin functions as a general purpose I/O port.
76	78	P57	D (CMOS)	This is a general purpose I/O port. In external bus mode, when the CKE bit in the EPCR register is set to "1", this pin functions as the CLK pin.
		CLK		In external bus mode, this pin functions as the machine cycle clock (CLK) output pin. When the CKE bit in the EPCR register is set to "0", this pin functions as a general purpose I/O port.
36 to 39	38 to 41	P60 to P63	H (CMOS)	These are general purpose I/O ports.
		AN0 to AN3		These are the analog input pins.
41 to 44	43 to 46	P64 to P67	H (CMOS)	These are general purpose I/O ports.
		AN4 to AN7		These are the analog input pins.
25	27	P70	G (CMOS/H)	This is a general purpose I/O port.
		SIN0		This is the UART data input pin.
26	28	P71	F (CMOS)	This is a general purpose I/O port.
		SOT0		This is the UART data output pin.
27	29	P72	G (CMOS/H)	This is a general purpose I/O port.
		SCK0		This is the UART clock I/O pin.
28	30	P73	G (CMOS/H)	This is a general purpose I/O port.
		TIN0		This is the 16-bit reload timer event input pin.
29	31	P74	F (CMOS)	This is a general purpose I/O port.
		TOT0		This is the 16-bit reload timer output pin.
30	32	P75	F*4 (CMOS)	This is a general purpose I/O port.
31	33	P76	F*5 (CMOS)	This is a general purpose I/O port.
32	34	P77	F*5 (CMOS)	This is a general purpose I/O port.
45, 46	47, 48	P80, P81	E (CMOS/H)	These are general purpose I/O ports.
		IRQ0, IRQ1		External interrupt input pins.
50 to 55	52 to 57	P82 to P87	E (CMOS/H)	These are general purpose I/O ports.
		IRQ2 to IRQ7		External interrupt input pins.

(Continued)

MB90482

(Continued)

Pin No.		Pin name	Circuit type	Function
LQFP*1	QFP*2			
56	58	P90	E (CMOS/H)	This is a general purpose I/O port.
		SIN1		Simple serial I/O data input pin.
		CS0		Chip select 0.
57	59	P91	D (CMOS)	This is a general purpose I/O port.
		SOT1		Simple serial I/O data output pin.
		CS1		Chip select 1.
58	60	P92	E (CMOS/H)	This is a general purpose I/O port.
		SCK1		Simple serial I/O data input/output pin.
		CS2		Chip select 2.
59	61	P93	E (CMOS/H)	This is a general purpose I/O port.
		FRCK		When the free run timer is in use, this pin functions as the external clock input pin.
		ADTG		When the A/D converter is in use, this pin functions as the external trigger input pin.
		CS3		Chip select 3.
60	62	P94	D (CMOS)	This is a general purpose I/O port.
		PPG4		PPG timer output pin.
61	63	P95	D (CMOS)	This is a general purpose I/O port.
		PPG5		PPG timer output pin.
62	64	P96	E (CMOS/H)	This is a general purpose I/O port.
		IN0		Input capture channel 0 trigger input pin.
63	65	P97	E (CMOS/H)	This is a general purpose I/O port.
		IN1		Input capture channel 1 trigger input pin.
64 to 67	66 to 69	PA0 to PA3	D (CMOS)	These are general purpose I/O ports.
		OUT0 to OUT3		Output compare event output pins.
33	35	AV _{cc}	—	A/D converter power supply pin.
34	36	AV _{RH}	—	A/D converter external reference voltage supply pin.
35	37	AV _{ss}	—	A/D converter power supply pin.
47 to 49	49 to 51	MD0 to MD2	J (CMOS/H)	Operating mode selection input pins.
21, 82	23, 84	V _{cc}	—	3.3 V ± 0.3 V power supply pins (V _{cc3}) .
9, 40, 79	11, 42, 81	V _{ss}	—	Power supply input pins (GND) .

*1 : LQFP : FPT-100P-M05

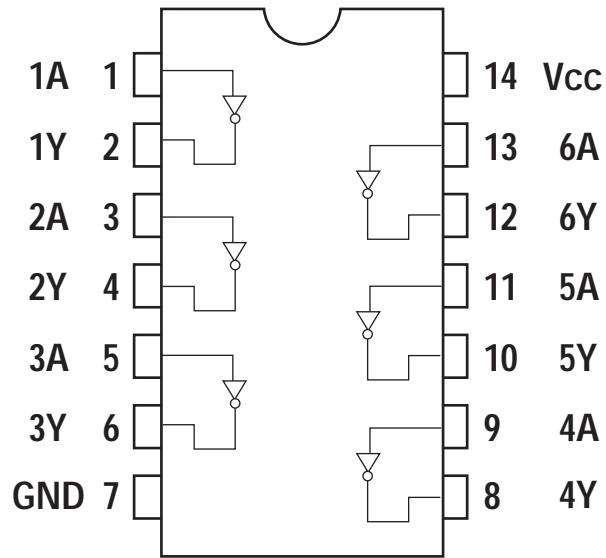
*2 : QFP : FPT-100P-M06

*3 : The circuit type of MB90V480 is E (CMOS/H).

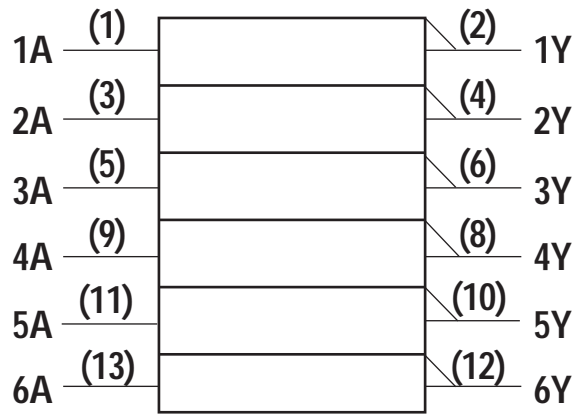
*4 : The circuit type of MB90V480 is G (CMOS/H).

*5 : The circuit type of MB90V480 is I (NMOS/H)

■ PIN ASSIGNMENT (74HCU04AFN : IC71,72,76)



■ LOGIC SYMBOL



■ TRUTH TABLE

A	Y
L	H
H	L

LOW-NOISE DUAL OPERATIONAL AMPLIFIER

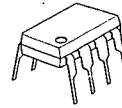
GENERAL DESCRIPTION

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.

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

PACKAGE OUTLINE



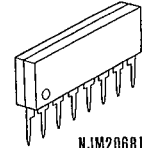
NJM2068D



NJM2068M

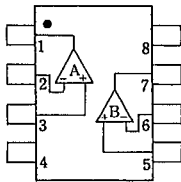


NJM2068V

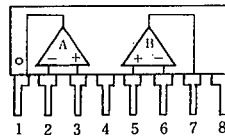


NJM2068L

PIN CONFIGURATION



NJM2068D
NJM2068M
NJM2068V

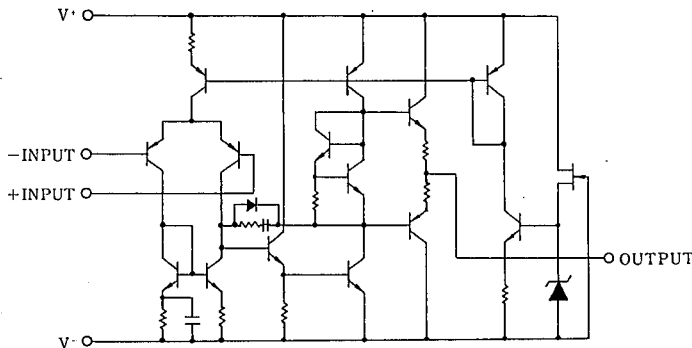


NJM2068L

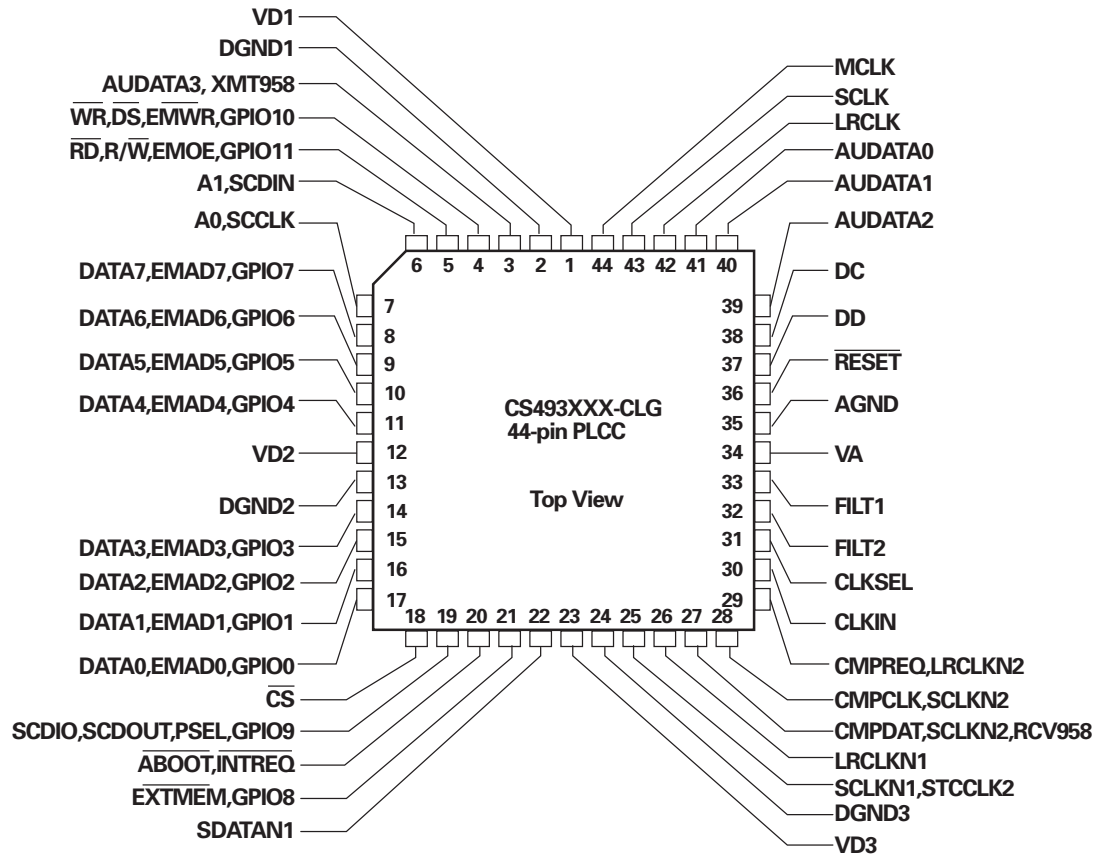
PIN FUNCTION

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)

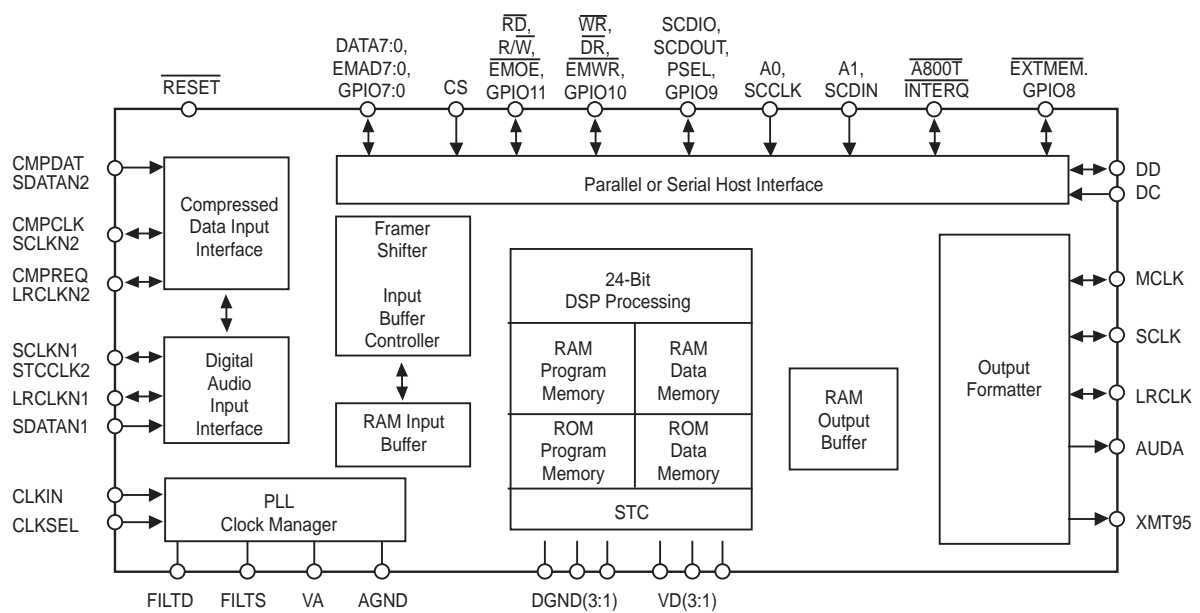


PIN ASSIGNMENT.(CS493263)



(TOP VIEW)

BLOCK DIAGRAM(CS493263)



AUDIO DSP (CS493263 - CLG : IC75)

PIN No.	Pin Name	I/O	Function
1,12,23	+VD1	-	Digital Power supply. Normally +2.5v
2,13,24	DGND	-	Digital Ground
3	AUD3	O	SPDIF transmitter output/Digital audio output(N.C)
4	WR	I	Host write strobe pin(connected to GND with an external resistor)
5	RD	I	Host parallel output enable pin(pulled up with an external resistor)
6	CS_DA	I	SPI Serial data input pin
7	CS_CK	I	Serial control clock input pin
8	EMAD7	I/O	Serial data IN/OUTPUT pins(pulled up with an external resistor)
9	EMAD6	I/O	
10	EMAD5	I/O	
11	EMAD4	I/O	
14	EMAD3	I/O	
15	EMAD2	I/O	
16	EMAD1	I/O	
17	EMAD0	I/O	
18	CS_CE	I	Host parallel chip select pin
19	SCDIO(AK_DOUT)	O	Serial control port data ouput pin
20	INTREQ	O	Control port interrupt request output pin
21	EXTMEM	I/O	External Memory Chip Selector(pulled up with an external resistor)
22	SDATAN1(SDI)	I	PCM audio data input number 1 pin
25	SCLKN1(BICK)	I	PCM audio input bit clock pin
26	LRCLKN1(LRCK)	I	PCM audio input sample rate clock pin
27	CMPDAT(SDI)	I	PCM audio data input number 2 pin
28	CMPCLK(BICK)	I	PCM audio input bit clock pin
29	CREQ(LRCK)	I	PCM audio input sample rate clock pin
30	CLKIN(XIN)	I	Master clock input(used external clock)
31	CLKSEL(GND)	I	DSP clock mode select pin: connect the GND
32	FILT1		Connects to an external filter for the on-chip phase-locked loop
33	FILT1		Connects to an external filter for the on-chip phase-locked loop
34	+2.5V	-	Analog Power supply for clock generator . Normally +2.5V
35	AGND	-	Analog ground supply for clock generator PLL.
36	RESET(CS_RST)	I	Master reset input pin
37	DBDATA	-	Reserved pin and should be pulled up with an external resistor.
38	DBCLK	-	Reserved pin and should be pulled up with an external resistor.
39	AUD2(SDO2)	O	PCM multi-format digital-audio data ouput2 pin
40	AUD1(SDO1)	O	PCM multi-format digital-audio data ouput1 pin
41	AUD0(SDO0)	O	PCM multi-format digital-audio data ouput0 pin
42	LRCLK	I	Audio output sample rate clock pin
43	SCLK(BICK)	I	Audio ouput bit clock pin
44	MCLK	I	Audio master clock output pin

74AC04 • 74ACT04

Hex Inverter

74ACT04SC : IC52, 75, 83, 84

General Description

The AC/ACT04 contains six inverters.

Features

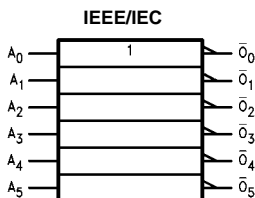
- I_{CC} reduced by 50% on 74AC only
- Outputs source/sink 24 mA
- ACT04 has TTL-compatible inputs

Ordering Code:

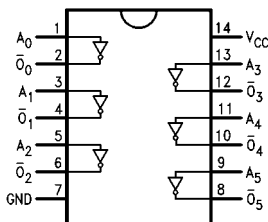
Order Number	Package Number	Package Description
74AC04SC	M14A	14-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-120, 0.150" Narrow Body
74AC04SJ	M14D	14-Lead Small Outline Package (SOP), EIAJ TYPE II, 5.3mm Wide
74AC04MTC	MTC14	14-Lead Thin Shrink Small Outline Package (TSSOP), JEDEC MO-153, 4.4mm Wide
74AC04PC	N14A	14-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300" Wide
74ACT04SC	M14A	14-Lead Small Outline Integrated Circuit (SOIC), JEDEC MS-120, 0.150" Narrow Body
74ACT04MTC	MTC14	14-Lead Thin Shrink Small Outline Package (TSSOP), JEDEC MO-153, 4.4mm Wide
74ACT04PC	N14A	14-Lead Plastic Dual-In-Line Package (PDIP), JEDEC MS-001, 0.300" Wide

Device also available in Tape and Reel. Specify by appending suffix letter "X" to the ordering code. (PC not available in Tape and Reel.)

Logic Symbol



Connection Diagram



Pin Descriptions

Pin Names	Description
A_n	Inputs
\bar{O}_n	Outputs

AKM

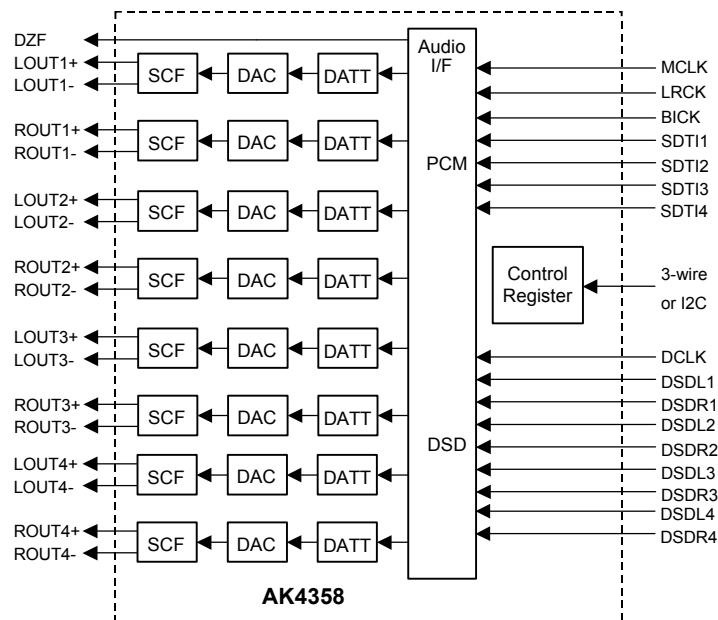
= Target Spec =

AK4358**192kHz 24-Bit 8ch DAC with DSD Input****GENERAL DESCRIPTION**

The AK4358 is eight channels 24bit DAC corresponding to digital audio system. Using AKM's advanced multi bit architecture for its modulator the AK4358 delivers a wide dynamic range while preserving linearity for improved THD+N performance. The AK4358 has full differential SCF outputs, removing the need for AC coupling capacitors and increasing performance for systems with excessive clock jitter. The AK4358 accepts 192kHz PCM data and 1-Bit DSD data, ideal for a wide range of applications including DVD-Audio and SACD.

FEATURES

- Sampling Rate Ranging from 8kHz to 192kHz
- 24Bit 8 times Digital Filter with Slow roll-off option
- THD+N: -94dB
- DR, S/N: 114dB
- High Tolerance to Clock Jitter
- Low Distortion Differential Output
- DSD Data input available
- Channel Independent Digital De-emphasis for 32, 44.1 & 48kHz sampling
- Zero Detect function
- Channel Independent Digital Attenuator with soft-transition (3 Speed mode)
- Soft Mute
- 3-wire Serial and I²C Bus μ P I/F for mode setting
- I/F format: MSB justified, LSB justified (16bit, 20bit, 24bit), I²S, TDM or DSD
- Master clock: 256fs, 384fs, 512fs or 768fs (PCM Normal Speed Mode)
128fs, 192fs, 256fs or 384fs (PCM Double Speed Mode)
128fs or 192fs (PCM Quad Speed Mode)
512fs or 768fs (DSD Mode)
- Power Supply: 4.75 to 5.25V
- 48pin LQFP Package

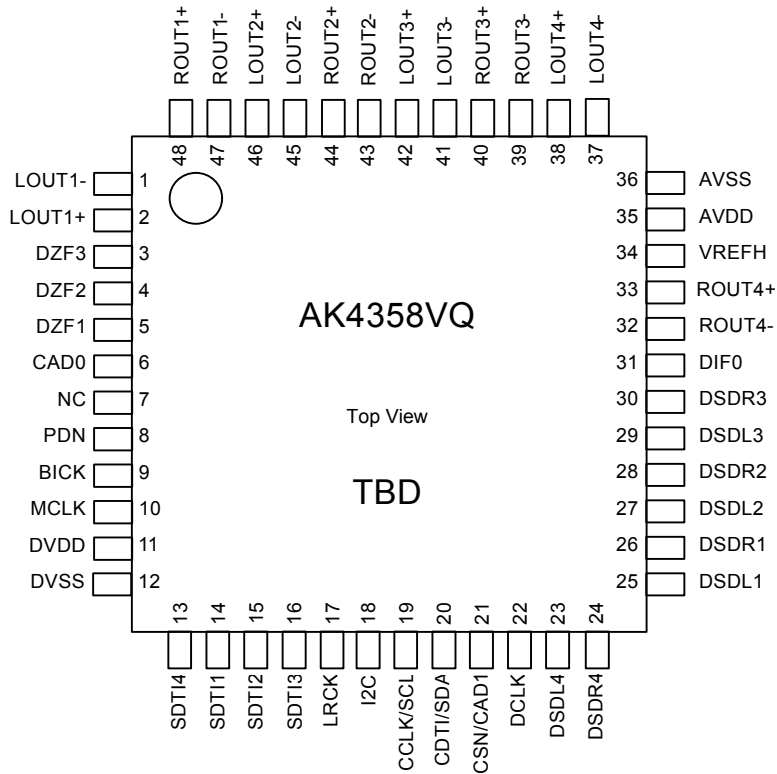


■ Ordering Guide

AK4358VQ
AKD4358

-40 ~ +85°C
Evaluation Board for AK4358

■ Pin Layout (To be determined)



PIN/FUNCTION (TBD)

No.	Pin Name	I/O	Function
	LOUT1-	O	DAC1 Lch Negative Analog Output Pin
	LOUT1+	O	DAC1 Lch Positive Analog Output Pin
	DZF1	O	Zero Input Detect 1 Pin
	DZF2	O	Zero Input Detect 2 Pin
	DZF3	O	Zero Input Detect 3 Pin
	CAD0	I	Chip Address 0 Pin
	PDN	I	Power-Down Mode Pin When at "L", the AK4358 is in the power-down mode and is held in reset. The AK4358 should always be reset upon power-up.
	BICK	I	Audio Serial Data Clock Pin
	MCLK	I	Master Clock Input Pin An external TTL clock should be input on this pin.
	DVDD	-	Digital Power Supply Pin, +4.75~+5.25V
	DVSS	-	Digital Ground Pin
	SDTI1	I	DAC1 Audio Serial Data Input Pin
	SDTI2	I	DAC2 Audio Serial Data Input Pin
	SDTI3	I	DAC3 Audio Serial Data Input Pin
	SDTI4	I	DAC4 Audio Serial Data Input Pin
	LRCK	I	L/R Clock Pin
	I2C	I	Control Mode Select Pin "L": 3-wire Serial, "H": I ² C Bus
	CCLK/SCL	I	Control Data Clock Pin I2C = "L": CCLK (3-wire Serial), I2C = "H": SCL (I ² C Bus)
	CDTI/SDA	I/O	Control Data Input Pin I2C = "L": CDTI (3-wire Serial), I2C = "H": SDA (I ² C Bus)
	CSN/CAD1	I	Chip Select Pin I2C = "L": CSN (3-wire Serial), I2C = "H": CAD1 (I ² C Bus)
	DCLK	I	DSD Clock Pin
	DSDL1	I	DAC1 DSD Lch Data Input Pin
	DSDR1	I	DAC1 DSD Rch Data Input Pin
	DSDL2	I	DAC2 DSD Lch Data Input Pin
	DSDR2	I	DAC2 DSD Rch Data Input Pin
	DSDL3	I	DAC3 DSD Lch Data Input Pin
	DSDR3	I	DAC3 DSD Rch Data Input Pin
	DSDL4	I	DAC4 DSD Lch Data Input Pin
	DSDR4	I	DAC4 DSD Rch Data Input Pin
	DIF0	I	Audio Data Interface Format 0 Pin
	VREFH	I	Positive Voltage Reference Input Pin
	AVDD	-	Analog Power Supply Pin, +4.75~+5.25V
	AVSS	-	Analog Ground Pin
	ROUT4-	O	DAC4 Rch Negative Analog Output Pin
	ROUT4+	O	DAC4 Rch Positive Analog Output Pin
	LOUT4-	O	DAC4 Lch Negative Analog Output Pin
	LOUT4+	O	DAC4 Lch Positive Analog Output Pin
	ROUT3-	O	DAC3 Rch Negative Analog Output Pin
	ROUT3+	O	DAC3 Rch Positive Analog Output Pin
	LOUT3-	O	DAC3 Lch Negative Analog Output Pin
	LOUT3+	O	DAC3 Lch Positive Analog Output Pin
	ROUT2-	O	DAC2 Rch Negative Analog Output Pin
	ROUT2+	O	DAC2 Rch Positive Analog Output Pin
	LOUT2-	O	DAC2 Lch Negative Analog Output Pin
	LOUT2+	O	DAC2 Lch Positive Analog Output Pin
	ROUT1-	O	DAC1 Rch Negative Analog Output Pin

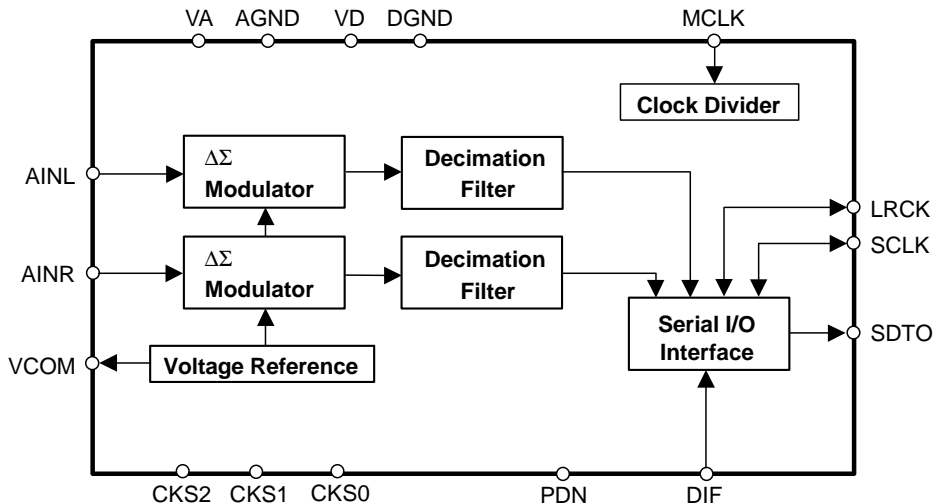
AKM = Preliminary = **AK5381**
24Bit 96kHz $\Delta\Sigma$ ADC

GENERAL DESCRIPTION

The AK5381 is a stereo A/D Converter with wide sampling rate of 4kHz ~ 96kHz and is suitable for High-end audio system. The AK5381 achieves high accuracy and low cost by using Enhanced dual bit $\Delta\Sigma$ techniques. The AK5381 requires no external components because the analog inputs are single-ended. The audio interface has two formats (MSB justified, I^2S) and can correspond to many systems like music instrument and AV receiver.

FEATURES

- Stereo $\Delta\Sigma$ ADC
- On-Chip Digital Anti-Alias Filtering
- Single-ended Input
- Digital HPF for DC-Offset cancel
- S/(N+D): 96dB@5V for 48kHz
- DR: 106dB@5V for 48kHz
- S/N: 106dB@5V for 48kHz
- Sampling Rate Ranging from 4kHz to 96kHz
- Master Clock:
 - 256fs/384fs/512fs/768fs (~ 48kHz)
 - 256fs/384fs (~ 96kHz)
- Audio Interface: Master or Slave Mode selectable
- Input level: TTL/CMOS selectable
- Output format: 24bit MSB justified / I^2S selectable
- Power Supply: 4.5 ~ 5.5V (VA)
 - 2.7 ~ 5.5V (VD at 48kHz)
 - 3.0 ~ 5.5V (VD at 96kHz)
- Ta = -40 ~ 85°C
- Small 16pin TSSOP Package
- AK5380 Pin-compatible



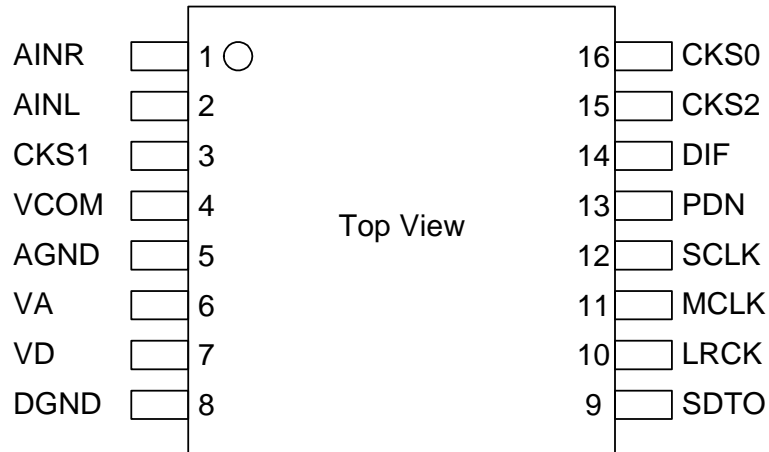
■ Ordering Guide

AK5381VT
AKD5381

-40 ~ +85°C
Evaluation Board for AK5381

16pin TSSOP (0.65mm pitch)

■ Pin Layout



■ Compatibility with AK5380

	AK5380	AK5381
Master Mode	Not Available	Available
HPF OFF	Not Available	Available
VD (Digital Supply)	4.5 to 5.5V@fs=96kHz	3.0 to 5.5V@fs=96kHz
Pin #3	NC	CKS1
Pin #15	TTL	CKS2
Pin #16	TST	CKS0

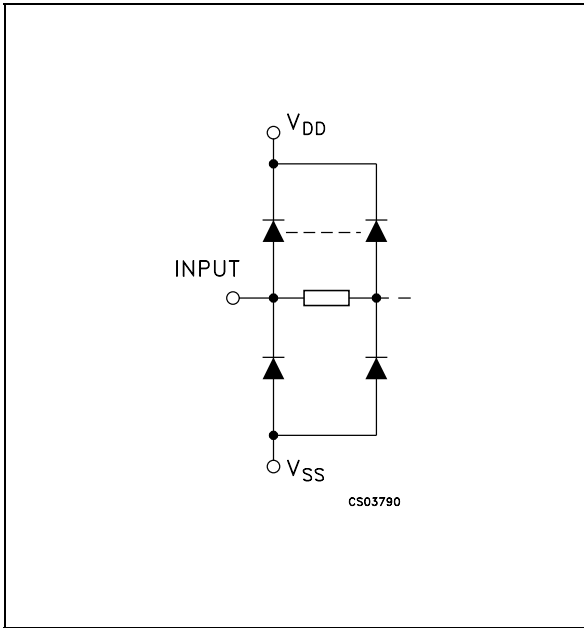
PIN / FUNCTION

No.	Pin Name	I/O	Function
1	AINR	I	Rch Analog Input Pin
2	AINL	I	Lch Analog Input Pin
3	CKS1	I	Mode Select 1 Pin
4	VCOM	O	Common Voltage Output Pin, VA/2 Bias voltage of ADC input.
5	AGND	-	Analog Ground Pin
6	VA	-	Analog Power Supply Pin, 4.5 ~ 5.5V
7	VD	-	Digital Power Supply Pin, 2.7 ~ 5.5V(fs=4k ~ 48kHz), 3.0 ~ 5.5V(fs=48k ~ 96kHz)
8	DGND	-	Digital Ground Pin
9	SDTO	O	Audio Serial Data Output Pin “L” Output at Power-down mode.
10	LRCK	I/O	Output Channel Clock Pin “L” Output in Master Mode at Power-down mode.
11	MCLK	I	Master Clock Input Pin
12	SCLK	I/O	Audio Serial Data Clock Pin “L” Output in Master Mode at Power-down mode.
13	PDN	I	Power Down Mode Pin “H”: Power up, “L”: Power down
14	DIF	I	Audio Interface Format Pin “H” : 24bit I ² S Compatible, “L” : 24bit MSB justified
15	CKS2	I	Mode Select 2 Pin
16	CKS0	I	Mode Select 0 Pin

Note: All digital input pins should not be left floating.

HCF4053B FUNCTION DIAGRAM & PIN DESCRIPTION

INPUT EQUIVALENT CIRCUIT



PIN DESCRIPTION (IC44,45,51,80,89)

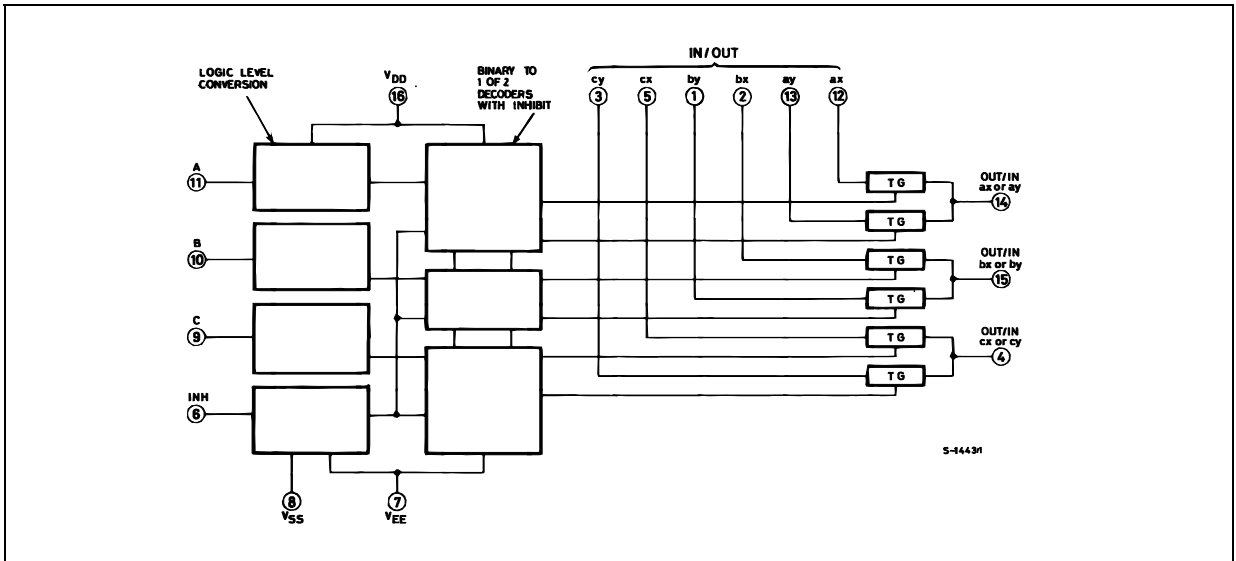
PIN No	SYMBOL	NAME AND FUNCTION
11, 10, 9	A, B, C	Binary Control Inputs
6	INH	Inhibit Inputs
12, 13, 2, 1, 5, 3	IN/OUT	ax,ay,bx,by,cx,cy Input/Output
14	OUT/IN	ax or ay
15	OUT/IN	bx or by
4	OUT/IN	cx or cy
7	V_{EE}	Supply Voltage
8	V_{SS}	Negative Supply Voltage
16	V_{DD}	Positive Supply Voltage

TRUTH TABLE

INHIBIT	C or B or A	
0	0	ax or bx or cx
0	1	ay or by or cy
1	X	NONE

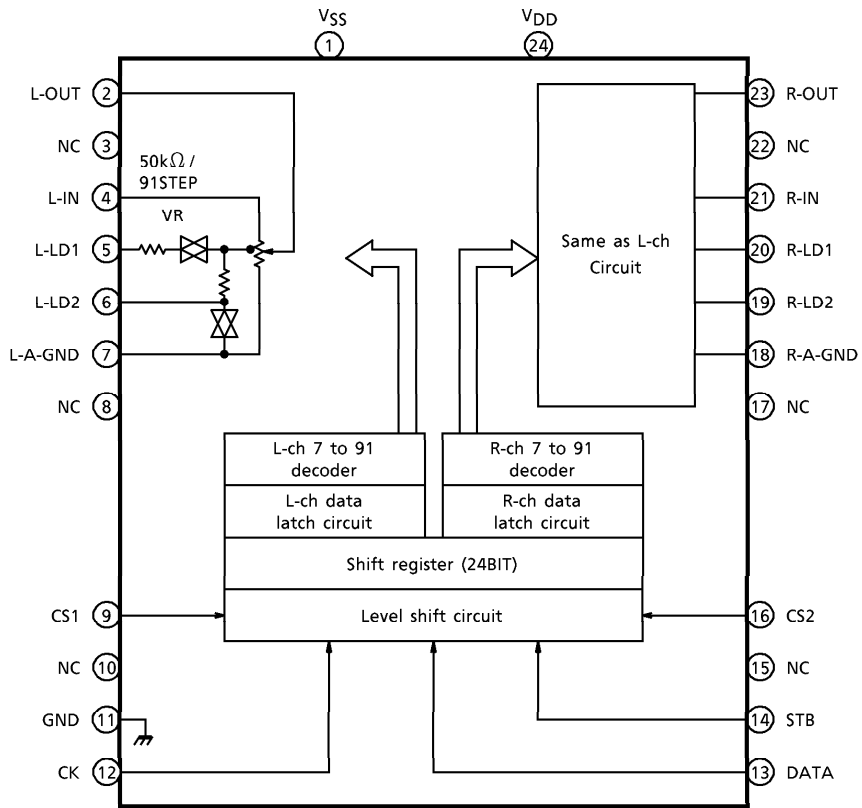
X : Don't Care

FUNCTIONAL DIAGRAM (IC44,45,51,80,89)



ELECTRONIC VOLUME CONTROL IC (IC40~44)

BLOCK DIAGRAM (TC9459F)



PIN DESCRIPTION

Numeral in () means the pin No. of TC9459F.

PIN No.	SYMBOL	PIN NAME	FUNCTION	REMARK										
1 (1)	V _{SS}	Negative power supply pin	When using dual power supplies <ul style="list-style-type: none"> ┌ V_{DD} = 6.0~17V ├ GND = 0V └ V_{SS} = -6.0~-17V When using a single power supply <ul style="list-style-type: none"> ┌ V_{DD} = 6.0~18V └ GND = V_{SS} = 0V 	—										
28 (24)	V _{DD}	Positive power supply pin												
13 (11)	GND	Digital GND pin												
3 (2)	L-OUT	Volume output pin	<ul style="list-style-type: none"> • Volume circuit 	—										
26 (23)	R-OUT													
5 (4)	L-IN	Volume input pin												
24 (21)	R-IN													
6 (5)	L-LD1	Loudness tap output pin			<table border="1"> <tr> <td></td> <td>LA1</td> <td>LA2</td> </tr> <tr> <td>LOUDNESS "ON"</td> <td>ON</td> <td>OFF</td> </tr> <tr> <td>LOUDNESS "OFF"</td> <td>OFF</td> <td>ON</td> </tr> </table>		LA1	LA2	LOUDNESS "ON"	ON	OFF	LOUDNESS "OFF"	OFF	ON
	LA1					LA2								
LOUDNESS "ON"	ON					OFF								
LOUDNESS "OFF"	OFF					ON								
23 (20)	R-LD1													
7 (6)	L-LD2													
22 (19)	R-LD2													
8 (7)	L-A-GND	Analog GND pin												
21 (18)	R-A-GND													
10 (9)	CS1	Chip select input pin	Up to 4 chips on the same bus can be used by switching over chip select code.	—										
19 (16)	CS2													
14 (12)	CK	Clock input pin	Data transfer clock input	Low threshold value input pin										
15 (13)	DATA	Data input pin	Volume setup serial data input											
16 (14)	STB	Strobe input pin	Data write strobe input											
2 (3)	NC	No connection	—	—										
27 (22)														
4														
25														
9 (8)														
20 (17)														
11														
18														
12 (10)														
17 (15)														

AMPLIFIER SECTION BIAS ADJUSTMENT

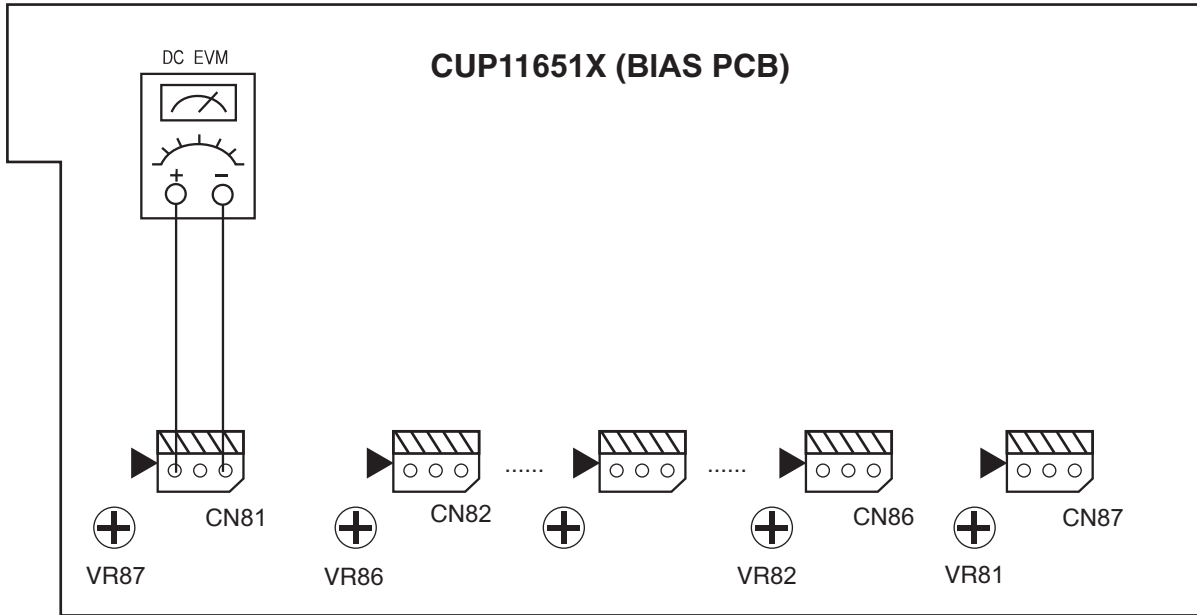
Measurement condition

. No input signal or volume position is minimum.

Standard value.

. Ideal current = 48mA (± 5%)

. Ideal DC Voltage = 25.92mV (± 5%)

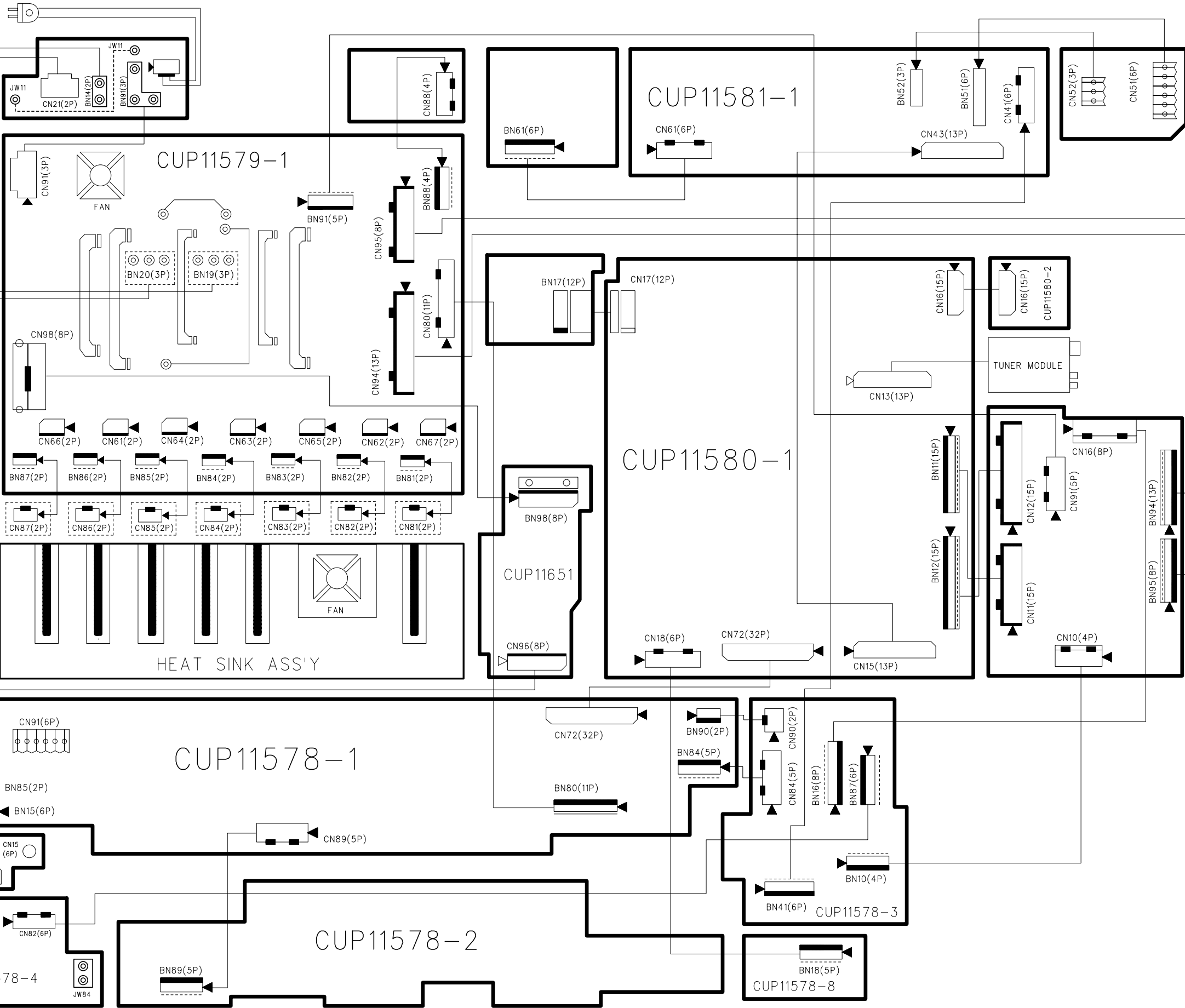


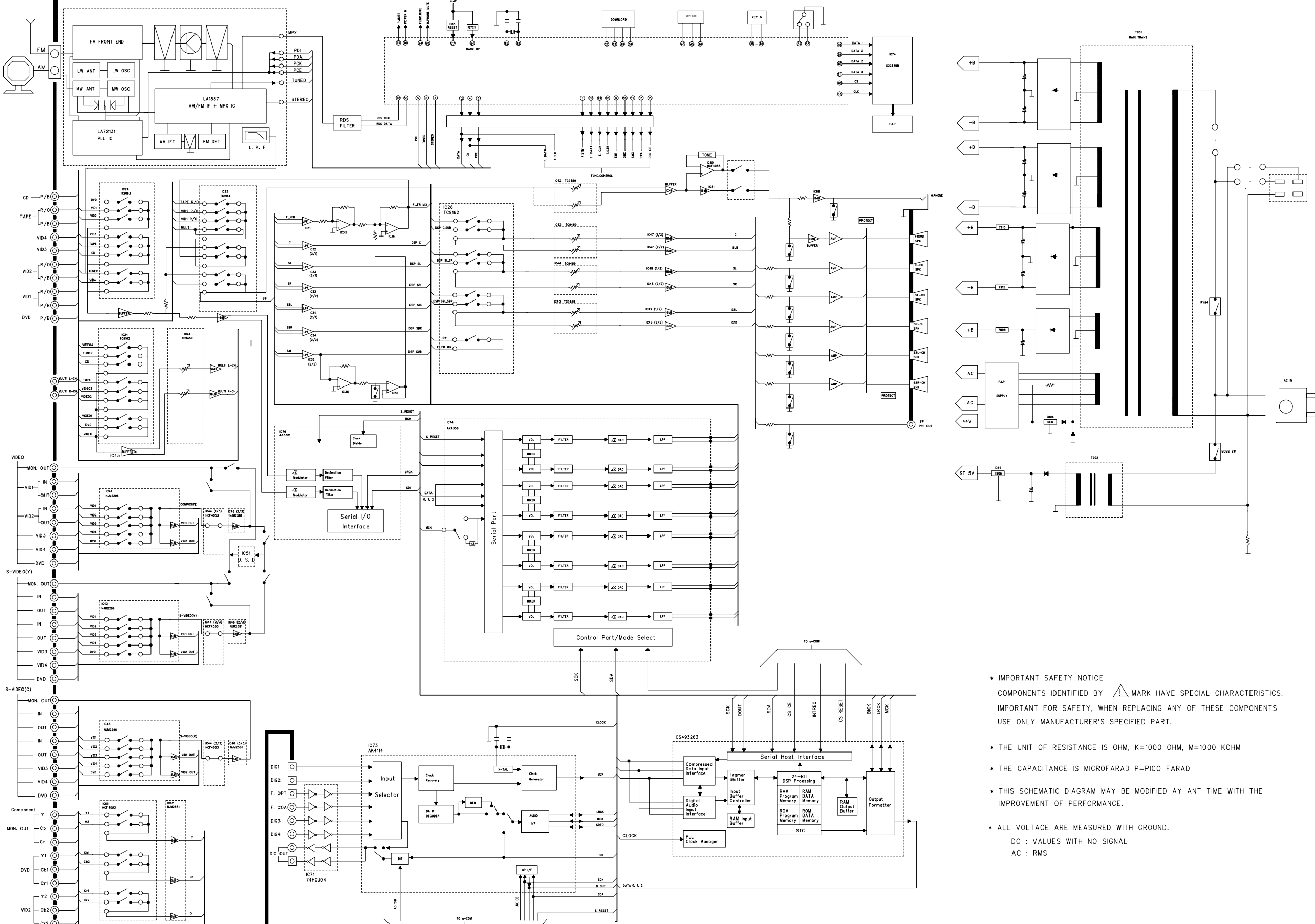
DC VOLTMETER.....Connect to CN81,CN82,CN83,CN84,CN85,CN86,CN87


NO.	Channel	Adjust for	Adjustment
1	Front Left	25.92mV (±5%)	VR83
2	Front Right	25.92mV (±5%)	VR84
3	Center	25.92mV (±5%)	VR85
4	Surround Left	25.92mV (±5%)	VR86
5	Surround Right	25.92mV (±5%)	VR87
6	Surround Back Left	25.92mV (±5%)	VR82(ONLY AVR230/330)
7	Surround Back Right	25.92mV (±5%)	VR81(ONLY AVR330)

Wiring Diagram AVR 130

USA : 120V 60Hz
EUR : 230V 50Hz





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

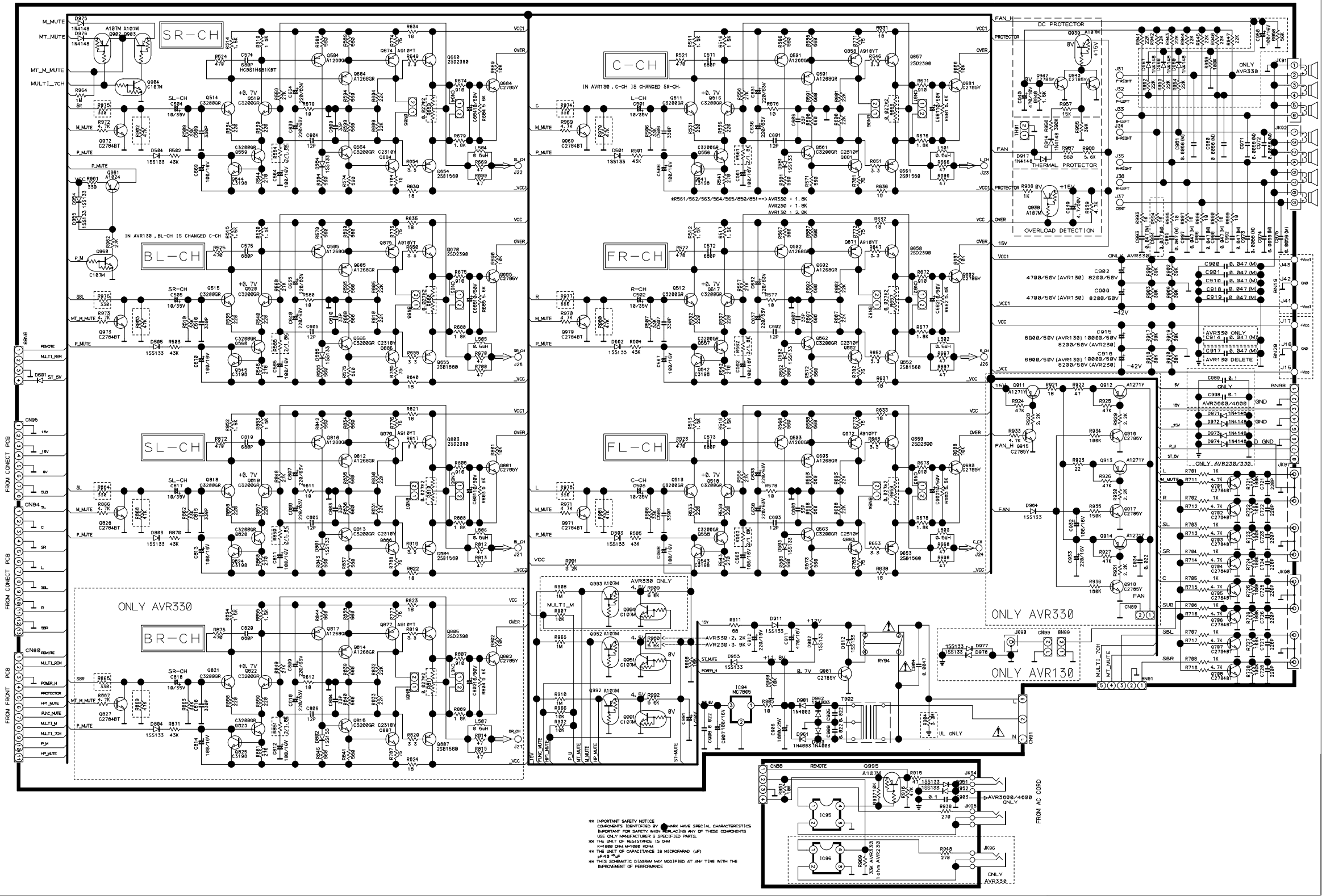
* THE UNIT OF RESISTANCE IS OHM, K=1000 OHM, M=1000 KOHM

* THE CAPACITANCE IS MICROFARAD P=PICO FARAD

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

* ALL VOLTAGE ARE MEASURED WITH GROUND.
 DC : VALUES WITH NO SIGNAL
 AC : RMS

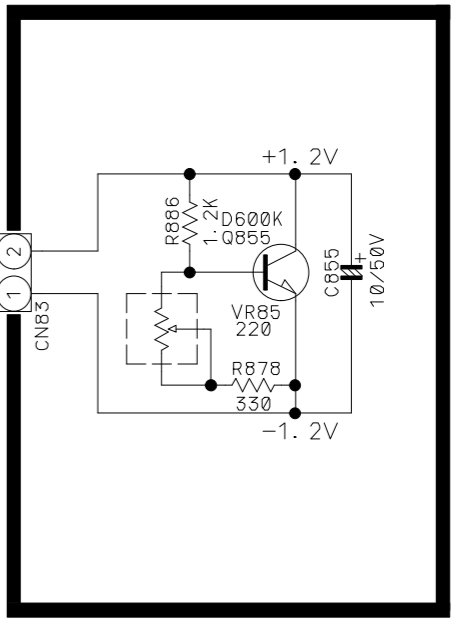
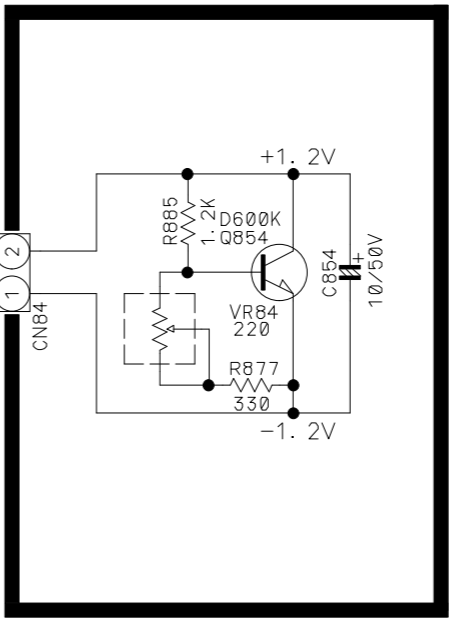
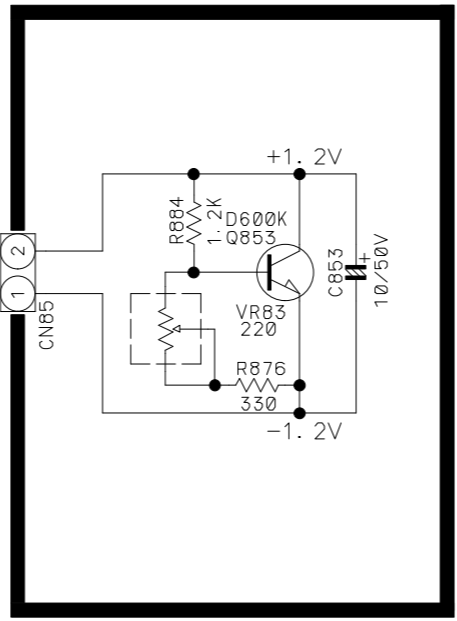
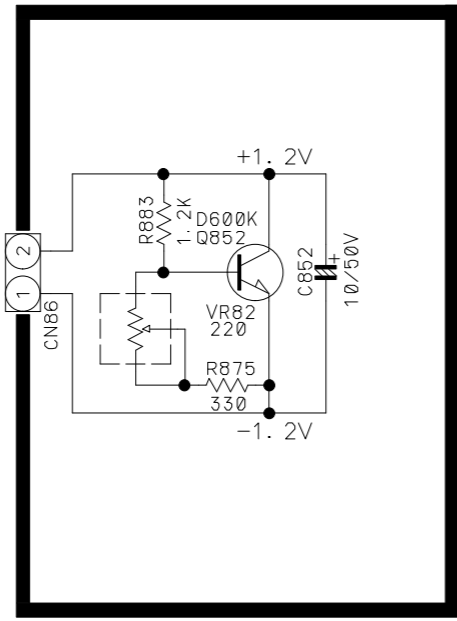
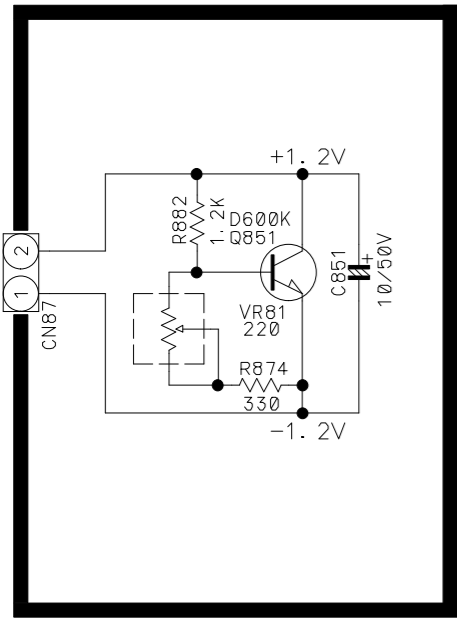
MAIN BOARD 1 (AMP)



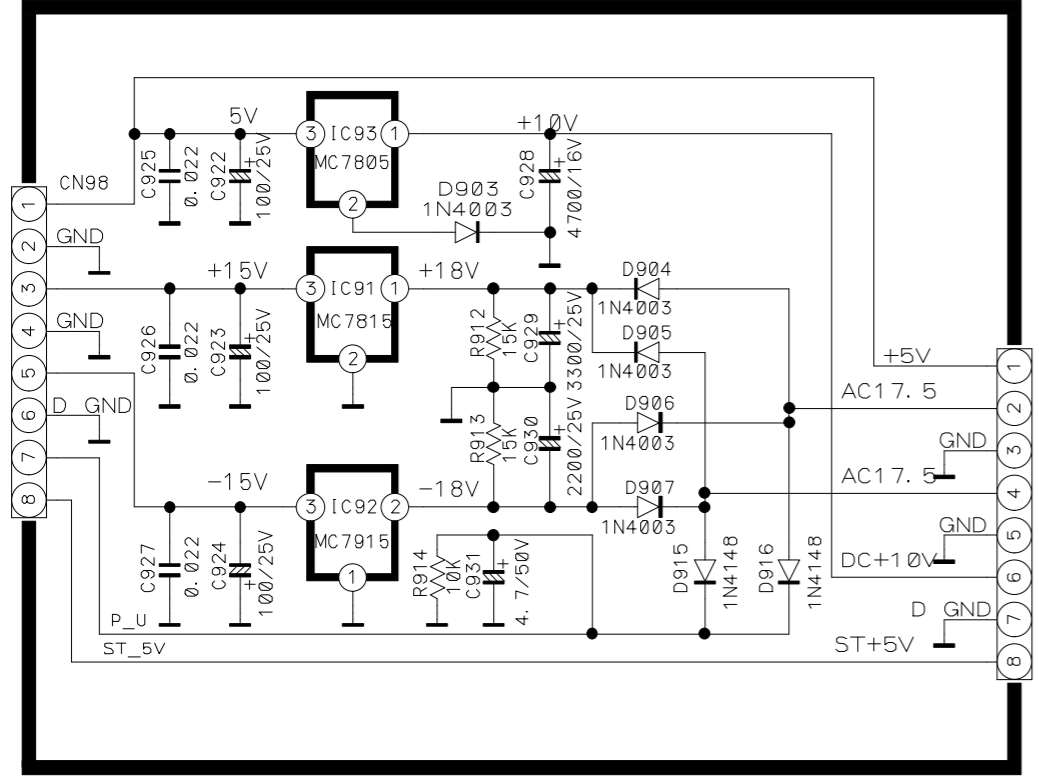
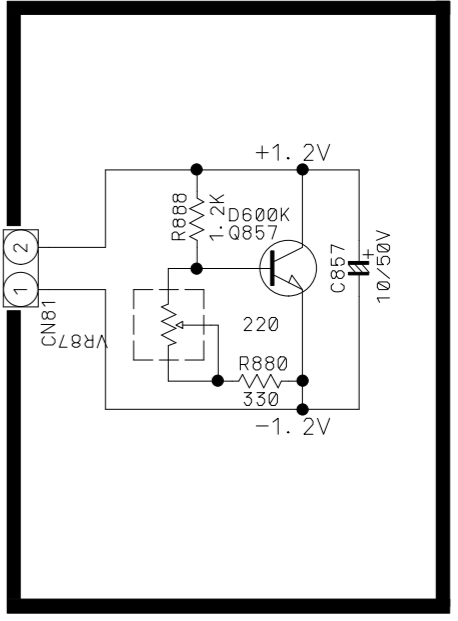
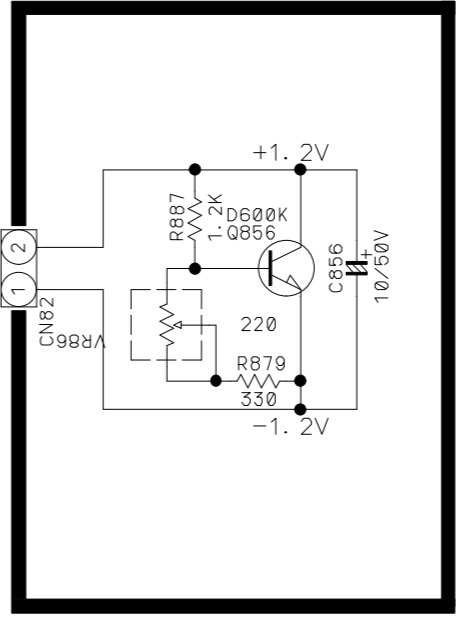
IMPORTANT SAFETY NOTICE
COMPONENTS IDENTIFIED BY ● MARK HAVE SPECIAL CHARACTERISTICS
IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS
USE ONLY MANUFACTURER'S SPECIFIED PARTS.
● THE UNIT OF RESISTANCE IS OHM
● THE UNIT OF CAPACITANCE IS MICROFARAD (UF)
● IF "K" OR "M" IS SHOWN, IT MEANS 1000 OR 1000000 RESPECTIVELY.
● THIS SCHEMATIC DIAGRAM MAY BE MODIFIED AT ANY TIME WITH THE
IMPROVEMENT OF PERFORMANCE.

FROM AC CORD

MAIN BOARD 2 (BIAS & REGULATOR)

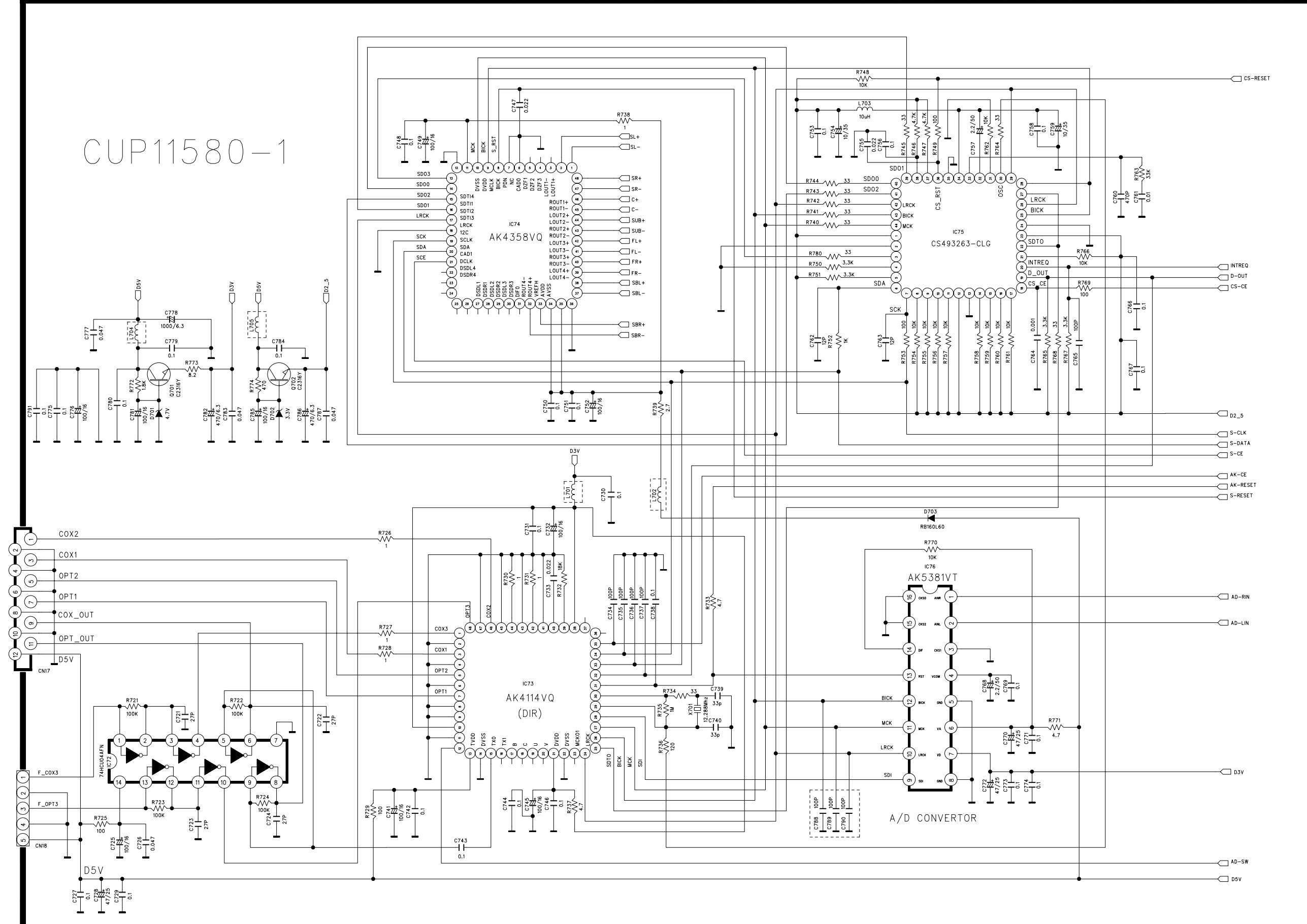


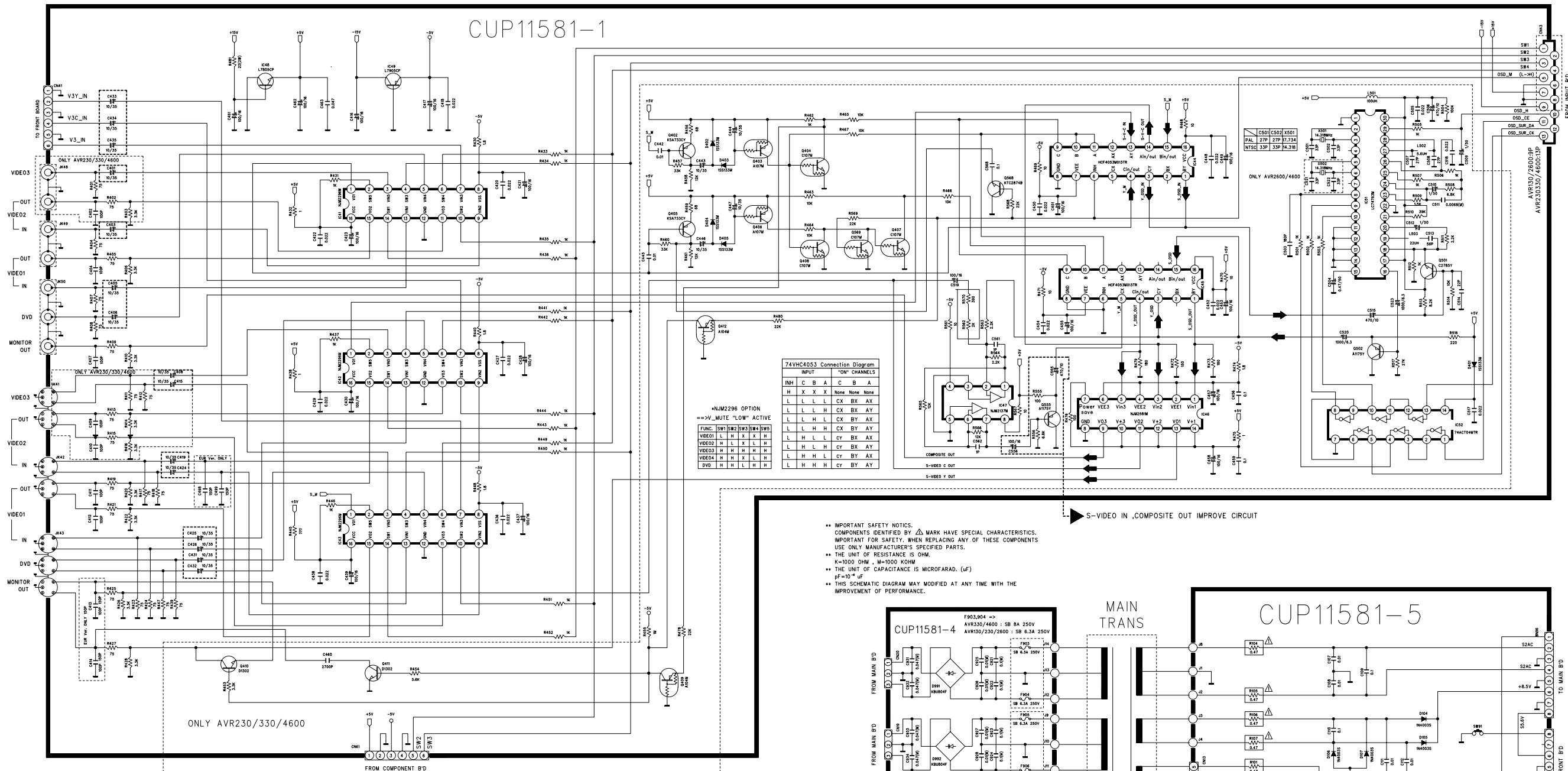
** IMPORTANT SAFETY NOTICE.
 COMPONENTS IDENTIFIED BY MARK HAVE SPECIAL CHARACTERISTICS.
 IMPORTANT FOR SAFETY, WHEN REPLACING ANY OF THESE COMPONENTS
 USE ONLY MANUFACTURER'S SPECIFIED PARTS.
 ** THE UNIT OF RESISTANCE IS OHM.
 K=1000 OHM, M=1000 KOHM.
 ** THE UNIT OF CAPACITANCE IS MICROFARAD (uF)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



TO TRANS PCB CN96 CN96

CUP11580-1





IMPORTANT SAFETY NOTICES:
COMPONENTS IDENTIFIED BY Δ 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. (μ F)
- μ F=10⁻⁶ F
- THIS SCHEMATIC DIAGRAM MAY MODIFIED AT ANY TIME WITH THE IMPROVEMENT OF PERFORMANCE.

S-VIDEO IN ,COMPOSITE OUT IMPROVE CIRCUIT

