

PCB WORK INSTRUCTIONS

DWG 420-0250-A2

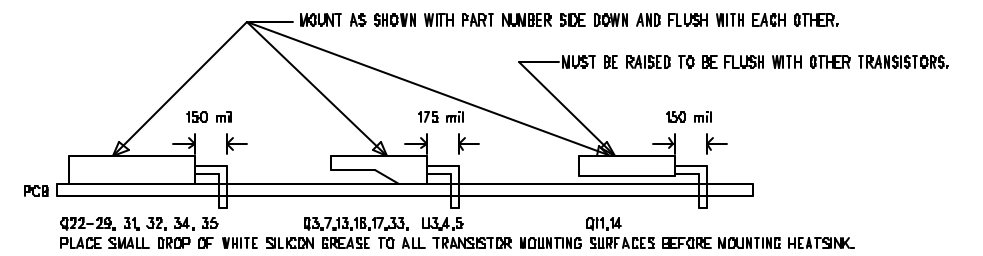
NOTES:

UNLESS OTHERWISE SPECIFIED:

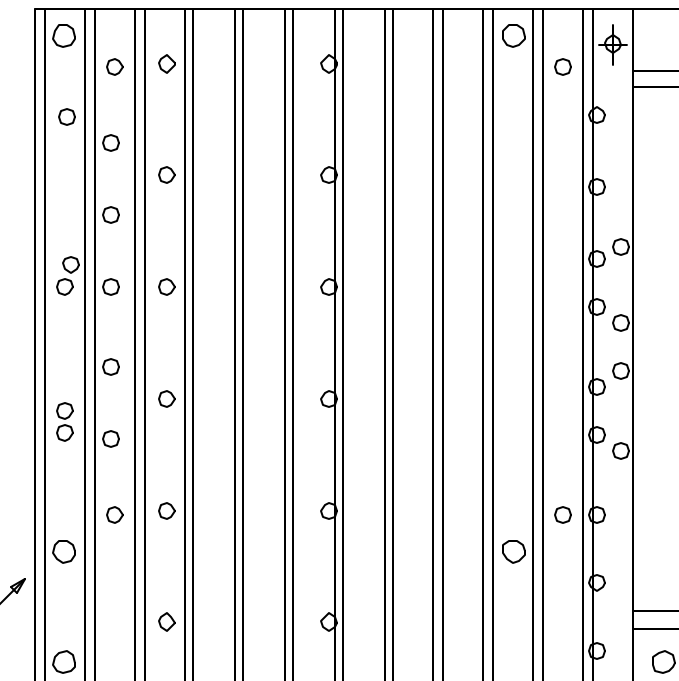
1. SQUARE PADS ON THRU HOLE PARTS (i.e. CONNECTORS, DPS, SIPS, LEADS) DENOTE PIN 1.
2. ALL BOARDS REQUIRE A COMPLETE AND THOROUGH VISUAL INSPECTION.
3. ALL BOARDS MUST BE BARE BOARD TESTED.
4. ASSEMBLE AND SOLDER PER ANSI/IPC-A-610B.

LOADING

5. SEE FORMING AND LOADING INSTRUCTIONS BELOW FOR INSTALLING SPECIFIED COMPONENTS.
6. CHECK THAT R52,53,55,56,58,60,63,64,66,67,68 & 51 ARE FLUSH TO BOARD.
7. CHECK THAT ALL CONNECTORS AND JACKS ARE FLUSH WITH PCB.
8. MAKE CERTAIN ALL POWER TRANSISTOR MOUNTING HOLES ARE PROPERLY ALIGNED FOR HEAT SINK.



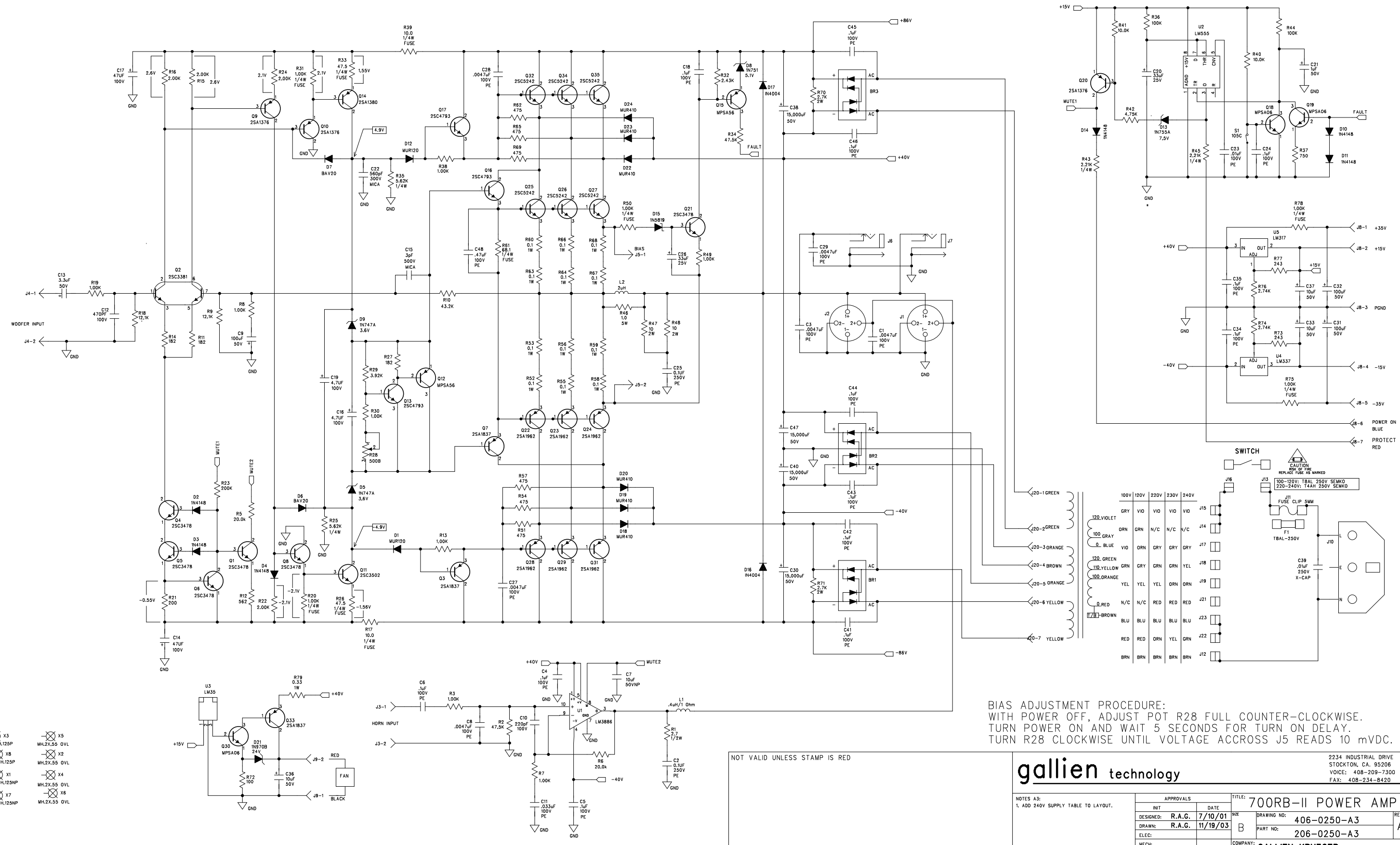
HEAT SINK ASSEMBLY



NOT VALID UNLESS STAMP IS RED		<b>gallien technology</b>		2234 INDUSTRIAL DRIVE STOUGHTON CA, 95206 VOICE: 708-234-7300 FAX: 708-234-0120	
APPROVALS			TITLE: 700RB-II POWER AMP BD		
INIT	DATE	SIZE	DRAWING NO:	REV.	
DESIGNED: R.A.G.	7/16/01	B	405-0250-A2	A2	
DRAWN: R.A.G.	7/08/03		PART NO:		
ELEC:			145-0250-A2		
LAYER DESCRIPTION:		COMPANY: GALLIEN-KRUEGER			
SOLDER MASK		GERBER FILE NAME: sst0120ppbo			
		FILENAME: 5250A2			

Customer Name:	<b>Gallien-Krueger</b>	Current Rev #:	<b>A2</b>	New ECO Rev #:	<b>A3</b>
Model:	<b>700RB-II</b>	Distribute To:		Page:	<b>1</b> Of: <b>1</b>
Assembly Description:	<b>700RB-II power amp board</b>	Originator:	<b>R. A. G.</b>		
Assembly Numbers:	<b>206-0250-A</b>	Approved by:			
	<b>145-0250-A</b>	Effective Date:			
Effective		Document Update		Date	Initials
<input type="checkbox"/>	All in Process	<input checked="" type="checkbox"/>	Next Buy	<input type="checkbox"/>	Artwork
<input type="checkbox"/>	All in Service	<input type="checkbox"/>	Next Production Run	<input type="checkbox"/>	Assembly Dwg.
<input type="checkbox"/>	All in Stock	<input type="checkbox"/>		<input checked="" type="checkbox"/>	Board Artwork
Beginning Serial Number:		<input checked="" type="checkbox"/>	BOM		
Reason For Change		<input type="checkbox"/>	Control Form		
<b>Add 240V supply table to board and schematic.</b>		<input type="checkbox"/>	Costing		
		<input type="checkbox"/>	Fab Drawing		
		<input type="checkbox"/>	Inspection Proc.		
		<input checked="" type="checkbox"/>	Part Master File		
		<input checked="" type="checkbox"/>	Schematic		
		<input type="checkbox"/>	Service Manual		
		<input type="checkbox"/>	Test Procedure		
		<input type="checkbox"/>			
		<input type="checkbox"/>			
Other Affected Assemblies					
<input type="checkbox"/>	Continued on ECO Supplement Page				
Description Of Change		Distribution		Date	Initials
		<input type="checkbox"/>	Accounting		
		<input type="checkbox"/>	Assembly		
		<input type="checkbox"/>	Customer		
		<input checked="" type="checkbox"/>	Engineering		
		<input checked="" type="checkbox"/>	Incoming Q.C.		
		<input type="checkbox"/>	Planning		
		<input checked="" type="checkbox"/>	Production Eng.		
		<input checked="" type="checkbox"/>	Purchasing		
		<input type="checkbox"/>	Q.A.		
		<input type="checkbox"/>	Receiving		
		<input type="checkbox"/>	Service		
		<input checked="" type="checkbox"/>	Test		
		<input type="checkbox"/>	Vendor		
		<input type="checkbox"/>			
		<input type="checkbox"/>			
<input type="checkbox"/>	Continued on ECO Supplement Page				
<input type="checkbox"/>	Drawing(s) attached				
Part Number	Description	Parts Added		Parts Deleted	
		Qty	Ref. Designator	Qty	Ref. Designator

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



BIAS ADJUSTMENT PROCEDURE:  
 WITH POWER OFF, ADJUST POT R28 FULL COUNTER-CLOCKWISE.  
 TURN POWER ON AND WAIT 5 SECONDS FOR TURN ON DELAY.  
 TURN R28 CLOCKWISE UNTIL VOLTAGE ACROSS J5 READS 10 mVDC.

NOT VALID UNLESS STAMP IS RED

**gallien technology**

2234 INDUSTRIAL DRIVE  
 STOCKTON, CA. 95206  
 VOICE: 408-209-7300  
 FAX: 408-234-8420

TITLE: **700RB-II POWER AMP**

DESIGNED: R.A.G. 7/10/01  
 DRAWN: R.A.G. 11/19/03

DRAWING NO: 406-0250-A3  
 PART NO: 206-0250-A3

COMPANY: **GALLIEN KRUEGER**

FILENAME: 6250A3.sch

REV. A3

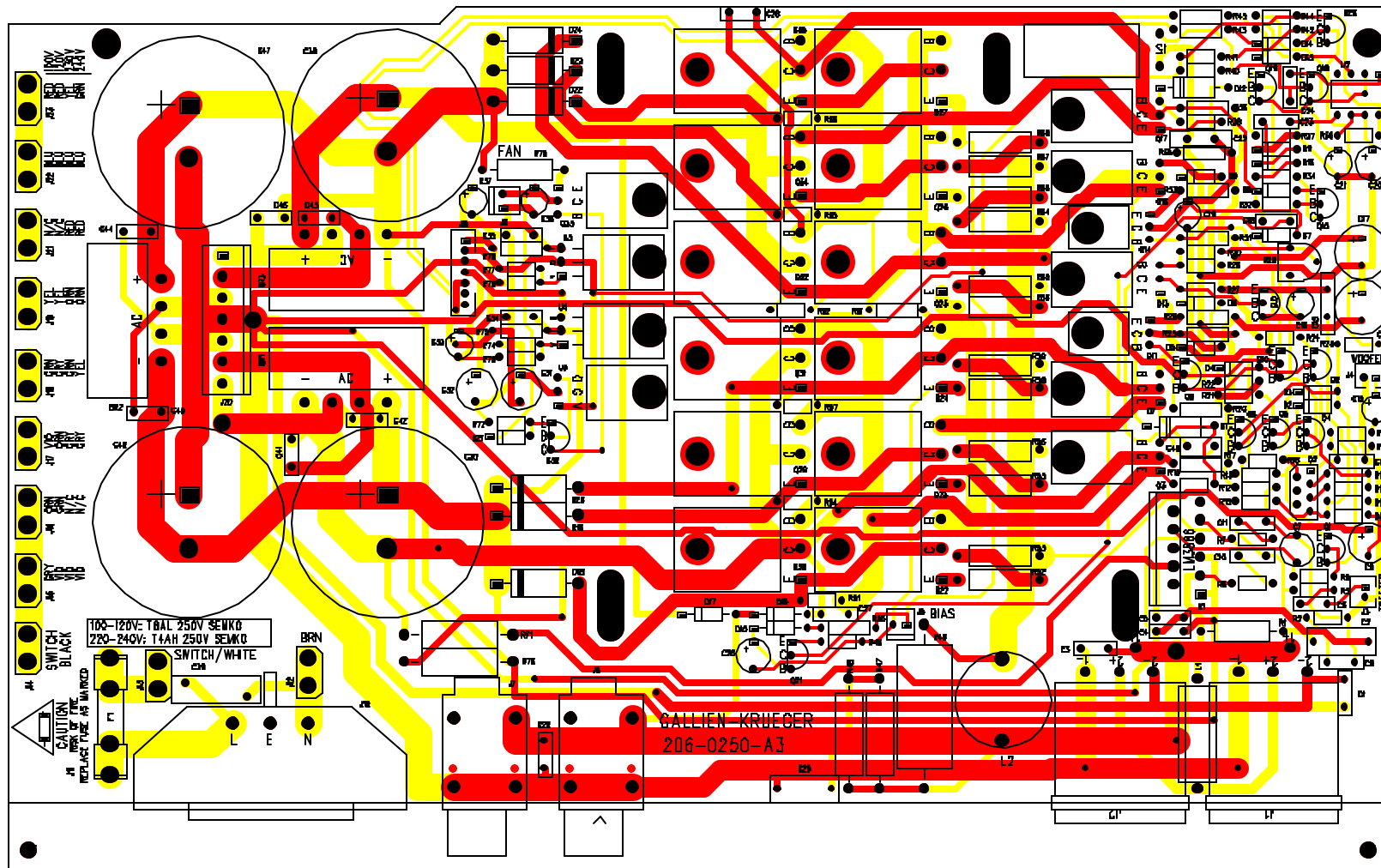
- X3 MH.125P
- X5 MH.2X.55 OVL
- X8 MH.125P
- X2 MH.2X.55 OVL
- X1 MH.125NP
- X4 MH.2X.55 OVL
- X7 MH.125NP
- X6 MH.2X.55 OVL

**700RB-II Power Amp 206-0250-A3**

Part No.	Reference	Description	Manufacturer	Mfr. Part No.
001-2060-0	U2	LM555, TIMER	NATIONAL	LM555CN
001-3886-0	U1	LM3886 ,68W AUDIO POWER AMP	NATIONAL	LM3886T
010-0000-0	Q2	2SC3381BL,NPNX2,80V,100MA,2-10M1B	TOSHIBA	2SC3281BL
010-0001-0	Q1 Q4-6 Q8 Q21	2SC3478, NPN,180V,100MA,TO-92	NEC	2SC3478-K
010-0003-0	Q11	2SC3502-F,NPN,200V,100MA,TO-126	TOSHIBA	2SC3502
010-0012-0	Q18-19 Q30	MPSA06, NPN,80V,500MA,TO-92	MOTOROLA	MPS-A06
010-0035-0	U3	LM35DT, TEMPERATURE SENSOR, TO-220	NATIONAL	LM35DT
010-1002-0	Q9-10 Q20	2SA1376, PNP,180V,100MA,TO-92	NEC	2SA1376-K
010-1003-0	Q14	2SA1380-F,PNP,200V,100MA,TO-126	SANYO/TOSHIBA	2SA1380-F/E
010-1013-0	Q12 Q15	MPSA56 PNP 80V 500MA TO-92	MOTOROLA	MPS-A56
012-0002-0	Q13 Q16-17	2SC4793,NPN,200V,1.5A,2-10R1A	TOSHIBA	2SC4793
012-0003-0	Q25-27 Q32 Q34-35	2SC5242,NPN,230V,15A,2-16C1A	TOSHIBA	2SC5242-O
012-1002-0	Q3 Q7 Q33	2SA1837,PNP,200V,1.5A,2-10R1A	TOSHIBA	2SA1837
012-1003-0	Q22-24 Q28-29 Q31	2SA1962,PNP,230V,15A,2-16C1A	TOSHIBA	2SA1962
014-0070-0	U5	LM317	NATIONAL	LM317
014-1072-0	U4	LM337	NATIONAL	LM337
020-0004-0	D13	1N755A, ZENER,7.5V,500MW ,D035	TAITRON	1N755A
020-0036-0	D5 D9	1N747A, ZENER, 3.6V, 5%, 400MW,	TAITRON	1N747A
020-0050-0	D8	1N751, ZENER,5.1V,10%,400MW,DO-35	NATIONAL	1N751
020-0240-0	D21	1N970B, ZENER, 24V, 5%, 500MW,	TAITRON	1N970B
020-1000-0	D2-4 D10-11 D14	1N4148, RECT-FAST, 200MA, 100V	MOTOROLA	1N4148
020-1022-0	D6-7	BAV20, RECT, 200V, DO-35	NATIONAL	BAV20
020-1104-0	D15	SHOTTKY, 1A, 40V, 10NS, DO-41	MOTOROLA	1N5819
020-1120-0	D1 D12	MUR120,RECT-FAST, 1A, 200V, 25NS,	MOTOROLA	MUR120
020-1122-0	D18-20 D22-24	MUR410, RECT-FAST, 4A, 100V	MOTOROLA	MUR410
020-2106-0	D16-17	1N4004,RECT,1A,400V,DO-41	TAITRON	1N4004
023-0112-0	BR1-3	BRIDGE, 25A, 200V, VERT, PC,	CHENG-YI	MP25-Q2S
031-1336-0	C20 C26	CAP,ELEC,RAD,336,20%,25V	UNITED CHEMI-CON	SRG25VB33RM5X7LL
031-2105-0	C21	CAP,ELEC,RAD, 105, 20%, 50V	UNITED CHEMI-CON	C440C105M5U5CA
031-2106-0	C33 C36-37	CAP,ELEC,RAD, 106, 20%, 50V	UNITED CHEMI-CON	SMG50VB10RM5X11LL
031-2106-A	C7	CAP,ELEC,RAD, 106, 20%, 50VNP	UNITED CHEMI-CON	SMEBP50VB10RM6X11LL
031-2107-0	C9 C31-32	CAP,ELEC,RAD,107, 20%, 50V	UNITED CHEMI-CON	SMG50VB101M8X11LL
031-2159-0	C30 C38 C40 C47	CAP, ELEC, RAD, 159, 20%, 50V	UNITED CHEMI-CON	SMH50VN153M35X45T2
031-2335-0	C13	CAP,ELEC,RAD,335,20%,50V	UNITED CHEMI-CON	SMG50VB3R3M5X11LL
031-4475-0	C16 C19	CAP,EL-R,4.7UF/100V, M	UNITED CHEMI-CON	SMG100VB4R7M5X11LL
031-4476-0	C14 C17	CAP,ELEC,RAD,476,-10%+50%,100V	UNITED CHEMI-CON	SMG100VB47RM10X12LL
032-4103-0	C23	CAP,PE,103,5%,100V,	PANASONIC	ECQV1103JM
032-4104-0	C4-6,18,24,34,35,41-46	CAP,PE,104,5%,100V,	PANASONIC	ECQV1104JM
032-4333-0	C11	CAP,PE,333,5%,100V,	PANASONIC	ECQV1333JM
032-4472-0	C1 C3 C8 C27-29	CAP,PE,472,5%,100V,	PANASONIC	ECQB1472JF
032-4474-0	C48	CAP,PE,474,5%,100V,	PANASONIC	ECQV1474JM
032-7104-0	C2 C25	CAP,PE,104,10%, 250V	ILLINOIS CAPACITOR	104MSR250K
034-4221-0	C10	CAP,MCR,220pF,5%,100V,	TAITRON	TMRS221J100NPOB
034-4471-0	C12	CAP,MCR,470pF,5%,100V,	TAITRON	TMRS471J100NPOB
034-7103-0	C39	CAP, CERMIC DISK, 103, 10%, X-250V	PANASONIC	ECK-DRS103ZV
035-8030-0	C15	CAP MICA AXIAL , 3pF, 10%, 500V	CORNELL	CD10CD030D03
035-8561-0	C22	CAP MICA RADIAL, 561, 5%, 300V	CORNELL	CD15FC561J103
052-2212-0	R43 R45	RES,METAL FILM,2.21k,1/4W,1%	ECI	M2F1AK002.21
052-5622-0	R25 R35	RES,METAL FILM,5.62K,1/4W,1%	ECI	M5F1AK005.62
053-0270-0	R1	RES ,CARBON FILM,2.7 ,1/2W,5%	ECI	R5J3AJ002.70
054-.100-0	R52,53,55,56,58-60,63 R64,66-68	RES, METAL OXIDE, 0.1 Ohm, 1W, 5%	ECI	MO10J3AJ000.10
054-.330-0	R79	RES, METAL OXIDE, 0.33 OHM, 1W, 5%	ECI	MO10J3AJ000.33
055-0101-0	R47-48	RES, METAL OXIDE, 10 OHM, 2W, 5%	ECI	MOM20J3AJ010.00
055-2702-0	R70-71	RES, METAL OXIDE, 2.7K OHM, 2W, 5%	ECI	MOM20J3AK002.70
056-0100-0	R46	RES, CERAMIC WW, 1.0 OHM, 5W, 10%	ECI	WWC50J3AJ001.00
059-1000-0	R17 R39	RES,MF,FUSE,10.0, 1/4W,1%	JUKN.OHM	FR25-10.0
059-1002-0	R20 R31 R50 R75 R78	RES,MF,FUSE,1.00K,1/4W,1%	JUKN.OHM	FR25-1.00K
059-4750-0	R26 R33	RES,MF,FUSE,47.5, 1/4W,1%	JUKN.OHM	FR25-47.5
059-6810-0	R61	RES,MF,FUSE,68.1, 1/4W,1%	JUKN.OHM	FR25-68.1
060-1001-0	R72	RES, METAL FILM, 100, 1/8W, 1%	ECI	M1F1AJ100.00
060-1002-0	R3,7,8,13,19,30,38,49	RES,METAL FILM, 1.00K, 1/8W, 1%	ECI	M1F1AK001.00
060-1003-0	R40-41	RES,METAL FILM, 10.0K, 1/8W,1%	ECI	M1F1AK010.00
060-1004-0	R36 R44	RES,METAL FILM, 100K, 1/8W, 1%	ECI	M1F1AK100.00
060-1213-0	R9 R18	RES,METAL FILM, 12.1K, 1/8W,1%	ECI	M1F1AK012.10

**700RB-II Power Amp 206-0250-A3**

Part No.	Reference	Description	Manufacturer	Mfr. Part No.
060-1821-0	R11 R14 R27	RES,METAL FILM, 182, 1/8W, 1%	ECI	M1F1AJ182.00
060-2001-0	R21	RES,METAL FILM, 200, 1/8W, 1%	ECI	M1F1AJ200.00
060-2002-0	R15-16 R22 R24	RES,METAL FILM, 2.00K, 1/8W, 1%	ECI	M1F1AK002.00
060-2003-0	R5-6	RES,METAL FILM, 20.0K, 1/8W, 1%	ECI	M1F1AK020.00
060-2004-0	R23	RES,METAL FILM, 200K, 1/8W, 1%	ECI	M1F1AK200.00
060-2431-0	R73 R77	RES,METAL FILM, 243, 1/8W, 1%	ECI	M1F1AJ243.00
060-2432-0	R32	RES,METAL FILM, 2.43K, 1/8W, 1%	ECI	M1F1AK002.43
060-2742-0	R74 R76	RES,METAL FILM, 2.74K, 1/8W, 1%	ECI	M1F1AK002.74
060-3922-0	R29	RES,METAL FILM, 3.92K, 1/8W, 1%	ECI	M1F1AK003.92
060-4323-0	R10	RES,METAL FILM, 43.2K, 1/8W, 1%	ECI	M1F1AK043.20
060-4751-0	R51,54,57,62,65,69	RES,METAL FILM, 475, 1/8W, 1%	ECI	M1F1AJ475.00
060-4752-0	R42	RES,METAL FILM, 4.75K, 1/8W, 1%	ECI	M1F1AK004.75
060-4753-0	R2 R34	RES,METAL FILM, 47.5K, 1/8W, 1%	ECI	M1F1AK047.50
060-5621-0	R12	RES,METAL FILM, 562, 1/8W, 1%	ECI	M1F1AJ562.00
060-7501-0	R37	RES,METAL FILM, 750, 1/8W, 1%	ECI	M1F1AJ750.00
070-0520-0	R28	POT,500B TRIM, 200mW	SONG HUEI	SH-655MCL-500B
081-0032-0	L1	INDUCTOR .4UH/1 OHM 2W RESISTOR	SCHONBERG	081-0032-0
081-0055-0	L2	INDUCTOR,2UH,20A,AIR CORE	SCHONBERG	081-0055-0
091-0028-0	F1	FUSE,5mm,T8AL,250V,SEMKO	LITTLE FUSE	218-008
091-1002-0	S1	THRM BRKR, 105C +/-5.0-DIFF, PC	KLIXON	7AM-028-A5
092-0001-0	J10	CON, IECX3, 10A, 250V, PC TERM	DIHTAIN	DTS-0045
092-0066-0	J12-19 J21-23	FASTON, M, PC, .250"	KEYSTONE	1021
092-0070-0	J1-2	JACK,SPEAKON,PC MOUNT, NEUTRIK	SWITCHCRAFT	HPCP41RA
092-0082-0	J6-7	JACK,1/4",MONO,PC, GROUNDING	NEUTRIK	S102-84G
093-0025-0	J5 J9	HDR,.1X2,VERT,MALE,LOCK,GOLD	AMP	641126-2
093-0051-0	J3-4	HDR, 2MMX2, VERT, LOCK	JST	B2B-PH-K-S
093-1010-0	J20	HDR,.156X7,VERT,MALE,LOCK,SQUARE	MOLEX	26-60-4070
093-2005-0	J8	HDR, 2MMX7, VERT, SHROUDED	JST	B7B-PH-K-S
094-0004-0	J11	FUSE CLIP, 5MM, 15A, P.C.	MOUSER	44FH052
145-0250-A3		700RB-II POWER AMP BOARD		
086-0000-0		FAN, 24VDC, 160MA, 80X80MM	ADDA	08-24-HB-A70GL
093-0506-0		HSG, .1X2, LOCKING, CRIMP 093-0909	MOLEX	22-01-3027
093-0909-0		TERM, CRIMP, .1, 22GA	MOLEX	08-50-0113
095-0006-0		HEAT SHRINK 3/16"		
104-0003-0	INDUCTOR	SPACER,NYLON,#4X.2X.2D		
105-0014-0		INSULATOR TAPE 4"X7MIL	THERMALLOY	SILPAD 400AC
111-7017-0	REG, LM35,LM3886	WASHER, SHOULDER,#4 NYLON		
117-0097-0	TO-220,LM3886	BOLT,M3X9,M1,PHP/SW/PW,CHROME		
117-0127-0	POWER TRAN	BOLT,M3X12,M1,PHP/SW/PW,CHROME		
117-0357-0	FAN	BOLT,M3X35,M1,PHP/SW/PW,CHROME		
117-7002-1	FAN	WASHER,M3,PLAIN, CHROME		
132-0024-F1	HEATSINK	700RB HEATSINK		
153-0105-0		LABEL, BLANK,.9"X.25"		
202-6000-A	CHASSIS GND	WIRE ASSY,14GA,GRN/YEL,4",GND		



### PCB WORK INSTRUCTIONS

DWG 420-0250-A3

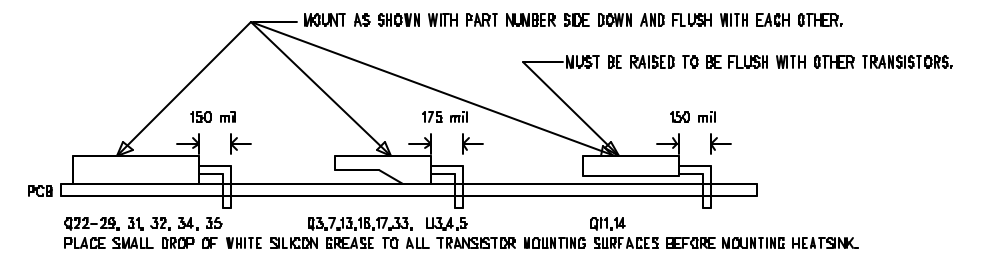
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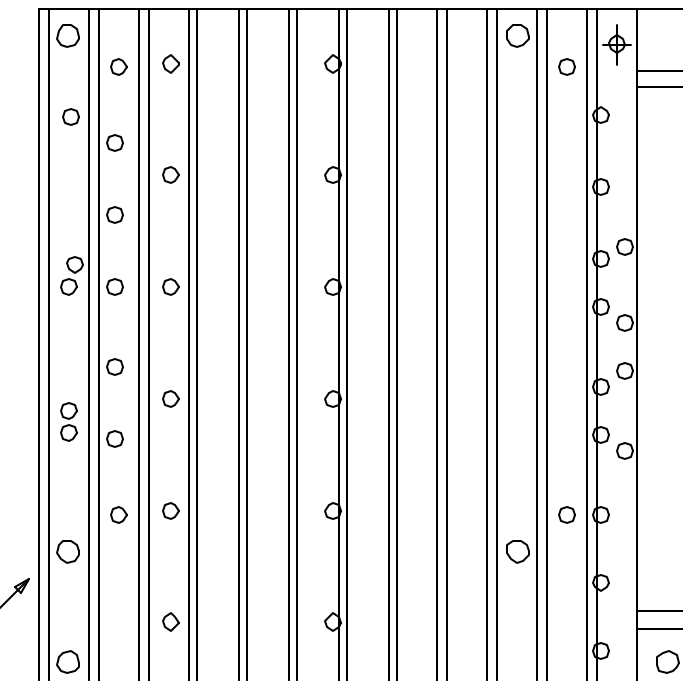
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3. ALL BOARDS MUST BE BARE BOARD TESTED.
4. ASSEMBLE AND SOLDER PER ANSI/IPC-A-610B.

##### LOADING

5. SEE FORMING AND LOADING INSTRUCTIONS BELOW FOR INSTALLING SPECIFIED COMPONENTS.
6. CHECK THAT R52,53,55,56,58,60,63,64,66,67,68 & 51 ARE FLUSH TO BOARD.
7. CHECK THAT ALL CONNECTORS AND JACKS ARE FLUSH WITH PCB.
8. MAKE CERTAIN ALL POWER TRANSISTOR MOUNTING HOLES ARE PROPERLY ALIGNED FOR HEAT SINK.



##### HEAT SINK ASSEMBLY



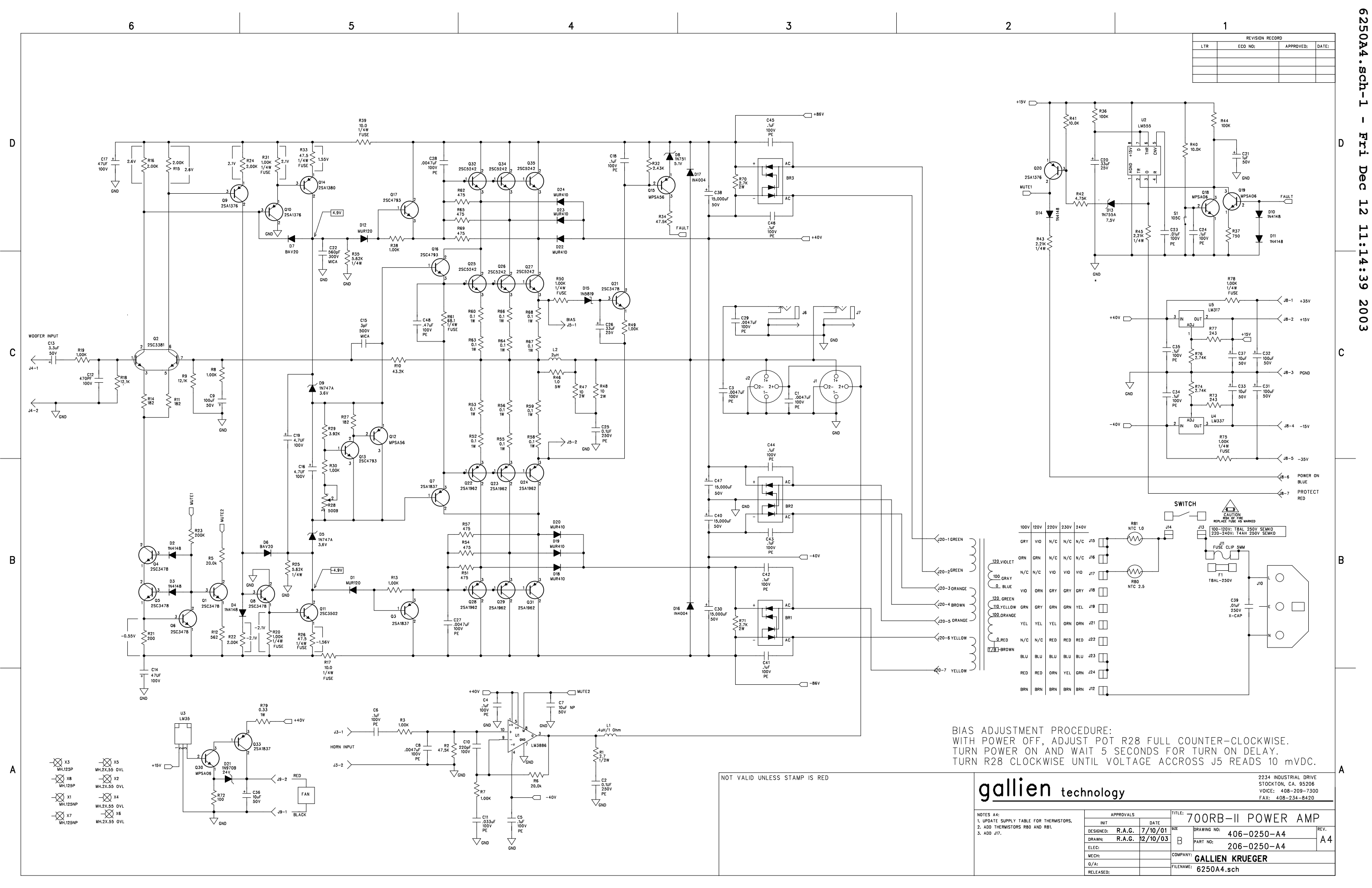
APPLY THERMAL INSULATOR TAPE (105-0014-0), AND ALIGN WITH THIS EDGE.

NOT VALID UNLESS STAMP IS RED		<b>gallien technology</b>		2234 INDUSTRIAL DRIVE STOCKTON, CA, 95206 VOICE: 209-234-7300 FAX: 209-234-0129	
APPROVALS			TITLE: 700RB-II POWER AMP BD		
INIT	DATE	SIZE	DRAWING NO:	REV.	
DESIGNED: R.A.G.	7/16/01	B	405-0250-A3	A3	
DRAWN: R.A.G.	11/19/03		PART NO:		
ELEC:			145-0250-A3		
LAYER DESCRIPTION:		COMPANY: GALLIEN-KRUEGER			
SOLR SSBRE ENLBSKSTR061N		FILENAME: 5250A3			
MECH:		GERBER FILE NAME: sst0120ppbo			

Customer Name:		<b>Gallien-Krueger</b>		Current Rev #:	<b>A3</b>	New ECO Rev #:	<b>A4</b>
Model:		700RB-II		Distribute To:		Page:	1 Of: 1
Assembly Description:		700RB-II power amp board		Originator:	R.A.G.		
Assembly Numbers:		206-0250-A 145-0250-A		Approved by:			
				Effective Date:	12/14/2003		
Effective				Document Update		Date	Initials
<input checked="" type="checkbox"/>	All in Process	<input checked="" type="checkbox"/>	Next Buy	<input type="checkbox"/>	Artwork		
<input type="checkbox"/>	All in Service	<input type="checkbox"/>	Next Production Run	<input type="checkbox"/>	Assembly Dwg.		
<input type="checkbox"/>	All in Stock	<input type="checkbox"/>		<input checked="" type="checkbox"/>	Board Artwork		
Beginning Serial Number:				<input checked="" type="checkbox"/>	BOM		
Reason For Change				<input type="checkbox"/>	Control Form		
Prevent fuse failure due to inrush current at turn on. An improvement to A3 which was not put into production.				<input checked="" type="checkbox"/>	Costing		
				<input type="checkbox"/>	Fab Drawing		
				<input type="checkbox"/>	Inspection Proc.		
				<input checked="" type="checkbox"/>	Part Master File		
				<input checked="" type="checkbox"/>	Schematic		
				<input type="checkbox"/>	Service Manual		
				<input type="checkbox"/>	Test Procedure		
				<input type="checkbox"/>			
				<input type="checkbox"/>			
Other Affected Assemblies							
<input type="checkbox"/> Continued on ECO Supplement Page							
Description Of Change				Distribution		Date	Initials
Add NTC thermistors to the primary side of the transformer. One for 120V and another for 230V. An additional primary terminal is added to accommodate the wiring.				<input type="checkbox"/>	Accounting		
For current production a thermistor of the proper value will be added to the bottom of the board.				<input type="checkbox"/>	Assembly		
For 220V-240V use NTC-2.5R/6A.				<input type="checkbox"/>	Customer		
For 100V-120V use NTC-1R/10A.				<input checked="" type="checkbox"/>	Engineering		
				<input checked="" type="checkbox"/>	Incoming Q.C.		
				<input type="checkbox"/>	Planning		
				<input checked="" type="checkbox"/>	Production Eng.		
				<input checked="" type="checkbox"/>	Purchasing		
				<input type="checkbox"/>	Q.A.		
				<input type="checkbox"/>	Receiving		
				<input checked="" type="checkbox"/>	Service		
				<input type="checkbox"/>	Test		
				<input type="checkbox"/>	Vendor		
				<input type="checkbox"/>			
				<input type="checkbox"/>			
<input type="checkbox"/> Continued on ECO Supplement Page				<input type="checkbox"/>	Drawing(s) attached		
Part Number	Description	Parts Added		Parts Deleted			
		Qty	Ref. Designator	Qty	Ref. Designator		
022-3002-0	THR NTC-1R/10A	1	R81				
022-3004-0	THR NTC-2.5R/6A	1	R80				
092-0066-0	FASTON	1	J24				



REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



BIAS ADJUSTMENT PROCEDURE:  
 WITH POWER OFF, ADJUST POT R28 FULL COUNTER-CLOCKWISE.  
 TURN POWER ON AND WAIT 5 SECONDS FOR TURN ON DELAY.  
 TURN R28 CLOCKWISE UNTIL VOLTAGE ACROSS J5 READS 10 mVDC.

NOT VALID UNLESS STAMP IS RED

**gallien technology**

2234 INDUSTRIAL DRIVE  
 STOCKTON, CA. 95206  
 VOICE: 408-209-7300  
 FAX: 408-234-8420

TITLE: **700RB-II POWER AMP**

DESIGNED: R.A.G.	DATE: 7/10/01	REV.:
DRAWN: R.A.G.	DATE: 12/10/03	A4
ELEC:		
MECH:		
Q/A:		
RELEASED:		

COMPANY: **GALLIEN KRUEGER**

FILENAME: 6250A4.sch

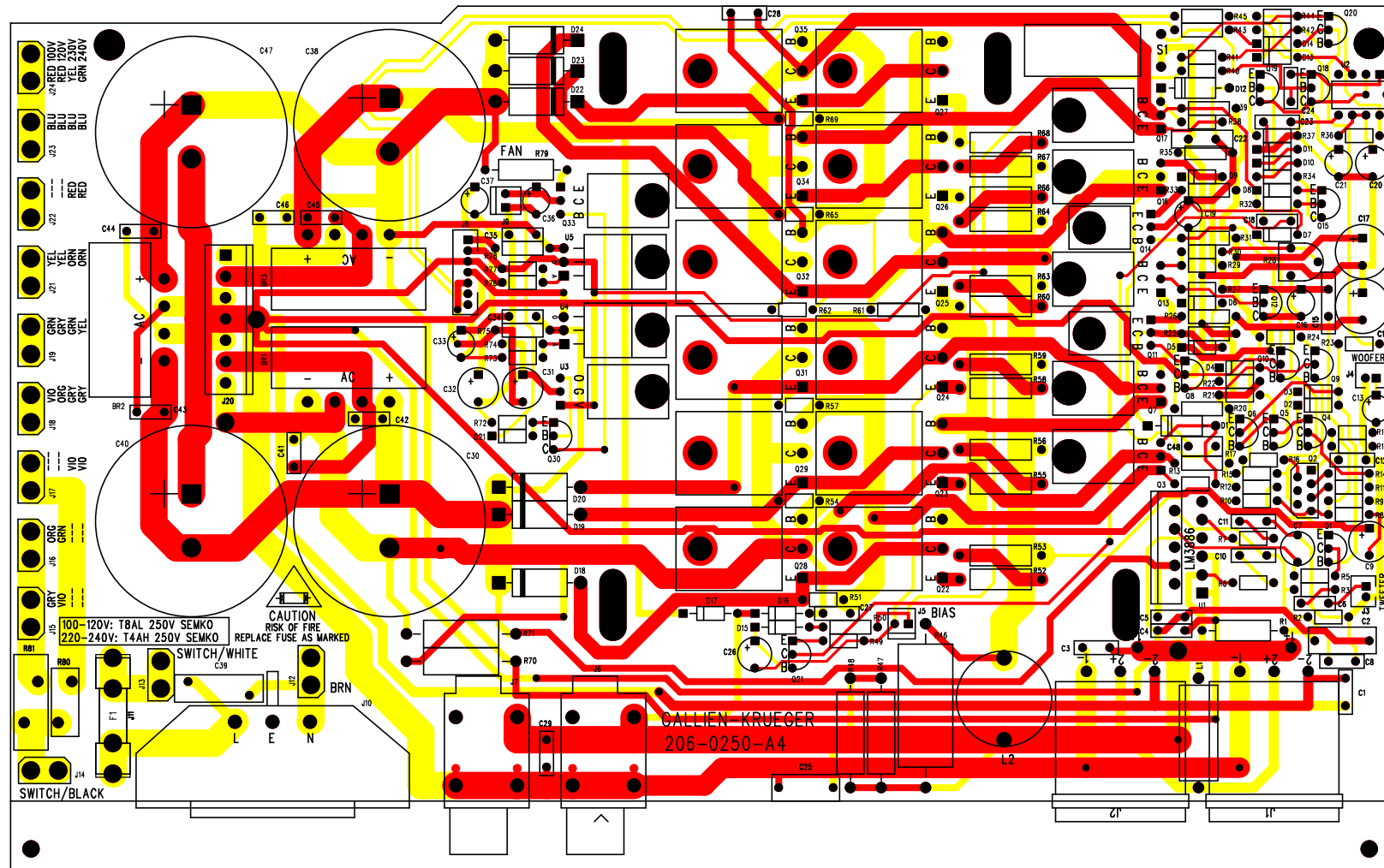
- X3 MHL125P
- X5 MHL2X.55 OVL
- X8 MHL125P
- X2 MHL2X.55 OVL
- X1 MHL125NP
- X4 MHL2X.55 OVL
- X6 MHL2X.55 OVL
- X7 MHL125NP

# GK GALLIEN-KRUEGER

## 700RB-II Power Amp 206-0250-A4

Part No.	Reference	Description	Manufacturer	Mfr. Part No.
001-2060-0	U2	LM555, TIMER	NATIONAL	LM555CN
001-3886-0	U1	LM3886 ,68W AUDIO POWER AMP	NATIONAL	LM3886T
010-0000-0	Q2	2SC3381BL,NPNX2,80V,100MA,2-10M1B	TOSHIBA	2SC3281BL
010-0001-0	Q1 Q4-6 Q8 Q21	2SC3478, NPN,180V,100MA,TO-92	NEC	2SC3478-K
010-0003-0	Q11	2SC3502-F,NPN,200V,100MA,TO-126	TOSHIBA	2SC3502
010-0012-0	Q18-19 Q30	MPSAO6, NPN,80V,500MA,TO-92	MOTOROLA	MPS-A06
010-0035-0	U3	LM35DT, TEMPERATURE SENSOR, TO-220	NATIONAL	LM35DT
010-1002-0	Q9-10 Q20	2SA1376, PNP,180V,100MA,TO-92	NEC	2SA1376-K
010-1003-0	Q14	2SA1380-F,PNP,200V,100MA,TO-126	SANYO/TOSHIBA	2SA1380-F/E
010-1013-0	Q12 Q15	MPSA56 PNP 80V 500MA TO-92	MOTOROLA	MPS-A56
012-0002-0	Q13 Q16-17	2SC4793,NPN,200V,1.5A,2-10R1A	TOSHIBA	2SC4793
012-0003-0	Q25-27 Q32 Q34-35	2SC5242,NPN,230V,15A,2-16C1A	TOSHIBA	2SC5242-O
012-1002-0	Q3 Q7 Q33	2SA1837,PNP,200V,1.5A,2-10R1A	TOSHIBA	2SA1837
012-1003-0	Q22-24 Q28-29 Q31	2SA1962,PNP,230V,15A,2-16C1A	TOSHIBA	2SA1962
014-0070-0	U5	LM317	NATIONAL	LM317
014-1072-0	U4	LM337	NATIONAL	LM337
020-0004-0	D13	1N755A, ZENER,7.5V,500MW ,D035	TAITRON	1N755A
020-0036-0	D5 D9	1N747A, ZENER, 3.6V, 5%, 400MW,	TAITRON	1N747A
020-0050-0	D8	1N751, ZENER,5.1V,10%,400MW,DO-35	NATIONAL	1N751
020-0240-0	D21	1N970B, ZENER, 24V, 5%, 500MW,	TAITRON	1N970B
020-1000-0	D2-4 D10-11 D14	1N4148, RECT-FAST, 200MA, 100V	MOTOROLA	1N4148
020-1022-0	D6-7	BAV20, RECT, 200V, DO-35	NATIONAL	BAV20
020-1104-0	D15	SHOTTKY, 1A, 40V, 10NS, DO-41	MOTOROLA	1N5819
020-1120-0	D1 D12	MUR120,RECT-FAST, 1A, 200V, 25NS,	MOTOROLA	MUR120
020-1122-0	D18-20 D22-24	MUR410, RECT-FAST, 4A, 100V	MOTOROLA	MUR410
020-2106-0	D16-17	1N4004,RECT,1A,400V,DO-41	TAITRON	1N4004
022-3002-0	R81	THERMISTOR, NTC,1 OHM 10 AMP.	UEI	N20SP001M
022-3004-0	R80	THERMISTOR, NTC,2.5 OHM 6 AMP.	UEI	N13SP2R5M
023-0112-0	BR1-3	BRIDGE, 25A, 200V, VERT, PC,	CHENG-YI	MP25-02S
031-1336-0	C20 C26	CAP,ELEC,RAD,336,20%,25V	UNITED CHEMI-CON	SRG25VB33RM5X7LL
031-2105-0	C21	CAP,ELEC,RAD, 105, 20%, 50V	UNITED CHEMI-CON	C440C105M5U5CA
031-2106-0	C33 C36-37	CAP,ELEC,RAD, 106, 20%, 50V	UNITED CHEMI-CON	SMG50VB10RM5X11LL
031-2106-A	C7	CAP,ELEC,RAD, 106, 20%, 50VNP	UNITED CHEMI-CON	SMEBP50VB10RM6X11LL
031-2107-0	C9 C31-32	CAP,ELEC,RAD,107, 20%, 50V	UNITED CHEMI-CON	SMG50VB101M8X11LL
031-2159-0	C30 C38 C40 C47	CAP, ELEC, RAD, 159, 20%, 50V	UNITED CHEMI-CON	SMH50VN153M35X45T2
031-2335-0	C13	CAP,ELEC,RAD,335,20%,50V	UNITED CHEMI-CON	SMG50VB3R3M5X11LL
031-4475-0	C16 C19	CAP,EL-R,4.7UF/100V, M	UNITED CHEMI-CON	SMG100VB47RM5X11LL
031-4476-0	C14 C17	CAP,ELEC,RAD,476,-10%+50%,100V	UNITED CHEMI-CON	SMG100VB47RM10X12LL
032-4103-0	C23	CAP,PE,103,5%,100V,	PANASONIC	ECQV1103JM
032-4104-0	C4-6,18,24,34,35,41-46	CAP,PE,104,5%,100V,	PANASONIC	ECQV1104JM
032-4333-0	C11	CAP,PE,333,5%,100V,	PANASONIC	ECQV1333JM
032-4472-0	C1 C3 C8 C27-29	CAP,PE,472,5%,100V,	PANASONIC	ECQB1472JF
032-4474-0	C48	CAP,PE,474,5%,100V,	PANASONIC	ECQV1474JM
032-7104-0	C2 C25	CAP,PE,104,10%, 250V	ILLINOIS CAPACITOR	104MSR250K
034-4221-0	C10	CAP,MCR,220pF,5%,100V,	TAITRON	TMRS221J100NPOB
034-4471-0	C12	CAP,MCR,470pF,5%,100V,	TAITRON	TMRS471J100NPOB
034-7103-0	C39	CAP, CERMIC DISK, 103, 10%, X-250V	PANASONIC	ECK-DRS103ZV
035-8030-0	C15	CAP MICA AXIAL , 3pF, 10%, 500V	CORNELL	CD10CD030D03
035-8561-0	C22	CAP MICA RADIAL, 561, 5%, 300V	CORNELL	CD15FC561J103
052-2212-0	R43 R45	RES,METAL FILM,2.21k,1/4W,1%	ECI	M2F1AK002.21
052-5622-0	R25 R35	RES,METAL FILM,5.62K,1/4W,1%	ECI	M5F1AK005.62
053-0270-0	R1	RES ,CARBON FILM,2.7 ,1/2W,5%	ECI	R5J3AJ002.70
054-.100-0	R52,53,55,56,58-60,63 R64,66-68	RES, METAL OXIDE, 0.1 Ohm, 1W, 5%	ECI	MO10J3AJ000.10
054-.330-0	R79	RES, METAL OXIDE, 0.33 OHM, 1W, 5%	ECI	MO10J3AJ000.33
055-0101-0	R47-48	RES, METAL OXIDE, 10 OHM, 2W, 5%	ECI	MOM20J3AJ010.00
055-2702-0	R70-71	RES, METAL OXIDE, 2.7K OHM, 2W, 5%	ECI	MOM20J3AK002.70
056-0100-0	R46	RES, CERAMIC WW, 1.0 OHM, 5W, 10%	ECI	WWC50J3AJ001.00
059-1000-0	R17 R39	RES,MF,FUSE,10.0, 1/4W,1%	JUKN.OHM	FR25-10.0
059-1002-0	R20 R31 R50 R75 R78	RES,MF,FUSE,1.00K,1/4W,1%	JUKN.OHM	FR25-1.00K
059-4750-0	R26 R33	RES,MF,FUSE,47.5, 1/4W,1%	JUKN.OHM	FR25-47.5
059-6810-0	R61	RES,MF,FUSE,68.1, 1/4W,1%	JUKN.OHM	FR25-68.1
060-1001-0	R72	RES, METAL FILM, 100, 1/8W, 1%	ECI	M1F1AJ100.00
060-1002-0	R3,7,8,13,19,30,38,49	RES,METAL FILM, 1.00K, 1/8W, 1%	ECI	M1F1AK001.00
060-1003-0	R40-41	RES,METAL FILM, 10.0K, 1/8W,1%	ECI	M1F1AK010.00
060-1004-0	R36 R44	RES,METAL FILM, 100K, 1/8W, 1%	ECI	M1F1AK100.00
060-1213-0	R9 R18	RES,METAL FILM, 12.1K, 1/8W,1%	ECI	M1F1AK012.10





PCB WORK INSTRUCTIONS

DWG 420-0250-A4

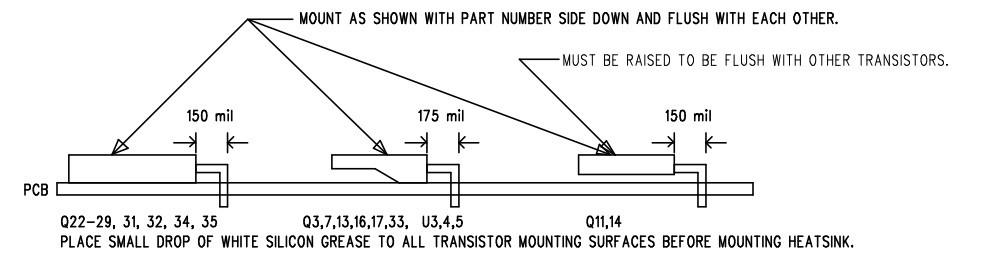
NOTES:

UNLESS OTHERWISE SPECIFIED:

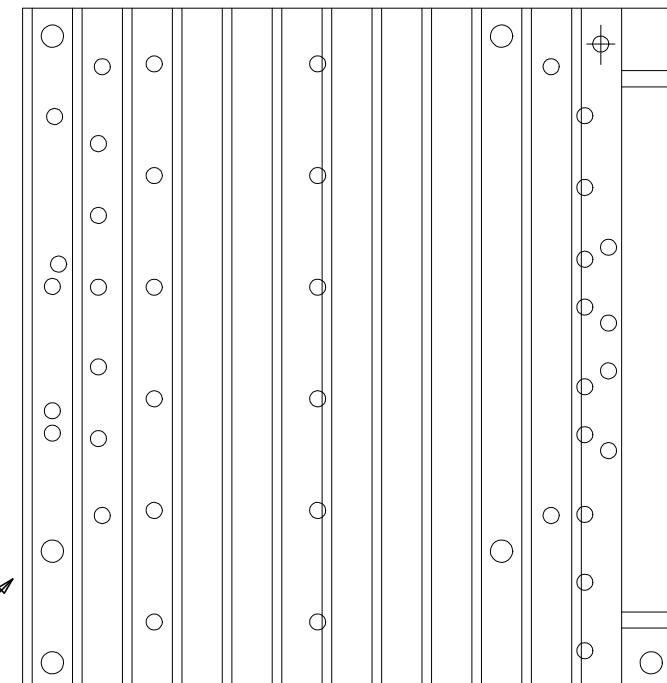
1. SQUARE PADS ON THRU HOLE PARTS (ie: CONNECTORS, DIPS, SIPS, LEDS) DENOTE PIN 1.
2. ALL BOARDS REQUIRE A COMPLETE AND THOROUGH VISUAL INSPECTION.
3. ALL BOARDS MUST BE BARE BOARD TESTED.
4. ASSEMBLE AND SOLDER PER ANSI/IPC-A-610B.

LOADING

5. SEE FORMING AND LOADING INSTRUCTIONS BELOW FOR INSTALLING SPECIFIED COMPONENTS.
6. CHECK THAT R52,53,55,56,58,60,63,64,66,67,68 & S1 ARE FLUSH TO BOARD.
7. CHECK THAT ALL CONNECTORS AND JACKS ARE FLUSH WITH PCB.
8. MAKE CERTAIN ALL POWER TRANSISTOR MOUNTING HOLES ARE PROPERLY ALIGNED FOR HEAT SINK.



HEAT SINK ASSEMBLY



APPLY THERMAL INSULATOR TAPE (105-0014-0), AND ALIGN WITH THIS EDGE.

NOT VALID UNLESS STAMP IS RED		<b>gallien technology</b>		2234 INDUSTRIAL DRIVE STOCKTON CA. 95206 VOICE: 209-234-7300 FAX: 209-234-8420	
APPROVALS		TITLE: 700RB-II POWER AMP BD			
INIT	DATE	SIZE	DRAWING NO:	REV.	
DESIGNED: R.A.G.	7/16/01	B	405-0250-A4	A4	
DRAWN: R.A.G.	12/10/03		PART NO:	145-0250-A4	
ELEC:		COMPANY: GALLIEN-KRUEGER			
MECH:		FILENAME: 5250A4			
GERBER FILE NAME: sst01250ppbo					
LAYER DESCRIPTION: SILKSCREEN					

This document is generated to address fuse failure due to excessive inrush current during turn on. It is applicable to 700RB-II power amp boards with part number 206-0250-A2 and 1001RB-II power amp boards with part number 206-0260-A2. To correct the problem, a thermistor with part number 022-3004-0 is soldered in series with the primary side of the transformer on 700RB-II power amp board or thermistor with part number 022-3008-0 on 1001RB-II power amp board.

The following is a guideline on how to modify the unit with the thermistor :

**STEP I:**

If the unit is a head version of 700RB-II or 1001RB-II remove the top cover then remove the power amp board from the chassis assembly.

If the unit is a combo version of 700RB-II and 1001RB-II, remove the chassis assembly from the cabinet, then remove the power amp board. Please see figure 1.



Chassis Assembly  
**figure 1**

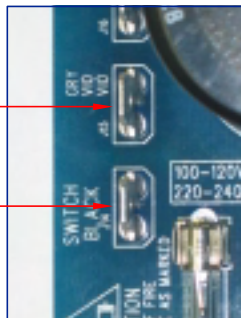
power amp board

**STEP II:**

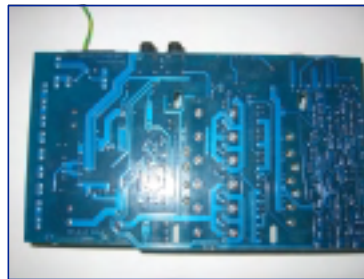
Locate J14 and J15 on the power amp board (figure 2a). Turn the power amp board over as per figure 2b.

location of J15

location of J14



**figure 2a**

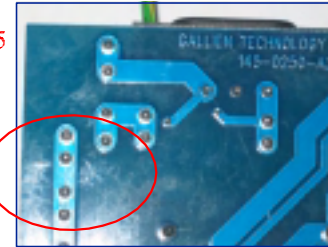


Power Amp Board  
**figure 2b**

**STEP III:**

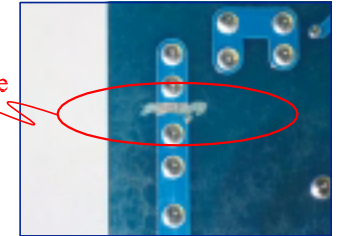
Locate J14 and J15 on the bottom/solder side of the board (figure 3a). Cut the trace between J14 and J15 as shown in figure 3b.

location of J14 and J15 on the bottom/solder side of the board



**figure 3a**

cut the trace here



**figure 3b**

**STEP IV:**

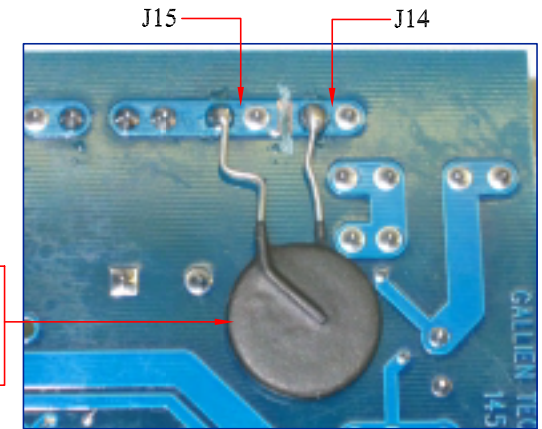
Solder one lead of Thermistor (022-3004-0) to J14 and the other to J15 on the 700RB-II power amp board, or thermistor 022-3008-0 on 1001RB-II power amp board as shown in figure 4.

*Note: Make sure that no portion or part of the thermistor is touching any terminal on the board except terminals J14 and J15.*

Thermistor NTC 2.5 ohms, 6 amperes  
P.N: 022-3004-0  
for 700RB-II power amp board

or

Thermistor NTC 2 ohms, 8 amperes  
P.N: 022-3008-0  
for 1001RB-II power amp board



**figure 4**

<p>PROPRIETARY</p> <p>THE DRAWING CONTAINS INFORMATION WHICH IS PROPRIETARY TO GALLIEN TECHNOLOGY CORPORATION. DO NOT REPRODUCE IN ANY FORM OR DISTRIBUTE IN ANY FASHION WITHOUT THE EXPRESS WRITTEN PERMISSION OF GALLIEN TECHNOLOGY CORPORATION.</p>		
<p>APPROVAL</p>		
DEPT.	INITIAL	DATE
PRODUCTION	NOLLVAIDZ	12/18/2003

<p><b>gallien technology</b> 2234 INDUSTRIAL DRIVE STOCKTON, CA, 95207</p>	
<p>TITLE <b>THERMISTOR MODIFICATION</b></p>	
FILE NAME	REV.
DOCUMENT NUMBER	SIZE
SCALE NOT TO SCALE	SHEET 1 OF 1