

audiolab

SERVICE MANUAL

MODEL 8000X7

8000X7

★ TABLE OF CONTENTS

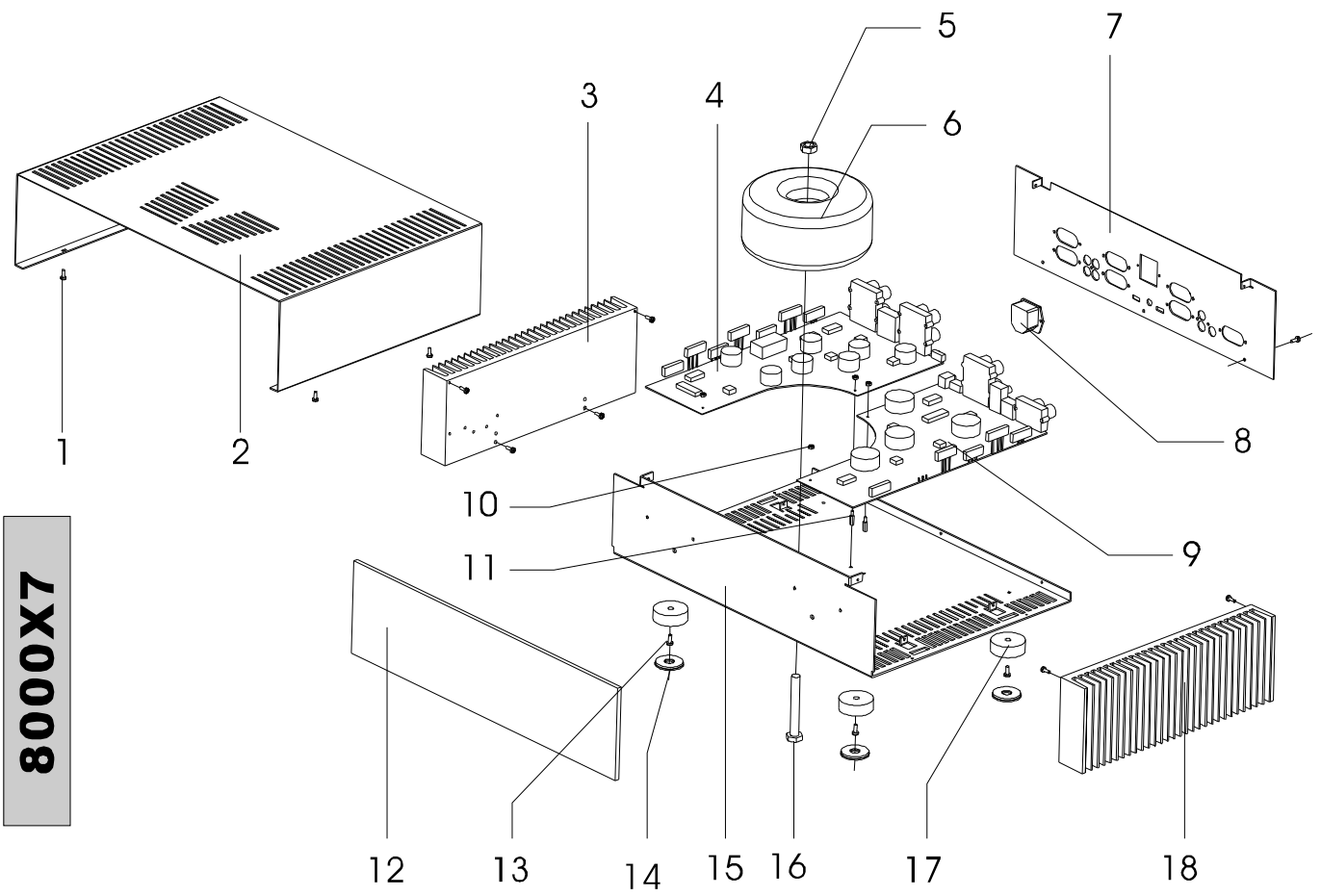
SPECIFICATIONS	2
ASSEMBLY SKETCH	3
SCHEMATIC DIAGRAM	4
ASSEMBLY PART LIST	13
PCB COMPENENTS LOCATION DRAWING	14

★ SPECIFICATION

Power Output	7*100W into rated load impedance(8 ohm)
or	5*100W and 1*150W(8 ohm)
or	3*100W and 2*150W(8 ohm)
Input for rated power	1.05Vrms
Gain(at 1 kHz)	28.8dB
Input Impedance	47kohm
Signal to Noise Ratio	better than 90 dB(relative to 0 dBW) unweighted
Frequency response(-3dB)	1.5Hz-150kHz
Operating temperature range	10-35°C
AC Supply Voltage	110-120V or 220-240V
Power Consumption	Standby<5VA, max1500VA
Dimensions Overall(W*H*D)	445*130*340mm
Weight	Net:18.2kg Shipping:20kg

8000X7

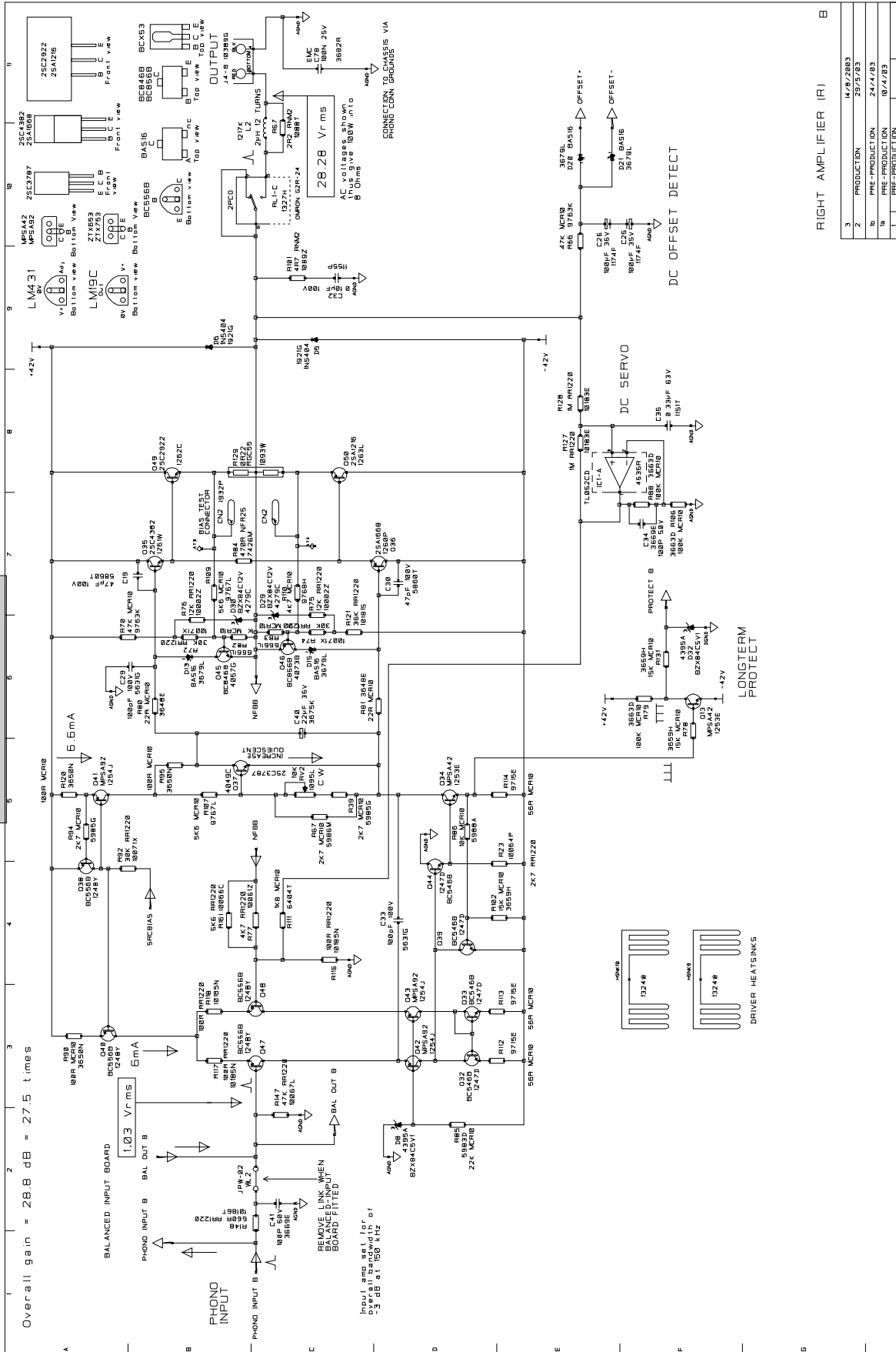
★ ASSEMBLY SKETCH



8000X7

SCHEMATIC DIAGRAM

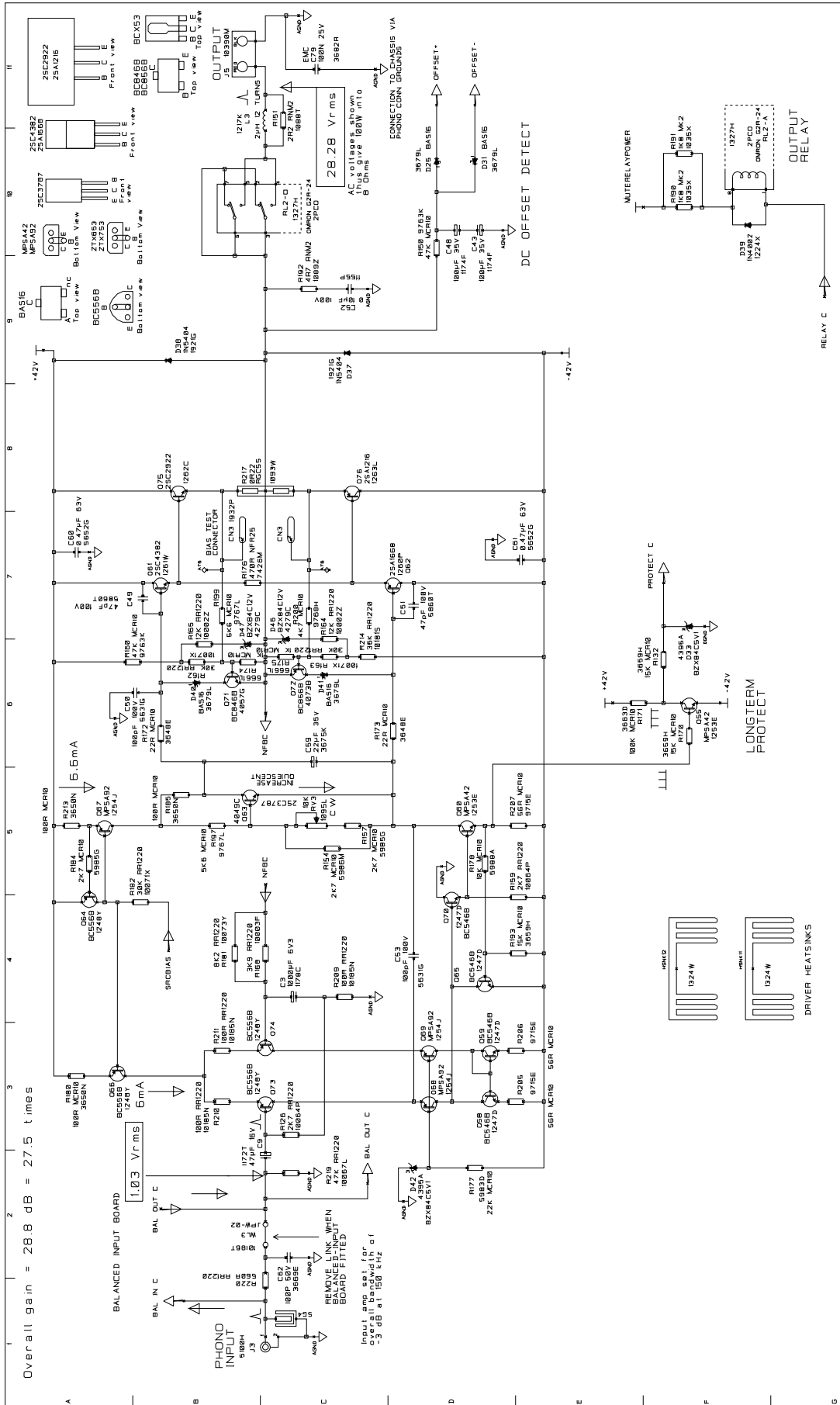
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© 2003 International Audio Group		DRAWN BY: <u>Gras</u>	DATE: <u>14/9/2003</u>
THIS DRAWING IS THE PROPERTY OF INTERNATIONAL AUDIO GROUP AND MUST NOT BE COPIED OR DISCLOSED TO A THIRD PARTY WITHOUT WRITTEN CONSENT		FILE NAME: <u>SCH32801-03.scm</u>	DATE: <u>14/9/2003</u>
		SHEET 2 OF 5 SHEETS	DATE: <u>14/9/2003</u>
		TITLE: <u>328 3-CHAN AMPLIFIER PCB</u>	DATE: <u>14/9/2003</u>
		ISSUE: <u>1</u>	DESCRIPTION: <u></u>
		PRE-PRODUCTION	DATE: <u>18/1/03</u>
		PRE-PRODUCTION	DATE: <u>24/4/03</u>
		PRODUCTION	DATE: <u>14/9/2003</u>
		PRODUCTION	DATE: <u>14/9/2003</u>

SCHEMATIC DIAGRAM

8000X7



CENTRE AMPLIFIER IC 1

3	PRODUCTION	14/8/2003
2	PRE-PRODUCTION	25/5/03
1b	PRE-PRODUCTION	24/4/03
1a	PRE-PRODUCTION	16/4/03

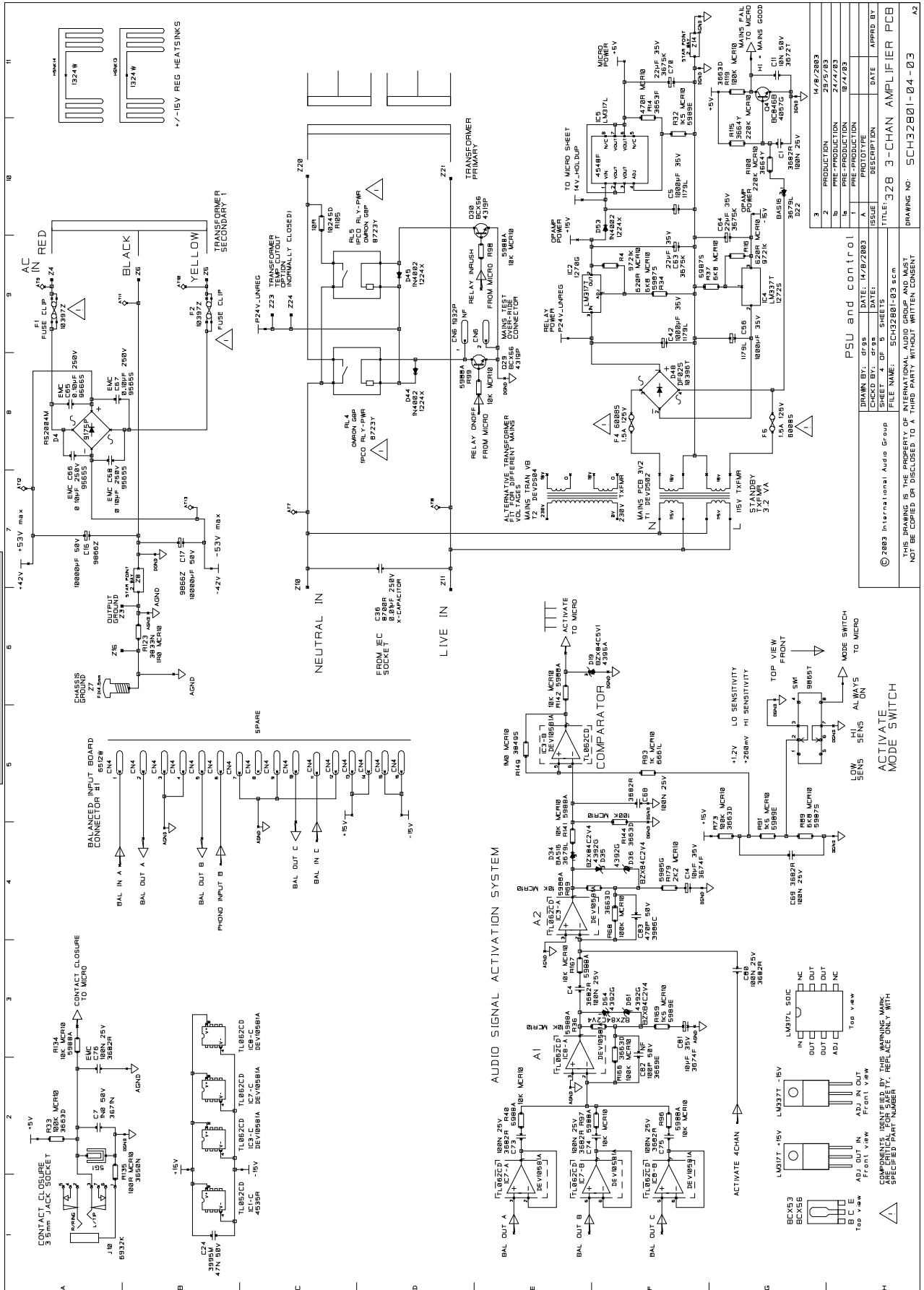
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FILE NAME	SCH32801-03 scm		
TITLE: 328 3-CHAN AMPLIFIER PCB			

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DRAWING NO SCH32801-03-03			
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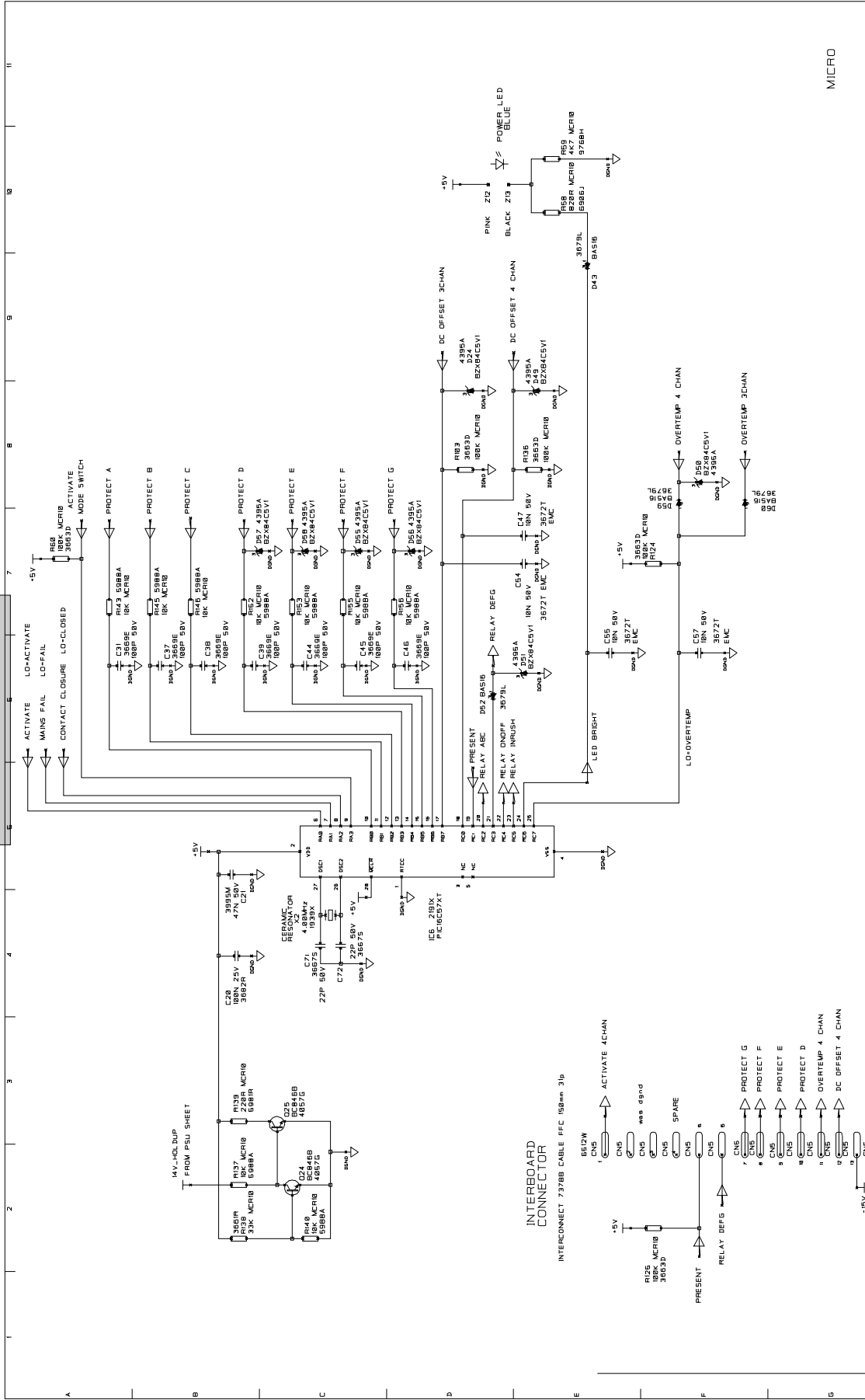
SCHEMATIC DIAGRAM

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SCHEMATIC DIAGRAM

8000X7



MICRO

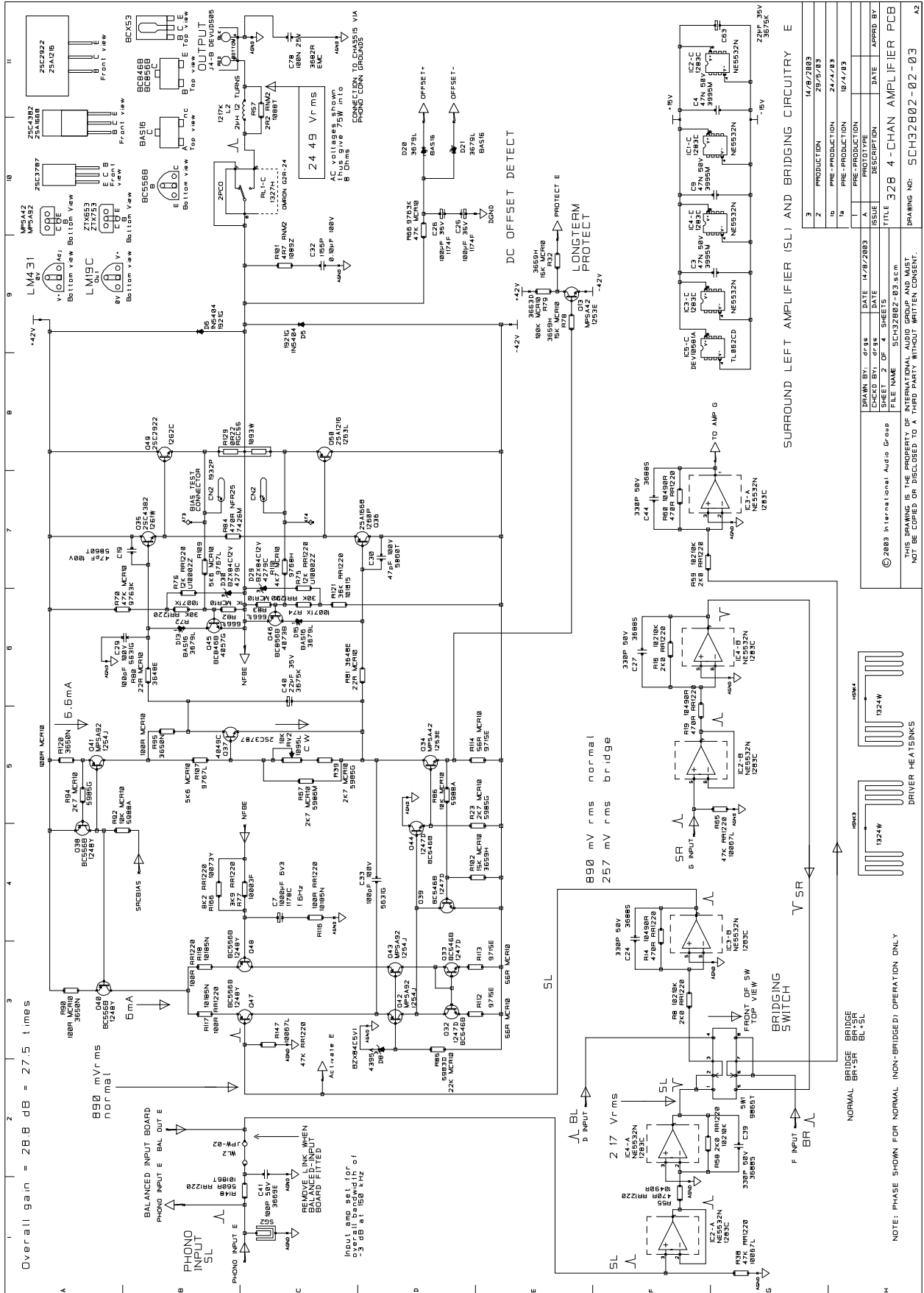
3	PRODUCTION	14/8/2003
2	PRE-PRODUCTION	29/5/03
1a	PRE-PRODUCTION	24/4/03
1b	PRE-PRODUCTION	10/1/03
1	PROTOTYPE	

ISSUE	DESCRIPTION	DATE	APPROV BY
A	328 3-CHAN AMPLIFIER PCB	14/8/2003	
CHECKED BY: gr35		DATE: 14/8/2003	
SHEET 5 OF 5		SHEETS	
FILE NAME: SCH32801-03.scm			

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 DRAWING NO. SCH32801-05-03

SCHEMATIC DIAGRAM

8000X7



SURROUND LEFT AMPLIFIER (SL) AND BRIDGING CIRCUITRY E

3	PRODUCTION	14/9/2003
2	PRE-PRODUCTION	25/5/03
1	PRE-PRODUCTION	24/4/03
1	PRE-PRODUCTION	10/7/03

ISSUE	DATE	ISSUED BY	APPROVED BY
1	14/9/2003		
2	25/5/03		
3	24/4/03		
4	10/7/03		

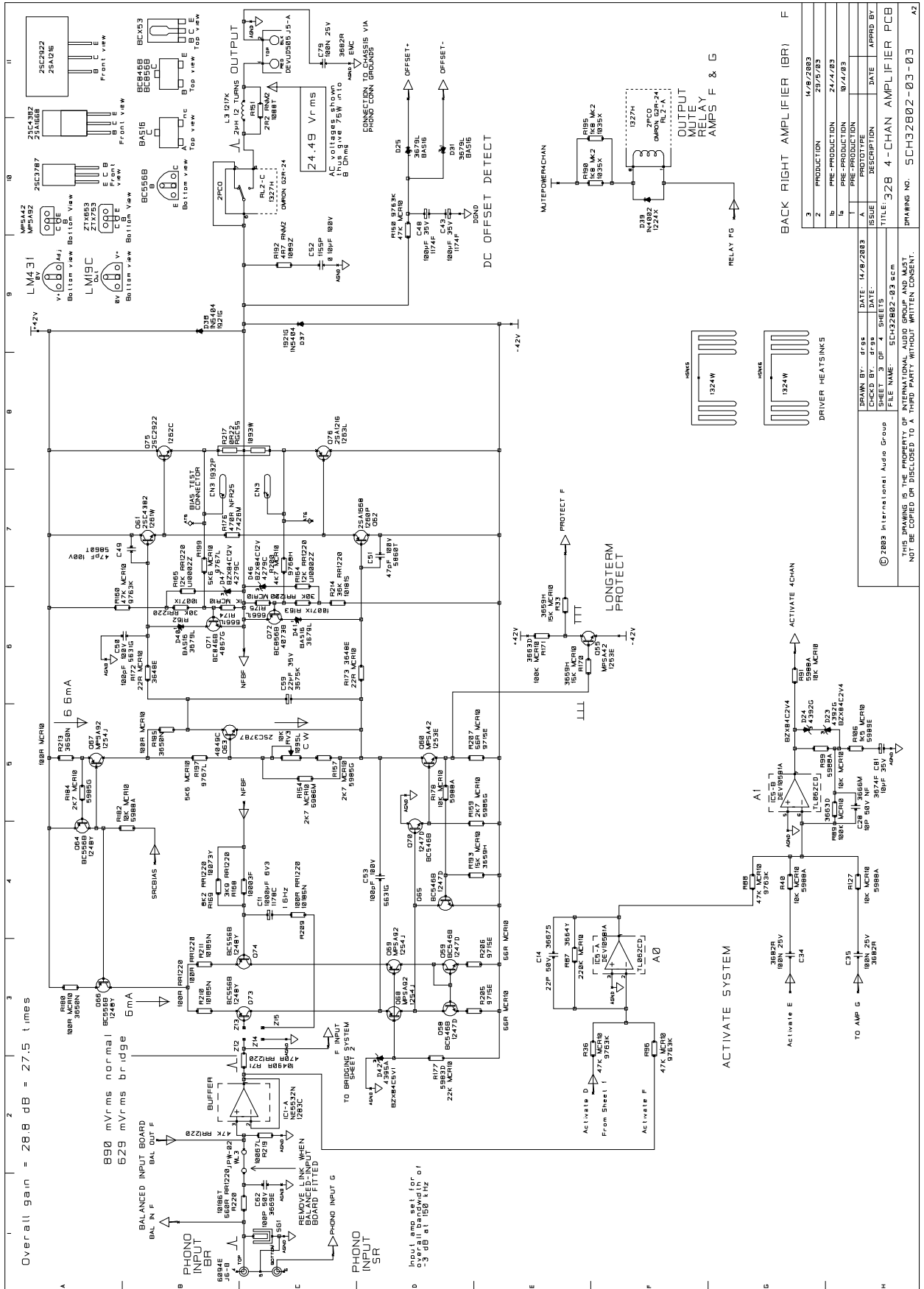
TITLE 328 4-CHAN AMPLIFIER PCB

FILE NAME SCH32802-03.scd

DRAWING NO: SCH32802-02-03

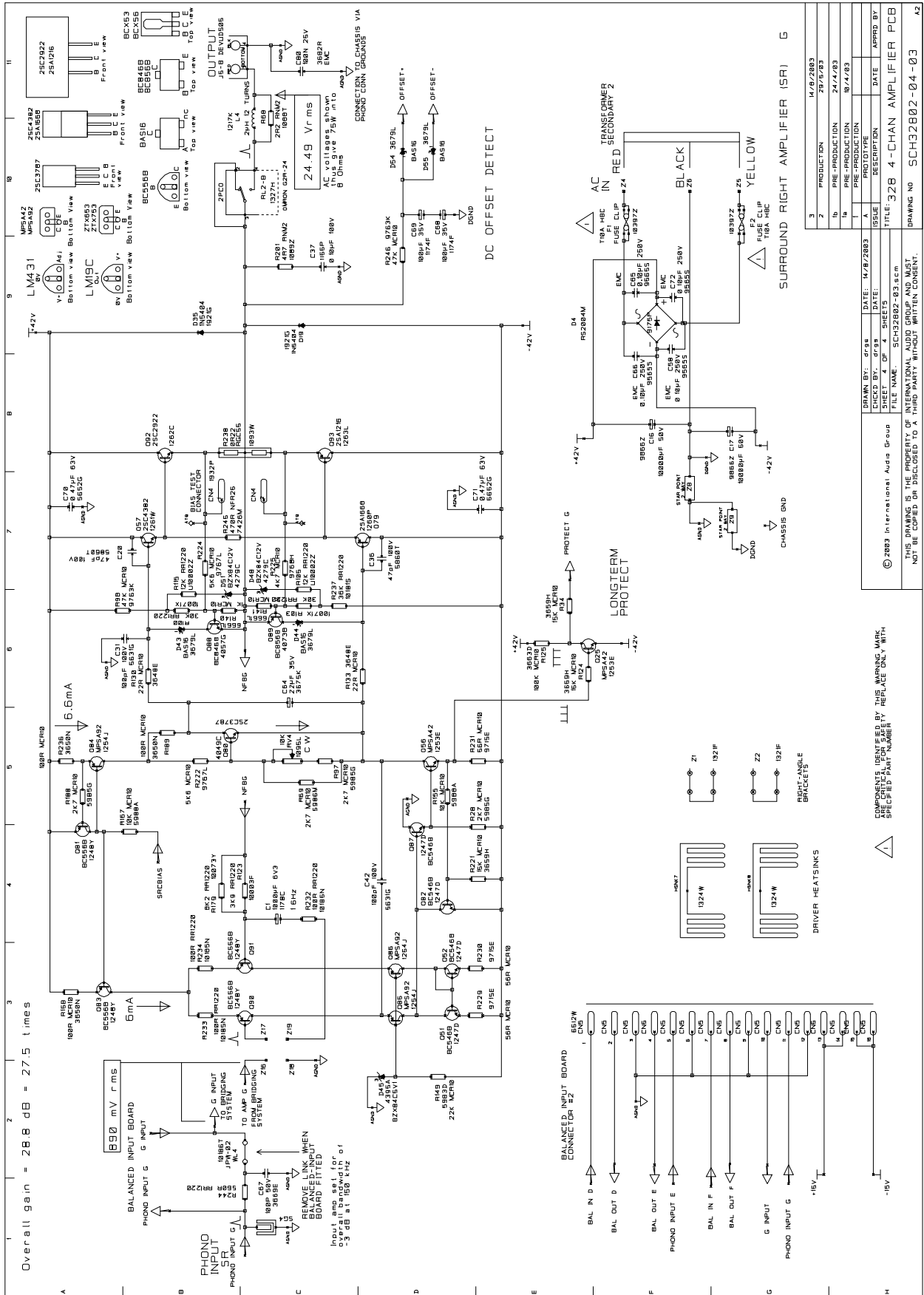
SCHEMATIC DIAGRAM

8000X7



SCHEMATIC DIAGRAM

8000X7



3	PRODUCTION	14/8/2003
1b	PRE-PRODUCTION	24/4/03
1c	PRE-PRODUCTION	18/4/03
1d	PROTOTYPE	

DRAWN BY:	GRB	DATE:	14/8/2003
CHECK BY:	GRB	DATE:	5/9/03
SHEET 4 OF 4	SHEETS	ISSUE	A
FILE NAME:	SCH32802-03.scm	TITLE:	328 4-CHAN AMPLIFIER PCB
© 2003 International Audio Group		DRAWING NO	
THIS DRAWING IS THE PROPERTY OF INTERNATIONAL AUDIO GROUP AND MUST NOT BE COPIED OR DISCLOSED TO A THIRD PARTY WITHOUT WRITTEN CONSENT.		SCH32802-04-03	

1	COMPONENTS IDENTIFIED BY THIS WARNING MARK ARE SPECIFIED PART NUMBERS. REPLACE WITH IDENTICAL PARTS.
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★ **ASSEMBLY PARTS LIST**

R/N	P/N	PART NAME	DESCRIPTION	QUA
1	588-3000086037R	SCREW	M3*8	15
2	302-1398000000R	TOP COVER		1
3	306-1398000001R	LEFT RADIATOR		1
4	088-1389001003R	4 CHANEL POP PCB		1
5	573-1398000102R	NUT	M10	1
6	022-2000044236QR	TRANSFORMER		1
7	301-1398000000R	BLACK PLATE		1
8	044-1700000000QR	POWER SOCKET		1
9	088-1389001001R	3 CHANEL POP PCB		1
10	500-3050240300AR	NUT	M3 Zn	6
11	307-4000300181R	COPPER POST		4
12	300-1398000000R	FRONT PANEL		1
13	537-4001120208R	SCREW	SP(*)4*12ZnMC	4
14	226-0330000411R	FOOT CAP		4
15	309-1398000000R	CHASSIS		1
16	575-1010080001R	BOLT	M10*80	1
17	226-0400071411R	RUBBER FOOT		4
18	306-1398000001R	RIGHT RADIATOR		1

8000X7



ELECTRONICS PARTS LIST

8000X7

R/N	P/N	PART NAME	DESCRIPTION	QUA	PLACE
	088-1389001003R	4CHANNEL AMP POP PCB	8000X7	1	
2	088-1389001002R	4CHANNEL PCB		1	
3	053-1389001611R	4CHANNEL PCB	20*33.5mm	1	
4	002-1203022005R	RESISTOR	12K 25PPM 100mW 0.5%	8	R14-45, R75-76, R105, R115, R164-165
5	002-3902022005QR	RESISTOR	3K9 25PPM 100MW 0.5%	4	R5, R77, R123, R168
6	002-8202022005R	RESISTOR	8K2 25PPM 100MW 0.5%	4	R161, R166, R169, R179
7	002-4703022005R	RESISTOR	47K 25PPM 100MW 0.5%	5	R1, R38, R65, R147, R219
8	002-3003022005R	RESISTOR	30K 25PPM 100MW 0.5%	8	R48, R51, R72, R74, R100, R103, R162-163
9	002-3603022005QR	RESISTOR	36K 25PPM 100MW 0.5%	4	R41, R121, R214, R237
10	002-1001022005R	RESISTOR	100R 25PPM 100MW 0.5%	12	R3, R7, R63, R116-118, R209-211, R232-234
11	002-5601022005R	RESISTOR	560R 25PPM 100MW 0.5%	4	R6, R148, R220, R244
12	002-2002022005R	RESISTOR	2K 25PPM 100MW 0.5%	4	R8, R16, R58-59
13	002-4701022005R	RESISTOR	470R 25PPM 100MW 0.5%	6	R14, R19, R54-55, R60, R71
14	002-2200032010R	RESISTOR	22R 200PPM 125MW 1%	8	R43, R46, R80-81, R130, R133, R172-173
15	002-1001032010R	RESISTOR	100R 200PPM 125MW 1%	12	R9, R13, R26, R90, R95, R120, R158, R180, R185, R189, R213, R236
16	002-1503032010R	RESISTOR	15K 200PPM 125MW 1%	12	R2, R20, R24, R32-34, R78, R102, R124, R170, R193, R221
17	002-3303032010R	RESISTOR	33K 200PPM 125MW 1%	1	R4
18	002-1004032010R	RESISTOR	100K 200PPM 125MW 1%	6	R37, R62, R79, R89, R125, R171
19	002-2203032011R	RESISTOR	220K 200PPM 125MW 1%	1	R87
20	007-2200052060R	CAPACITOR	22P/50V 5%	1	C14
21	007-1001052060R	CAPACITOR	100P/50V 5%	4	C18, C41, C62, C67
22	006-1000050550R	CAPACITOR	10U/35V 20%	1	C81
23	006-2204060655R	CAPACITOR	22U/35V 20%	5	C6, C40, C59, C63, C64
24	067-1100016110R	CAPACITOR	BAS16 SW SINGLE S07-23	18	D7, D11-15, D17-18, D20-21, D25, D31, D40-41, D43-44, D54-55
25	007-1004062040R	CAPACITOR	100N/25V 10%	7	C21, C34-35, C77-80
26	002-0100032050R	RESISTOR	1R 500PPM 5%	1	R93
27	007-3301052060R	CAPACITOR	330P/50V 5%	4	C24, C27, C39, C44
28	007-4703062060R	CAPACITOR	47N/50V 10%	3	C3-4, C9
29	018-1400846227R	TRANSISTOR	BC846 NPN 150MW SOT-23	4	Q20, Q45, Q71, Q88
30	018-1400856227R	TRANSISTOR	BC856 PNP 150MW SOT-23	4	Q21, Q46, Q72, Q89
31	067-3308412110QR	DIODE	BZX84 12V SOT-23	8	D9-10, D29-30, D46-48, D51
32	017-5330000000R	IC	TL062CD S08	1	IC5
33	018-1400056228QR	TRANSISTOR	BCX56 NPN 1W SOT-89	1	Q4
34	067-7700084110R	TRANSISTOR	BZX84 2V4 SOT-23	2	D23-24
35	067-3308451110QR	TRANSISTOR	BZX84 5V1 SOT-23	4	D1, D8, D42, D45
36	002-2203032010R	TRANSISTOR	22K 1% 100PPM 125MW	5	R10, R35, R85, R149, R177
37	002-1003032010R	TRANSISTOR	10K 1% 100PPM 125MW	14	R11, R22, R40, R64, R86, R91-92, R99, R127, R143, R155, R167, R178, R182



ELECTRONICS PARTS LIST

8000X7

38	002-1502032010R	TRANSISTOR	1K5 1% 100PPM 125MW	1	R106
39	002-1002032010R	TRANSISTOR	1K 1% 100PPM 125MW	8	R49-50, R82-83, R140-141, R174-175
40	002-5600032010QR	TRANSISTOR	56R 1% 100PPM 125MW	12	R17-18, R104, R112-114, R205-207, R229-231
41	002-4703032010R	TRANSISTOR	47K 1% 100PPM 125MW	11	R36, R47, R61, R66, R70, R88, R96, R98, R150, R160, R246
42	002-2702032010R	TRANSISTOR	2K7 1% 100PPM 125MW	16	R15, R21, R23, R27, 28, R39, R42, R67, R69, R94, R97, R154, R157, R159, R184, R188
43	002-5602032010R	TRANSISTOR	5K6 1% 100PPM 125MW	11	R12, R25, R52, R107, R109, R119, R126, R197, R199, R222, R224
44	002-4702032010R	TRANSISTOR	4K7 1% 100PPM 125MW	5	R53, R73, R110, R200, R225
45	001-1802205010QR	TRANSISTOR	1K8 1/4W 1%	4	R190-191 R194-195
46	044-1630000000QR	JACK	4WAY BINDING POST	2	J4 J5
47	031-0050011301QR	FUSEHOLDER	fuseholder clip pcb	4	F1 F2
48	001-2209308050QR	RESISTOR	2R2 2W 5%	4	R56-57 R68 R151
49	001-4709208050QR	RESISTOR	4R7 2W 5%	4	R31 R101 R192 R201
50	001-2208910100QR	RESISTOR	0.22R 5W 10%	4	R30 R129 R217 R238
51	020-1034117008QR	POTENTIOMETER	10K 25%	4	RV1-RV4
52	016-1041112201QR	CAPACITOR	0.1U/100V 10% PIN=5MM	4	C15 C32 C37 C52
53	006-1014081253QR	CAPACITOR	100U/35V 20%	9	C2 C22-23 C25-26 C43 C48 C68-69
54	006-1024051013QR	CAPACITOR	1000U/6.3V 20%	4	C1 C5 C7 C11
55	080-0315000010QR	INDUCTOR	2U	4	L1-L4
56	067-2204002000R	DIODE	1N4002 1A 100V	2	D16 D39
57	018-1400546115QR	TRANSISTOR	BC546B NPN TO-92	16	Q11 Q16-18 Q32-33 Q39 Q44 Q51-52 Q58-59 Q65 Q70 Q82 Q87
58	018-1400556115R	TRANSISTOR	BC556B PNP TO-92	16	Q1-2 Q6 Q8 Q38 Q40 Q47-48 Q64 Q66 Q73-74 Q81 Q83 Q90-91
59	018-3300042115R	TRANSISTOR	MPSA42 NPN TO-92	9	Q3 Q13 Q19 Q25 Q27 Q34 Q55-56 Q60
60	018-3300092115R	TRANSISTOR	MPSA92 PNP TO-92	13	Q7 Q9-10 Q26 Q41-43 Q67-69 Q84-86
61	018-0101668111QR	TRANSISTOR	2SA1668 PNP TO-220F	4	Q22 Q36 Q62 Q79
62	018-0304382111QR	TRANSISTOR	2SC4382 NPN TO-220F	4	Q23 Q35 Q57 Q61
63	017-0270000000R	IC	NE5532N OP-AMP 8PIN	4	IC1-IC4
64	349-1006000011R	EARTHING TERMINAL	PCB-2	2	Z1-Z2
65	024-2240501025QR	RELAY	G2R-24 2PCO 24V	2	RL1-RL2
66	001-0000105050QR	CAPACITOR	0R 1/4W	4	WL1-WL4
67	067-2205404000R	BRIDGE RECTIFIER	1N5404 3A 400V	8	D2-3 D5-6 D19 D35 D37-38
68	057-2541201021R	2PIN PLUGS	2.54PH	4	CN1-CN4
69	016-1011132201QR	CAPACITOR	100P/100V 2.5%	8	C8 C10 C29 C31 C33 C42 C50 C53
70	013-4700340504QR	CAPACITOR	47P/100V 2.5%	8	C12-13 C19-20 C30 C36 C49 C51
71	013-4740220504QR	CAPACITOR	0.47U/63V 10%	2	C70 C71
72	051-6200000000R	JACK	4PIN	1	J6
73	044-1420000000QR	JACK	16WAY PCB FFC	1	CN6
74	001-4700005050R	RESISTOR	470R 1/4W 1%	4	R29 R84 R176 R245



ELECTRONICS PARTS LIST

75	034-1119992508R	BRIDGE RECTIFIER	RS2004M 400V 20A	1	D4
76	016-1052110001R	CAPACITOR	0.1U/250V 10%	4	C58 C65-66 C72
77	039-1300000000QR	SWITCH	knitter MFP2323R	1	SW1
78	006-1034358063QR	CAPACITOR	10000UF/50V 20%	2	C16-17
79	031-2200519121R	FUSE CUBE	T10A/250V	2	
80	018-0303787113QR	TRANSISTOR	2SC3787	4	
81	018-0101216110QR	TRANSISTOR	2SA1216	4	
82	018-0302922110QR	TRANSISTOR	2SC2922	4	
83	066-1100000000QR	SWITCH	THERMAL CUT-OUT	1	
84	324-0280220101R	MICA LAMINATION		4	
85	324-0380250101QR	FILM	38*25mm	8	
86	306-1398000001R	MAIN RADIATOR	300*40*108.5MM	1	
87	306-1398000000R	RADIATOR	17.5*12.13.5MM	8	
88	318-1398000000R	ZENER HOLDER	20*12.8*1.0MM	4	
89	318-1398000001R	RESISTOR HOLDER	0.5MM	1	
90	513-3007050008OR	WASHER		12	
91	513-4008080300AR	WASHER		4	
92	536-3001120003R	SCREW	M3*12/GB70-85	6	
	088-1389001001R	3channel AMP POP PCB	8000X7	1	
1	088-1389001000R	3channel PCB		1	
2	053-1389001610R	3channel PCB	20*33.5mm	1	
3	002-1203022005R	RESISTOR	12K 25PPM 100mW 0.5%	6	R44-45, R75-76, R164-165
4	002-3902022005QR	RESISTOR	3K9 25PPM 100MW 0.5%	1	R168
5	002-4702022005R	RESISTOR	4K7 25PPM 100MW 0.5%	2	R5, R77
6	002-2702022005R	RESISTOR	2K7 25PPM 100MW 0.5%	4	R21, R23, R126, R159
7	002-5602022005R	RESISTOR	5K6 25PPM 100MW 0.5%	2	R158, R161
8	002-4703022005R	RESISTOR	47K 25PPM 100MW 0.5%	3	R1, R147, R219
9	002-3003022005R	RESISTOR	30K 25PPM 100MW 0.5%	9	R11, R48, R51, R72, R74, R92, R162-163, R182
10	002-8202022005R	RESISTOR	8K2 25PPM 100MW 0.5%	1	R181
11	002-3603022005QR	RESISTOR	36K 25PPM 100MW 0.5%	3	R41, R121, R214
12	002-1005022005QR	RESISTOR	1M 25PPM 100MW 0.5%	4	R64, R108, R127-128
13	002-1001022005R	RESISTOR	100R 25PPM 100MW 0.5%	9	R3, R7, R63, R116-118, R209-211
14	002-5601022005R	RESISTOR	560R 25PPM 100MW 0.5%	3	R6, R148, R220
15	034-2444000200R	BRIDGE RECTIFIER	DB154S	1	D48
16	002-2200032010R	RESISTOR	22R 200PPM 125mW 1%	6	R43, R46, R80-81, R172-173
17	002-1001032010R	RESISTOR	100R 200PPM 125mW 1%	10	R9, R13, R26, R90, R95, R120, R135, R180, R185, R213
18	002-4701032010R	RESISTOR	470R 200PPM 125mW 1%	1	R14
19	002-1503032010R	RESISTOR	15K 200PPM 125mW 1%	9	R2, R20, R54, R78, R102, R131-132, R170, R193
20	002-3303032010R	RESISTOR	33K 200PPM 125mW 1%	2	R38, R138
21	002-1004032010R	RESISTOR	100K 200PPM 125mW 1%	19	R33, R55, R60, R62, R65, R68, R73, R79, R87-88, R103, R106, R119, R124-125, R136, R144, R166, R171
22	002-2203032011R	RESISTOR	220K 200PPM 125mW 1%	2	R100, R115
23	007-2200052060R	RESISTOR	22P/50V 5%	2	C71-72
24	007-1001052060R	RESISTOR	100P/50V 5%	12	C18, C28, C31, C34, C37-39, C41, C44-46, C62

8000X7



ELECTRONICS PARTS LIST

8000X7

25	007-1002062060R	RESISTOR	1N/50V X7R 10%	1	C7
26	007-1003062060R	RESISTOR	10N/50V 10%	5	C11, C17, C54-55, C57
27	006-1000050550R	RESISTOR	10U/35V 20%	2	C14, C81
28	006-2204060655R	RESISTOR	22U/35V 20%	6	C6, C40, C59, C63-64, C70
29	067-1100016110R	DIODE	BAS16 SW SINGLE S07-23	21	D7, D11-15, D17-18, D20-23, D25, D31, D34, D40-41, D43, D52, D59-60
30	007-1004062040R	CAPACITOR	100N/25V 10%	13	C1, C4, C20, C68-69, C73-80
31	002-0100032050R	CAPACITOR	1R 500PPM 125MW 5%	1	R123
32	002-1005032010R	CAPACITOR	1M 500PPM 125MW 1%	1	R149
33	007-4701052060R	CAPACITOR	470P/50V 5%	1	C83
34	007-4703062060R	CAPACITOR	47N/50V 10%	2	C21, C24
35	018-1400846227R	TRANSISTOR	BC846 NPN 150MW SOT-23	6	Q4, Q20, Q24-25, Q45, Q71
36	018-1400856227R	TRANSISTOR	BC856 PNP 150MW SOT-23	3	Q21, Q46, Q72
37	067-3308412110QR	DIODE	BZX84 12V SOT-23	6	D9-10, D29-30, D46-47
38	017-5330000000R	IC	TL062CD S08	3	IC3, IC7-IC8
39	018-1400056228QR	TRANSISTOR	BCX56 NPN 1W SOT-89	3	Q5, Q29-30
40	067-7700084110R	DIODE	BZX84 2V4 SOT-23	4	D35-36, D54, D61
41	067-3308451110QR	DIODE	BZX84 5V1 SOT-23	16	D1, D8, D19, D24, D26-27, D32-33, D42, D49-51, D55-58
42	017-0534000000R	IC	IC TL052CD 2X OP AMP S08	1	IC1
43	017-5590000000R	IC	IC LM317L +ADJ	1	IC5
44	002-2201032010R	RESISTOR	220R 1% 1/8W	1	R139
45	002-2203032010R	RESISTOR	22K 1% 100PPM 125MW	4	R10, R35, R85, R177
46	002-2202032010R	RESISTOR	2K2 1% 100PPM 125MW	1	R179
47	002-6802032010R	RESISTOR	6K8 1% 125MW	3	R34, R37, R89
48	002-1003032010R	RESISTOR	10K 1% 100PPM 125MW	26	R8, R12, R22, R36, R40, R69, R71, R86, R96-99, R134, R137, R140-143, R145-146, R152-153, R155-156, R167 178
49	002-1502032010R	RESISTOR	1K5 1% 100PPM 125MW	3	R32, R91, R169
50	031-0050011304QR	FUSE CUBE	T1. 5A 125V SMD NANO2	2	F4-F5
51	002-1802032010R	RESISTOR	1K8 1% 100PPM 150V	2	R24, R111
52	002-1002032010R	RESISTOR	1K 1% 100PPM 125MW	8	R49-50, R82-83, R93, R174-175, R58
53	002-5600032010QR	RESISTOR	56R 1% 100PPM 125MW	9	R17-18, R104, R112-114, R205-207
54	002-6201032010R	RESISTOR	620R 1% 100PPM	2	R4, R16
55	002-4703032010R	RESISTOR	47K 1% 100PPM 125MW	6	R47, R61, R66, R70, R150, R160
56	002-2702032010R	RESISTOR	2K7 1% 100PPM 125MW	9	R15, R27, R39, R42, R67, R94, R154, R157, R184
57	002-5602032010R	RESISTOR	5K6 1% 100PPM 125MW	8	R25, R52, R107, R109, R122, R133, R197, R199
58	002-4702032010R	RESISTOR	4K7 1% 100PPM 125MW	5	R53, R59, R110, R130, R200
59	017-1180000000R	IC		1	IC6
60	017-4200000000QR	IC	PIC16C57	1	
61	001-1802205010QR	RESISTOR	1K8 1/4W 1%	4	R19, R28, R190-191
62	044-1630000000QR	JACK	4WAY BINDING POST	1	J4



ELECTRONICS PARTS LIST

8000X7

63	044-780000000QR	JACK	2PIN	1	J5
64	031-0050011301QR	FUSEHOLDER	fuseholder clip pcb	4	F1-F2
65	051-520000000QR	JACK	2PIN T6302	1	J6
66	001-2209308050QR	RESISTOR	2R2 2W 5%	3	R56-57, R151
67	001-4709208050QR	RESISTOR	4R7 2W 5%	3	R31, R101, R192
68	001-2208910100QR	RESISTOR	0.22R 5W 10%	3	R30, R129, R217
69	020-1034117008QR	POTENTIOMETER	10K 25%	3	RV1-RV3
70	016-1041112201QR	CAPACITOR	0.1U/100V 10% PIN=5MM	3	C15, C32, C52
71	013-3340220504QR	CAPACITOR	0U33 10% 63V MMK05	2	C27, C35
72	006-4704051033QR	CAPACITOR	47U/16V 10%	1	C9
73	006-1014081253QR	CAPACITOR	100U/35V 20%	7	C2, C22-23, C25-26, C43, C48
74	006-1024051013QR	CAPACITOR	1000U/6.3V 20%	1	C3
75	006-1024102053QR	CAPACITOR	1000U/35V 20%	3	C5, C42, C56
76	080-0315000010QR	INDUCTOR	2U	3	L1-L3
77	067-2204002000R	DIODE	IN4002 1A 100V	5	D16, D39, D44-45, D53
78	018-1400546115QR	TRANSISTOR	BC546B NPN TO-92	12	Q11, Q16-18, Q32-33, Q39, Q44, Q58-59, Q65, Q70
79	018-1400556115R	TRANSISTOR	BC556B PNP TO-92	12	Q1-2, Q6, Q8, Q38, Q40, Q47-48, Q64, Q66, Q73-74
80	018-3300042115R	TRANSISTOR	MPSA42 NPN	7	Q3, Q13, Q19, Q27, Q34, Q55, Q60
81	018-3300092115R	TRANSISTOR	MPSA92 PNP	10	Q7, Q9-10, Q26, Q41-43, Q67-69
82	018-0101668111QR	TRANSISTOR	2SA1668 PNP TO-220F	3	Q22, Q36, Q62
83	018-0304382111QR	TRANSISTOR	2SC4382 NPN TO-220F	3	Q23, Q35, Q61
84	017-1380000000R	IC	LM317 +ADJ 1.5A TO220	1	IC2
85	017-1390000000R	IC	LM337 -ADJ 1.5A TO220	1	IC4
86	349-1006000011R	EARTHING TERMINAL	PCB-2	2	Z1-Z2
87	024-2240501025QR	RELAY	G2R-24 2PCO 24V	2	RL1-RL2
88	001-0000105050QR	RESISTOR	0R 1/4W	3	WL1-WL3
89	067-2205404000R	RECTIFIER DIODE	IN5404 3A 400V	6	D2-3, D5-6, D37-38
90	057-2541201021R	2PIN PLUGS	2.54PH	3	CN1-CN3
91	029-0800000000QR	FILTER	CSA400MG	1	X2
92	058-2811000000R	IC HOLDER	28PIN	1	
93	044-1500000000QR	JACK	1W T6346	1	J3
94	016-1011132201QR	CAPACITOR	100P/100V 2.5%	6	C8, C10, C29, C33, C50, C53
95	013-4740220504QR	CAPACITOR	0.47U/63V 10%	2	C60-61
96	013-4700340504QR	CAPACITOR	47P/100V 2.5%	6	C12-13, C19, C30, C49, C51
97	044-1420000000QR	JACK	16WAY PCB FFC	1	CN5
98	044-1310000000QR	JACK	CKX-3.5-12	1	J10
99	001-4700005050R	RESISTOR	470R 1/4W 1%	3	R29, R84, R176
100	008-1003025005R	CAPACITOR	0.01U/250V	1	C36
101	024-0240080014QR	RELAY	G8P-1A4P 24DC	2	RL4-RL5
102	034-1119992508R	BRIDGE RECTIFIER	RS2004M 400V 20A	1	D4
103	016-1052110001R	CAPACITOR	0.1U/250V 10%	4	C58, C65-67
104	039-1300000000QR	SWITCH	WITCH 3WAY	1	SW1
105	006-1034358063QR	CAPACITOR	10000UF/50V 20%	2	C16-C17
106	031-2200519121R	FUSE CUBE	T10A/250V	2	

★ ELECTRONICS PARTS LIST

107	018-0303787113QR	TRANSISTOR	2SC3787	3	
108	018-0101216110QR	TRANSISTOR	2SA1216	3	
109	018-0302922110QR	TRANSISTOR	2SC2922	3	
110	066-1100000000QR	SWITCH	THERMAL CUT-OUT	1	
111	324-0280220101R	MICA LAMINATION		3	
112	324-0380250101QR	FILM	38*25mm	6	
113	306-1398000001R	MAIN RADIATOR	300*40*108.5MM	1	
114	306-1398000000R	RADIATOR	17.5*12.13.5MM	8	
115	318-1398000000R	ZENER HOLDER	20*12.8*1.0MM	3	
116	318-1398000001R	RESISTOR HOLDER	0.5MM	1	
117	513-3007050080R	WASHER		9	
118	513-4008080300AR	WASHER		3	
119	536-3001120003R	SCREW	M3*12/GB70-85	12	
120	742-0150000000R	HEAT-SHRTNKABLE TUBING		0.03	
121	001-1000521050Q	RESISTOR	10R 17W 5%	1	R105
1	022-2000042258	TRANSFORMER		1	T1
2	060-3240000411	BLACK WIRE	7/2.0	0.45	
3	060-3240000011	RED WIRE	7/2.0	0.45	
4	019-0011022000Q	LED	RED	1	
5	022-2000044236Q	MAIN TRANSFORMER	230V 800VA	1	
6	031-2200519121	FUSE CUBE	T10A/250V	2	
7	742-3810000000Q	HEAT-SHRTNKABLE TUBING		1	
8	071-1100000000	CABLE TIES	100mm VJ-100	20	
9	055-1216150555	16pin FLAT WIRE	ffc flexi 150mm	1	
10	060-0040120325Q	WIRE	UL1672 16AWG	0.25	
11	060-0040120324Q	WIRE	UL1672 16AWG	0.25	
12	044-1700000000Q	POWER SOCKET		1	
13	830-0117102902	ORBICULAR MAGNET	FERRITE STEWARD	1	
14	062-6118000220	POWER CORD	301RVV2-2P	1	
15	416-1399000000R	USER MANUAL		1	

8000X7