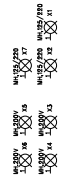


REVISION RECORD	
LT#	DATE

- NOTES: UNLESS OTHERWISE SPECIFIED,
 1. TEST CONDITIONS: 100mV 1kHz SINE DIRECT INPUT (PRE-AMP BYPASSED) NO LOAD
 2. DENOTES RMS AC VOLTAGE

BIAS ADJUSTMENT PROCEDURE:
 WITH POWER OFF, ADJUST POT R21 TO FULL COUNTER-CLOCKWISE POSITION.
 TURN ON POWER AND WAIT 5 SECONDS FOR TURN ON DELAY.
 TURN R21 CLOCKWISE UNTIL VOLTAGE ACROSS P3 READS 10 mVDC.



NOT VALID UNLESS STAMP IS RED

gallien technology	
REV. NO.	DATE
RECORDED: R.A.C.	11/9/98
DRAWN: R.A.C.	11/26/02
REG. NO.	
COMPANY:	GALLIEN KRUEGER
RELEASED:	

TITLE	
APPIN#	REV.
400RB-IV POWER AMP	A
406-0240-A	B
206-0240-A	A

NOT VALID UNLESS STAMP IS RED	
REV. NO.	DATE
RECORDED: R.A.C.	11/9/98
DRAWN: R.A.C.	11/26/02
REG. NO.	
COMPANY:	GALLIEN KRUEGER
RELEASED:	

GALLIEN-KRUEGER

400RB-IV Power Amp

Part No.	Reference	Description	Manufacturer	Mfr. Part No.
001-2060-0	U1	LM555, TIMER	NATIONAL	LM555CN
010-0000-0	Q7	2SC3381BL,NPNX2,80V,100MA,2-10M1B	TOSHIBA	2SC3281BL
010-0001-0	Q2 Q6	2SC3478, NPN,180V,100MA,TO-92	NEC	2SC3478-K
010-0003-0	Q15	2SC3502-F,NPN,200V,100MA,TO-126	TOSHIBA	2SC3502
010-0012-0	Q1 Q3-4 Q10 Q12 Q29	MPSAO6, NPN,80V,500MA,TO-92	MOTOROLA	MPS-A06
010-0035-0	Q27	LM35DT, TEMPERATURE SENSOR, TO-220	NATIONAL	LM35DT
010-1002-0	Q5 Q9	2SA1376, PNP,180V,100MA,TO-92	NEC	2SA1376-K
010-1003-0	Q17	2SA1380-F,PNP,200V,100MA,TO-126	SANYO/TOSHIBA	2SA1380-F/E
010-1013-0	Q8 Q11 Q13	MPSA56 PNP 80V 500MA TO-92	MOTOROLA	MPS-A56
012-0002-0	Q16 Q18 Q20	2SC4793,NPN,200V,1.5A,2-10R1A	TOSHIBA	2SC4793
012-0003-0	Q24-26	2SC5242,NPN,230V,15A,2-16C1A	TOSHIBA	2SC5242-O
012-1002-0	Q14 Q19 Q28	2SA1837,PNP,200V,1.5A,2-10R1A	TOSHIBA	2SA1837
012-1003-0	Q21-23	2SA1962,PNP,230V,15A,2-16C1A	TOSHIBA	2SA1962
020-0004-0	D11	1N755A, ZENER,7.5V,500MW ,D035	TAITRON	1N755A
020-0050-0	D7	1N751, ZENER,5.1V,10%,400MW,DO-35	NATIONAL	1N751
020-0150-0	D12 D17	1N965B, ZENER, 15V, 5%, 500mW, DO-35	TAITRON	1N965B
020-0240-0	D18	1N970B, ZENER, 24V, 5%, 500MW, DO-35	TAITRON	1N970B
020-1000-0	D2-3 D5 D8-10 D13-16	1N4148, RECT-FAST, 200MA, 100V	MOTOROLA	1N4148
020-1022-0	D4 D6	BAV20, RECT, 200V, DO-35	NATIONAL	BAV20
020-1104-0	D1	SHOTTKY, 1A, 40V, 10NS, DO-41	MOTOROLA	1N5819
020-2106-0	D19-20	1N4004,RECT,1A,400V,DO-41	TAITRON	1N4004
023-0112-0	BR1	BRIDGE, 25A, 200V, VERT, PC, MO25S-02	CHENG-YI	MP25-02S
031-1336-0	C11	CAP,ELEC,RAD,336,20%,25V	UNITED CHEMI-CON	SRG25VB333RM5X7LL
031-2105-0	C12	CAP,ELEC,RAD, 105, 20%, 50V	UNITED CHEMI-CON	C440C105M5U5CA
031-2106-0	C2 C4 C6 C20-21	CAP,ELEC,RAD, 106, 20%, 50V	UNITED CHEMI-CON	SMG50VB10RM5X11LL
031-2107-0	C1 C17 C19	CAP,ELEC,RAD,107, 20%, 50V	UNITED CHEMI-CON	SMG50VB101M8X11LL
031-3129-0	C25-26	CAP, ELEC, RAD, 129, 20%, 63V	UNITED CHEMI-CON	SMH63VN123M35X45T2
031-3476-0	C13-14 C16 C18	CAP,ELEC,RAD,476,20%,63V	UNITED CHEMI-CON	SMG63VB476RM6X11LL
032-4102-0	C24	CAP,PE,102,5%,100V,	PANASONIC	ECQB1102JF
032-4103-0	C15	CAP,PE,103,5%,100V,	PANASONIC	ECQV1103JM
032-4104-0	C7-9	CAP,PE,104,5%,100V,	PANASONIC	ECQV1104JM
032-7104-0	C22 C27-28	CAP,PE,104,10%, 250V	ILLINOIS CAPACITOR	104MSR250K
034-4471-0	C5	CAP,MCR,470pF,5%,100V,	TAITRON	TMRS471J100NPOB
034-7103-0	C23	CAP, CERMIC DISK, 103, 10%, X-250V	PANASONIC	ECK-DRS103ZV
035-8030-0	C3	CAP MICA AXIAL , 3pF, 10%, 500V	CORNELL	CD10CD030D03
035-8561-0	C10	CAP MICA RADIAL, 561, 5%, 300V	CORNELL	CD15FC561J103
052-2.74-0	R40 R44	RES,METAL FILM,2.74, 1/4W, 1%	ECI	M2F1AJ002.74
052-2212-0	R35 R37	RES,METAL FILM,2.21k,1/4W,1%	ECI	M2F1AK002.21
052-5622-0	R18 R30	RES,METAL FILM,5.62K,1/4W,1%	ECI	M5F1AK005.62
054-.100-0	R46-57	RES, METAL OXIDE, 0.1 Ohm, 1W, 5%	ECI	MO10J3AJ000.10
054-.330-0	R60	RES, METAL OXIDE, 0.33 OHM, 1W, 5%	ECI	MO10J3AJ000.33
055-0101-0	R58-59	RES, METAL OXIDE, 10 OHM, 2W, 5%	ECI	MOM20J3AJ010.00
056-0100-0	R62	RES, CERAMIC WW, 1.0 OHM, 5W, 10%	ECI	WWC50J3AJ001.00
059-1000-0	R33-34	RES,MF,FUSE,10.0 OHM, 1/4W,1%	JUKN.OHM	FR25-10.0
059-1002-0	R3 R7 R27	RES,MF,FUSE,1.00K,1/4W,1%	JUKN.OHM	FR25-1.00K
059-2432-0	R36 R38	RES,MF,FUSE,2.43K, 1/4W,1%	JUKN.OHM	FR25-2.43K
059-4750-0	R20 R31	RES,MF,FUSE,47.5 OHM, 1/4W,1%	JUKN.OHM	FR25-47.5
059-6810-0	R45	RES,MF,FUSE,68.1 OHM, 1/4W,1%	JUKN.OHM	FR25-68.1
060-1001-0	R61	RES, METAL FILM, 100 OHM, 1/8W, 1%	ECI	M1F1AJ100.00
060-1002-0	R2 R6 R16 R23	RES,METAL FILM, 1.00K, 1/8W, 1%	ECI	M1F1AK001.00
060-1003-0	R24 R41	RES,METAL FILM, 10.0K, 1/8W,1%	ECI	M1F1AK010.00
060-1004-0	R28-29	RES,METAL FILM, 100K, 1/8W, 1%	ECI	M1F1AK100.00
060-1213-0	R5 R14	RES,METAL FILM, 12.1K OHM, 1/8W, 1%	ECI	M1F1AK012.10
060-1821-0	R11-12 R22	RES,METAL FILM, 182, 1/8W, 1%	ECI	M1F1AJ182.00
060-2001-0	R4	RES,METAL FILM, 200, 1/8W, 1%	ECI	M1F1AJ200.00
060-2003-0	R42-43	RES,METAL FILM, 20.0K, 1/8W, 1%	ECI	M1F1AK020.00
060-2004-0	R8	RES,METAL FILM, 200K, 1/8W, 1%	ECI	M1F1AK200.00
060-2212-0	R9 R13 R15 R17	RES,METAL FILM, 2.21K, 1/8W, 1%	ECI	M1F1AK002.21
060-2432-0	R21	RES,METAL FILM, 2.43K, 1/8W, 1%	ECI	M1F1AK002.43
060-3922-0	R25	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
060-4752-0	R39	RES,METAL FILM, 4.75K, 1/8W, 1%	ECI	M1F1AK004.75
060-4753-0	R26	RES,METAL FILM, 47.5K, 1/8W, 1%	ECI	M1F1AK047.50
060-6812-0	R1	RES,METAL FILM, 6.81K, 1/8W, 1%	ECI	M1F1AK006.81
060-7501-0	R32	RES,METAL FILM, 750 OHM, 1/8W, 1%	ECI	M1F1AJ750.00

PCB WORK INSTRUCTIONS
 DWG 420-0240-A

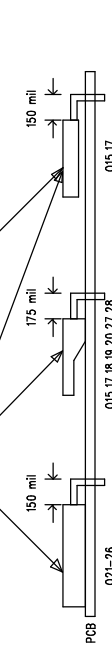
NOTES:

- UNLESS OTHERWISE SPECIFIED:
 1. SQUARE PADS ON PARTS DENOTE PIN 1.
 2. ALL BOARDS REQUIRE A COMPLETE VISUAL INSPECTION.
 3. ALL BOARDS MUST BE BARE BOARD TESTED.
 4. ASSEMBLE AND SOLDER PER ANS/IPC-A-610B.

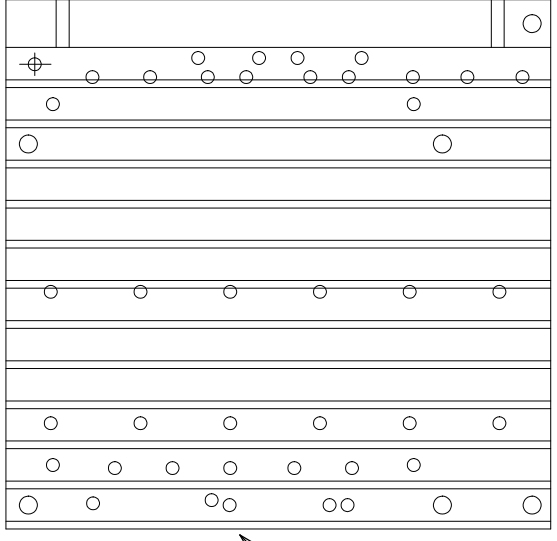
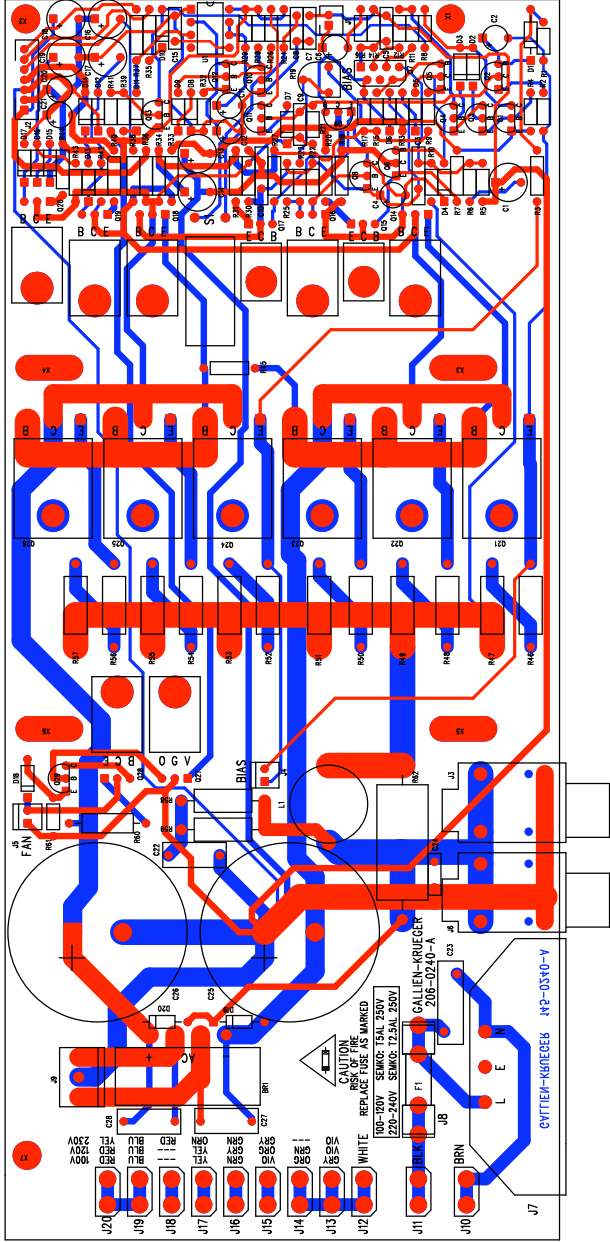
LOADING

5. SEE FORMING AND LOADING INSTRUCTIONS BELOW FOR INSTALLING SPECIFIED COMPONENTS.
 6. CHECK THAT R45-56 ARE FLUSH WITH PCB.
 7. CHECK THAT J3, 6, 7, & S1 ARE FLUSH WITH PCB.
 8. MAKE CERTAIN ALL POWER TRANSISTOR MOUNTING HOLES ARE PROPERLY ALIGNED FOR HEAT SINK.

MOUNT AS SHOWN WITH PART NUMBER SIDE DOWN AND HEAT TRANSFER SIDE UP AND FLUSH WITH EACH OTHER. MUST BE RAISED TO BE FLUSH WITH OTHER TRANSISTORS.

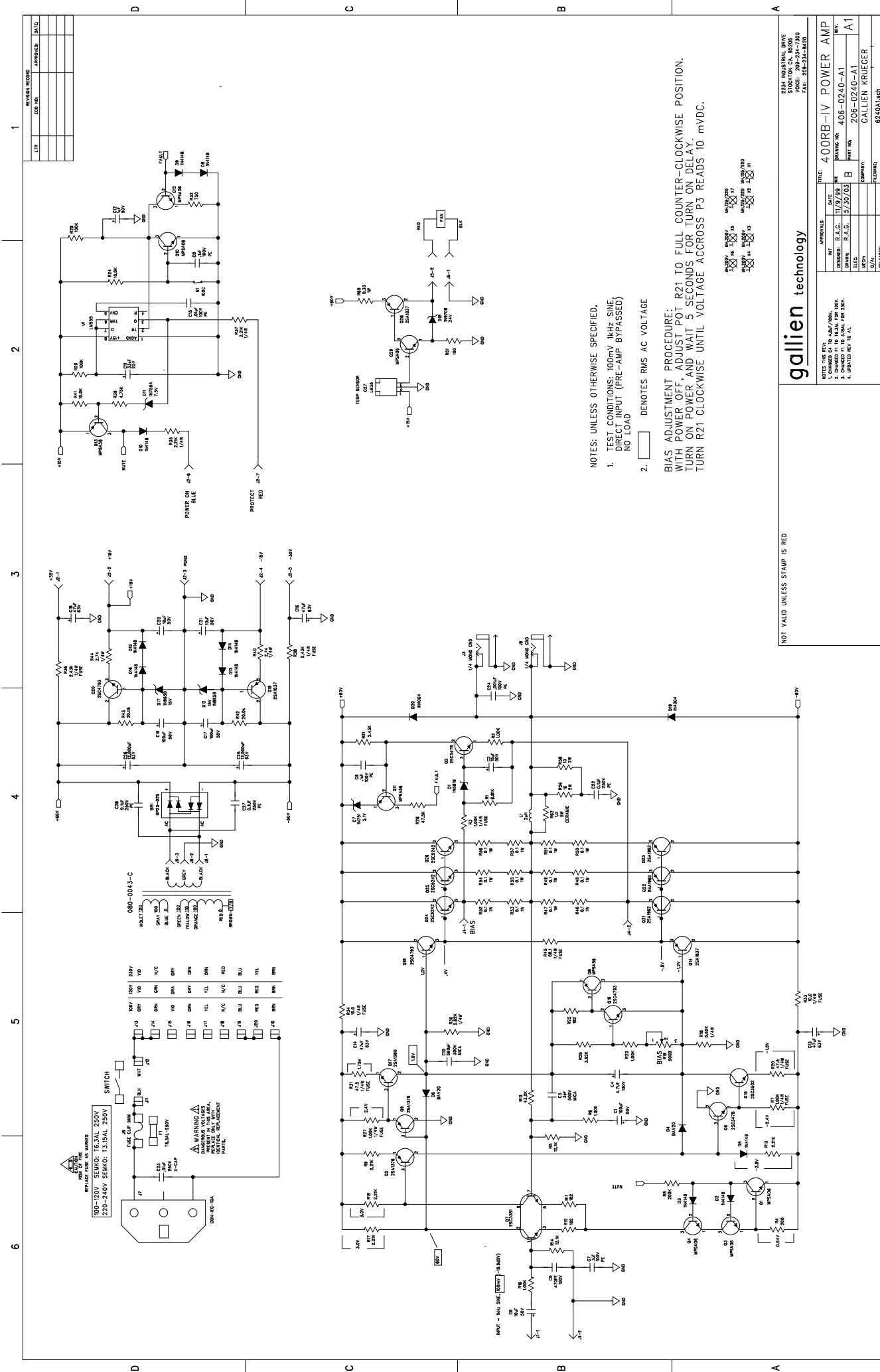


PLACE SMALL DROP OF WHITE SILICON GREASE TO ALL TRANSISTOR MOUNTING SURFACES BEFORE MOUNTING HEAT SINK.



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

NOT VALID UNLESS STAMP IS RED		gallien technology		2210 PARAGON DRIVE SAN JOSE CA, 95131 TEL: 408-441-8888 FAX: 408-441-8885	
APPROVALS	INIT	DATE	TITLE	SIZE	REV.
DESIGNED:	R.A.G.	6/25/02	400RB-IV POWER AMP	B	A
DRAWN:	R.A.G.	11/26/02			
ELEC:					
MECH:					
GERBER FILE NAME:	sst0126rpho				
LAYER DESCRIPTION:	TOP SIDE BOARDSCREEN				
	COMPANY:		GALLIEN-KRUEGER		
	FILENAME:		5240A.PCB		



REV.	DATE	BY	CHKD.	APPROVED:	DATE:

REV.	DATE	BY	CHKD.	APPROVED:	DATE:

REV.	DATE	BY	CHKD.	APPROVED:	DATE:

REV.	DATE	BY	CHKD.	APPROVED:	DATE:

REV.	DATE	BY	CHKD.	APPROVED:	DATE:

REV.	DATE	BY	CHKD.	APPROVED:	DATE:

REV.	DATE	BY	CHKD.	APPROVED:	DATE:

REV.	DATE	BY	CHKD.	APPROVED:	DATE:

REV.	DATE	BY	CHKD.	APPROVED:	DATE:

NOTES: UNLESS OTHERWISE SPECIFIED,
 1. TEST CONDITIONS: 100mV 1kHz SINE WAVE, DIRECT INPUT (PRE-AMP BYPASSED), NO LOAD
 2. DENOTES RMS AC VOLTAGE

BIAS ADJUSTMENT PROCEDURE:
 WITH POWER OFF, ADJUST POT R21 TO FULL COUNTER-CLOCKWISE POSITION.
 TURN ON POWER AND WAIT 5 SECONDS FOR TURN ON DELAY.
 TURN R21 CLOCKWISE UNTIL VOLTAGE ACROSS P3 READS 10 mVDC.

REVISED: 11/9/98
 REVISED: 5/30/03
 REVISED: 11/9/03

NOT VALID UNLESS STAMP IS RED

gallien technology 2326 INDUSTRIAL DRIVE WILSONVILLE, OR 97147 PHONE: 503-234-7300 FAX: 503-234-8550		REVISED:	DATE:	BY:	CHKD.:	APPROVED:
		REVISION:	DATE:	BY:	CHKD.:	APPROVED:
TITLE: 400RB-IV POWER AMP DRAWING NO: 406-0240-A1 PART NO: 206-0240-A1 COMPANY: GALLIEN KRUEGER RELEASED:		REVISION:	DATE:	BY:	CHKD.:	APPROVED:

PCB WORK INSTRUCTIONS
 DWG 420-0240-A1

NOTES:

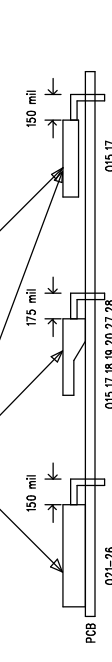
UNLESS OTHERWISE SPECIFIED:

1. SQUARE PADS ON PARTS DENOTE PIN 1.
2. ALL BOARDS REQUIRE A COMPLETE VISUAL INSPECTION.
3. ALL BOARDS MUST BE BARE BOARD TESTED.
4. ASSEMBLE AND SOLDER PER ANS/IPC-A-610B.

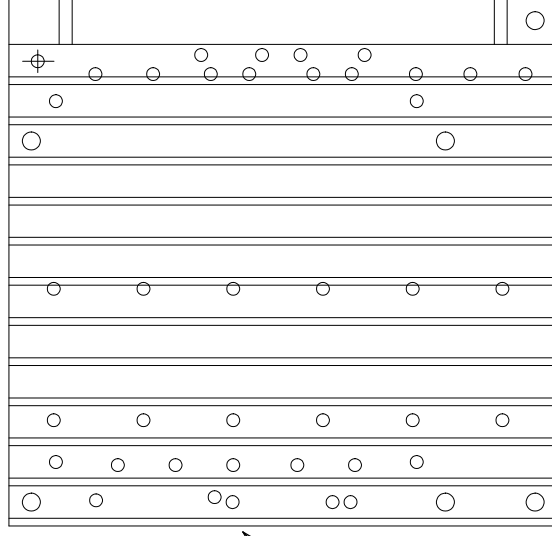
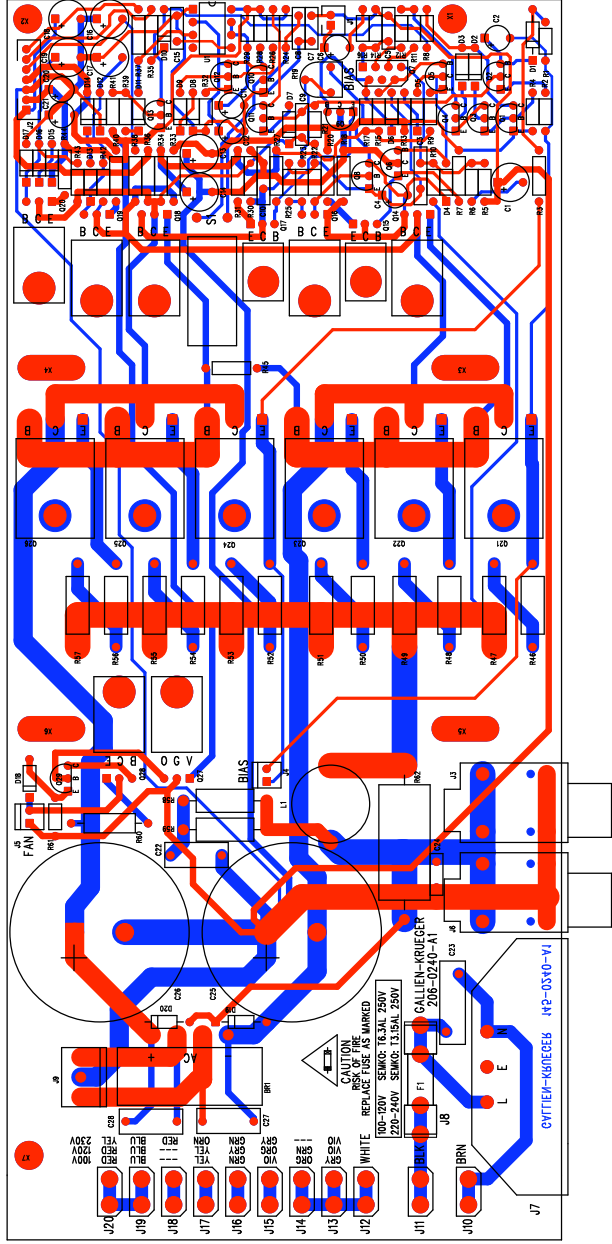
LOADING

5. SEE FORMING AND LOADING INSTRUCTIONS BELOW FOR INSTALLING SPECIFIED COMPONENTS.
6. CHECK THAT R45-56 ARE FLUSH WITH PCB.
7. CHECK THAT J3, 6, 7, & S1 ARE FLUSH WITH PCB.
8. MAKE CERTAIN ALL POWER TRANSISTOR MOUNTING HOLES ARE PROPERLY ALIGNED FOR HEAT SINK.

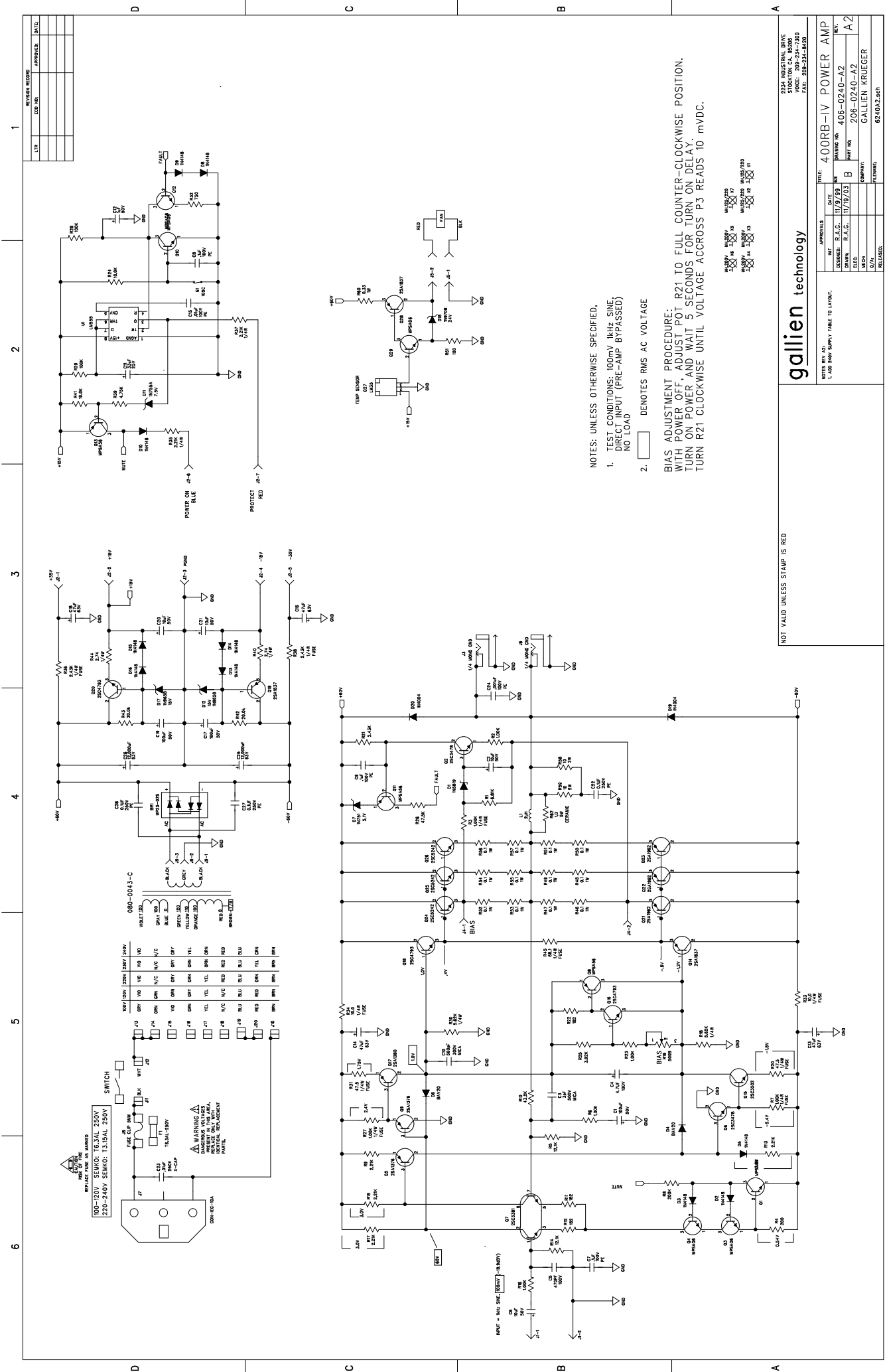
MOUNT AS SHOWN WITH PART NUMBER SIDE DOWN AND HEAT TRANSFER SIDE UP AND FLUSH WITH EACH OTHER. MUST BE RAISED TO BE FLUSH WITH OTHER TRANSISTORS.



PLACE SMALL DROP OF WHITE SILICON GREASE TO ALL TRANSISTOR MOUNTING SURFACES BEFORE MOUNTING HEAT SINK.



NOT VALID UNLESS STAMP IS RED		2210 PARAGON DRIVE SAN JOSE CA, 95131 TEL: 408-441-8888 FAX: 408-441-8885	
gallien technology		TITLE: 400RB-IV POWER AMP DRAWING NO: 405-0240-A1 PART NO: 145-0240-A1	
APPROVALS	DATE	SIZE	REV.
INIT	6/25/02	B	A1
DESIGNED: R.A.G.	6/25/02		
DRAWN: R.A.G.	6/02/03		
ELEC:			
MECH:			
GERBER FILE NAME: sst0126rpho	COMPANY: GALLIEN-KRUEGER	FILENAME: 5240A1.PCB	
LAYER DESCRIPTION: TOP SIDE BOARD GREEN			



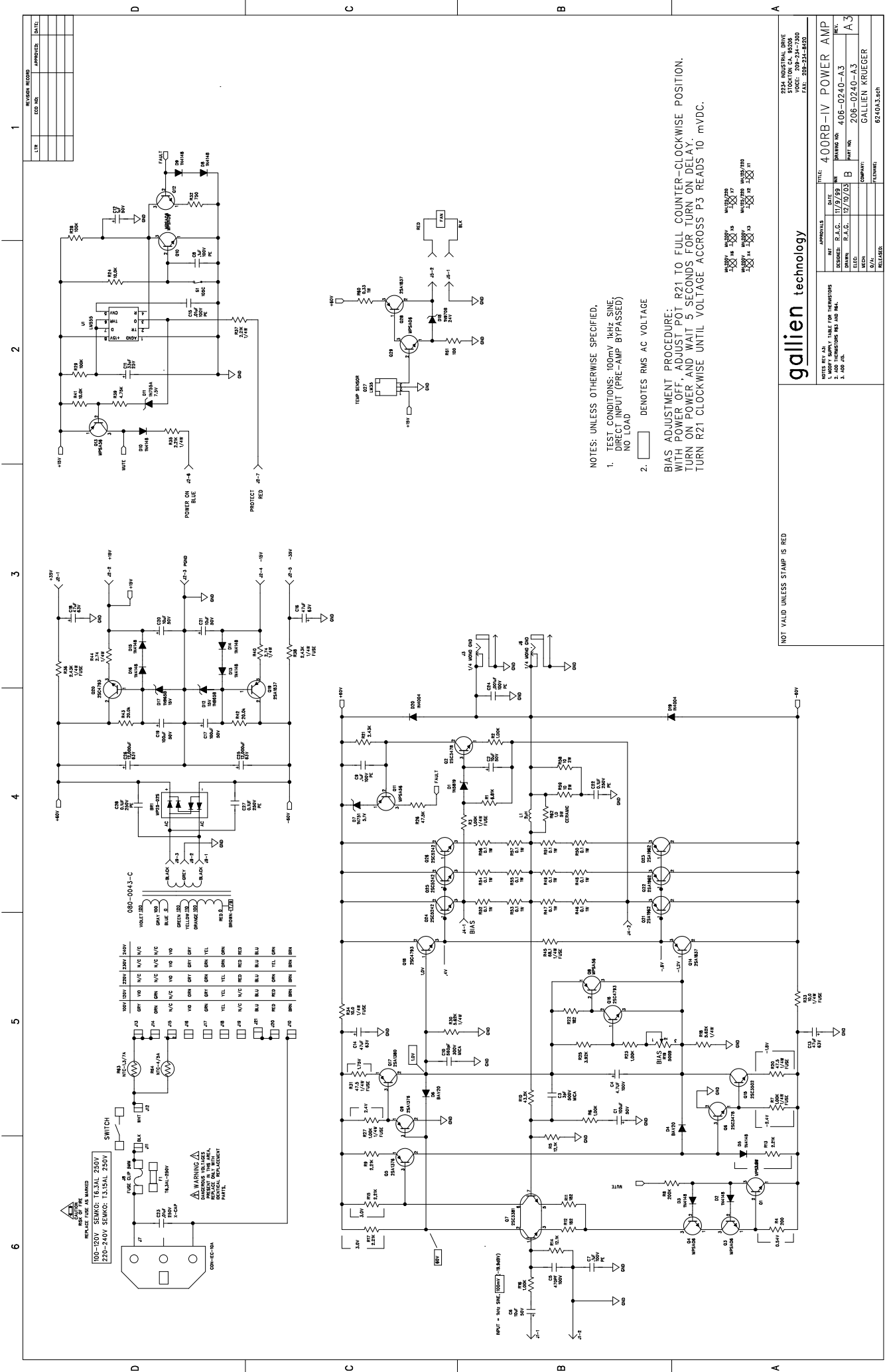
REVISION RECORD	
LT#	CD#
APPROVED:	DATE:

gallien technology	
REV. 1.1	TITLE: 400RB-IV POWER AMP
DESIGNED: R.A.C. 11/9/98	DRAWING NO: 406-0240-A2
DRAWN: R.A.C. 11/9/03	B PART NO: 206-0240-A2
REG. 0/AL	COMPANY: GALLIEN KRUEGER
RELEASED:	FUNCTION:

NOT VALID UNLESS STAMP IS RED

2326 INDUSTRIAL DRIVE
 10000 WOODBURY ROAD
 WOODBURY, NY 11797
 VOICE: 209-234-7500
 FAX: 209-234-8550

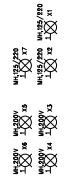
Customer Name:		Gallien-Krueger		Current Rev #:	A2	New ECO Rev #:	A3		
Model:		400RB-IV		Distribute To:		Page:	1	Of:	1
Assembly Description:		Power Amp		Originator: RAG					
Assembly Numbers:		206-0240-A 145-0240-A		Approved by:					
				Effective Date: 12/14/2003					
Effective				Document Update		Date		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 A2 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 checked="" type="checkbox"/>	Service Manual				
				<input type="checkbox"/>	Test Procedure				
				<input type="checkbox"/>					
				Other Affected Assemblies					
				290 Assemblies , 302 Assembly (Head)					
				303 Assemblies (Combo)					
<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-4R/5A.				<input checked="" type="checkbox"/>	Engineering				
For 100V-120V use NTC-1.3R/7A.				<input checked="" type="checkbox"/>	Incoming Q.C.				
				<input checked="" type="checkbox"/>	Production Eng.				
				<input checked="" type="checkbox"/>	Purchasing				
				<input type="checkbox"/>	Q.A.				
				<input type="checkbox"/>	Service				
				<input type="checkbox"/>	Test				
<input type="checkbox"/>	Continued on Supplement Page			<input type="checkbox"/>	Drawing(s) attached			<input type="checkbox"/>	
Part Number	Description	Parts Added		Parts Deleted					
		Qty	Ref. Designator	Qty	Ref. Designator				
022-3003-0	THR NTC-1.3R/7A	1	R63						
022-3006-0	THER NTC-4R/5A	1	R64						
092-0066-0	FASTON	1	J21						



REVISION RECORD	
LT#	DATE

NOTES: UNLESS OTHERWISE SPECIFIED,
 1. TEST CONDITIONS: 100mV 1kHz SINE DIRECT INPUT (PRE-AMP BYPASSED) NO LOAD
 2. DENOTES RMS AC VOLTAGE

BIAS ADJUSTMENT PROCEDURE:
 WITH POWER OFF, ADJUST POT R21 TO FULL COUNTER-CLOCKWISE POSITION.
 TURN ON POWER AND WAIT 5 SECONDS FOR TURN ON DELAY.
 TURN R21 CLOCKWISE UNTIL VOLTAGE ACROSS P3 READS 10 mVDC.



NOT VALID UNLESS STAMP IS RED

gallien technology

REVISED BY	DATE	REV.	TITLE
			400RB-IV POWER AMP
DESIGNED BY	DATE	REV.	DRAWING NO.
			406-0240-A3
DRAWN BY	DATE	REV.	PART NO.
			206-0240-A3
			COMPANY
			GALLIEN KRUEGER
			RELEASED

2326 INDUSTRIAL DRIVE
 10000 WASHINGTON BLVD
 WOODBRIDGE, VA 22191
 VOICE: 703-234-7300
 FAX: 703-234-8550

Customer Name:		Gallien-Krueger		Current Rev #:	A3	New ECO Rev #:	A4
Model:		400RB-IV		Distribute To:		Page:	1 Of: 1
Assembly Description:		Power Amp		Originator:	Enrique Hernandez		
Assembly Numbers:		206-0240-A 145-0240-A		Approved by:			
				Effective Date:	8/10/2005		
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 checked="" 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		RAG
Beginning Serial Number:				<input checked="" type="checkbox"/>	BOM		Noli
Reason For Change				<input type="checkbox"/>	Control Form		
1. Q7(2SC3381) on power amp is obsolete, replace with two 2SC2240BL.				<input checked="" type="checkbox"/>	Costing		TC
2. Remove R5, change values of R14 to 43.2K and C6 to 1uF, 50V. This is to decrease offset DC voltage from 45mVdc to 10mVdc.				<input checked="" type="checkbox"/>	Fab Drawing		
				<input type="checkbox"/>	Inspection Proc.		
				<input checked="" type="checkbox"/>	Part Master File		Noli
				<input checked="" type="checkbox"/>	Schematic		Noli
				<input type="checkbox"/>	Service Manual		
				<input type="checkbox"/>	Test Procedure		
				<input type="checkbox"/>			
Other Affected Assemblies							
				290 Assemblies , 302 Assembly (Head)			
				303 Assemblies (Combo)			
<input type="checkbox"/>	Continued on ECO Supplement Page						
Description Of Change				Distribution	Date	Initials	
Update Schematic				<input type="checkbox"/>	Accounting		
				<input type="checkbox"/>	Assembly		
Update PCB board part number to 145-0240-A4				<input checked="" type="checkbox"/>	Engineering		
				<input checked="" type="checkbox"/>	Incoming Q.C.		
Update Part Master File.				<input checked="" type="checkbox"/>	Production Eng.		
				<input checked="" type="checkbox"/>	Purchasing		
Update BOM				<input type="checkbox"/>	Q.A.		
				<input type="checkbox"/>	Service		
				<input type="checkbox"/>	Test		
<input type="checkbox"/>	Continued on Supplement Page		<input type="checkbox"/>	Drawing(s) attached			
Part Number	Description	Parts Added		Parts Deleted			
		Qty	Ref. Designator	Qty	Ref. Designator		
010-0000-0	2SC3381BL			1	Q7		
010-0010-0	2SC2240BL	2	Q7, Q7A				
060-1213-0	12.1k RES, 1/8W			2	R5, R14		
060-4323-0	43.2k RES, 1/8W	1	R14				
031-2106-0	CAP 10uF, 50V			1	C6		

GALLIEN-KRUEGER

400RB-IV Power Amp

Part No.	Reference	Description	Manufacturer	Mfr. Part No.
001-2060-0	U1	LM555, TIMER	NATIONAL	LM555CN
010-0000-0	Q7	2SC3381BL,NPNX2,80V,100MA,2-10M1B	TOSHIBA	2SC3281BL
010-0001-0	Q2 Q6	2SC3478, NPN,180V,100MA,TO-92	NEC	2SC3478-K
010-0003-0	Q15	2SC3502-F,NPN,200V,100MA,TO-126	TOSHIBA	2SC3502
010-0012-0	Q1 Q3-4 Q10 Q12 Q29	MPSAO6, NPN,80V,500MA,TO-92	MOTOROLA	MPS-A06
010-0035-0	Q27	LM35DT, TEMPERATURE SENSOR, TO-220	NATIONAL	LM35DT
010-1002-0	Q5 Q9	2SA1376, PNP,180V,100MA,TO-92	NEC	2SA1376-K
010-1003-0	Q17	2SA1380-F,PNP,200V,100MA,TO-126	SANYO/TOSHIBA	2SA1380-F/E
010-1013-0	Q8 Q11 Q13	MPSA56 PNP 80V 500MA TO-92	MOTOROLA	MPS-A56
012-0002-0	Q16 Q18 Q20	2SC4793,NPN,200V,1.5A,2-10R1A	TOSHIBA	2SC4793
012-0003-0	Q24-26	2SC5242,NPN,230V,15A,2-16C1A	TOSHIBA	2SC5242-O
012-1002-0	Q14 Q19 Q28	2SA1837,PNP,200V,1.5A,2-10R1A	TOSHIBA	2SA1837
012-1003-0	Q21-23	2SA1962,PNP,230V,15A,2-16C1A	TOSHIBA	2SA1962
020-0004-0	D11	1N755A, ZENER,7.5V,500MW ,D035	TAITRON	1N755A
020-0050-0	D7	1N751, ZENER,5.1V,10%,400MW,DO-35	NATIONAL	1N751
020-0150-0	D12 D17	1N965B, ZENER, 15V, 5%, 500mW, DO-35	TAITRON	1N965B
020-0240-0	D18	1N970B, ZENER, 24V, 5%, 500MW, DO-35	TAITRON	1N970B
020-1000-0	D2-3 D5 D8-10 D13-16	1N4148, RECT-FAST, 200MA, 100V	MOTOROLA	1N4148
020-1022-0	D4 D6	BAV20, RECT, 200V, DO-35	NATIONAL	BAV20
020-1104-0	D1	SHOTTKY, 1A, 40V, 10NS, DO-41	MOTOROLA	1N5819
020-2106-0	D19-20	1N4004,RECT,1A,400V,DO-41	TAITRON	1N4004
023-0112-0	BR1	BRIDGE, 25A, 200V, VERT, PC, MO25S-02	CHENG-YI	MP25-02S
031-1336-0	C11	CAP,ELEC,RAD,336,20%,25V	UNITED CHEMI-CON	SRG25VB33FRM5X7LL
031-2105-0	C12	CAP,ELEC,RAD, 105, 20%, 50V	UNITED CHEMI-CON	C440C105M5U5CA
031-2106-0	C2,6,20,21	CAP,ELEC,RAD, 106, 20%, 50V	UNITED CHEMI-CON	SMG50VB10RM5X11LL
031-2107-0	C1 C17 C19	CAP,ELEC,RAD,107, 20%, 50V	UNITED CHEMI-CON	SMG50VB101M8X11LL
031-3129-0	C25-26	CAP, ELEC, RAD, 129, 20%, 63V	UNITED CHEMI-CON	SMH63VN123M35X45T2
031-3476-0	C13-14 C16 C18	CAP,ELEC,RAD,476,20%,63V	UNITED CHEMI-CON	SMG63VB47RM6X11LL
031-4475-0	C4	CAP,ELEC,RAD, 475, 20%, 100V	UNITED CHEMI-CON	SMG100VB47R7M5X11LL
032-4102-0	C24	CAP,PE,102,5%,100V,	PANASONIC	ECQB1102JF
032-4103-0	C15	CAP,PE,103,5%,100V,	PANASONIC	ECQV1103JM
032-4104-0	C7-9	CAP,PE,104,5%,100V,	PANASONIC	ECQV1104JM
032-7104-0	C22 C27-28	CAP,PE,104,10%, 250V	ILLINOIS CAPACITOR	104MSR250K
034-4471-0	C5	CAP,MCR,470pF,5%,100V,	TAITRON	TMRS471J100NPOB
034-7103-0	C23	CAP, CERMIC DISK, 103, 10%, X-250V	PANASONIC	ECK-DRS103ZV
035-8030-0	C3	CAP MICA AXIAL , 3pF, 10%, 500V	CORNELL	CD10CD030D03
035-8561-0	C10	CAP MICA RADIAL, 561, 5%, 300V	CORNELL	CD15FC561J103
052-2.74-0	R40 R44	RES,METAL FILM, 2.74, 1/4W, 1%	ECI	M2F1AJ002.74
052-2212-0	R35 R37	RES,METAL FILM,2.21k,1/4W,1%	ECI	M2F1AK002.21
052-5622-0	R18 R30	RES,METAL FILM,5.62K,1/4W,1%	ECI	M5F1AK005.62
054.100-0	R46-57	RES, METAL OXIDE, 0.1 Ohm, 1W, 5%	ECI	MO10J3AJ000.10
054.330-0	R60	RES, METAL OXIDE, 0.33 OHM, 1W, 5%	ECI	MO10J3AJ000.33
055-0101-0	R58-59	RES, METAL OXIDE, 10 OHM, 2W, 5%	ECI	MOM20J3AJ010.00
056-0100-0	R62	RES, CERAMIC WW, 1.0 OHM, 5W, 10%	ECI	VWC50J3AJ001.00
059-1000-0	R33-34	RES,MF,FUSE,10.0 OHM, 1/4W,1%	JUKN.OHM	FR25-10.0
059-1002-0	R3 R7 R27	RES,MF,FUSE,1.00K,1/4W,1%	JUKN.OHM	FR25-1.00K
059-2432-0	R36 R38	RES,MF,FUSE,2.43K, 1/4W,1%	JUKN.OHM	FR25-2.43K
059-4750-0	R20 R31	RES,MF,FUSE,47.5 OHM, 1/4W,1%	JUKN.OHM	FR25-47.5
059-6810-0	R45	RES,MF,FUSE,68.1 OHM, 1/4W,1%	JUKN.OHM	FR25-68.1
060-1001-0	R61	RES, METAL FILM, 100 OHM, 1/8W, 1%	ECI	M1F1AJ100.00
060-1002-0	R2 R6 R16 R23	RES,METAL FILM, 1.00K, 1/8W, 1%	ECI	M1F1AK001.00
060-1003-0	R24 R41	RES,METAL FILM, 10.0K, 1/8W,1%	ECI	M1F1AK010.00
060-1004-0	R28-29	RES,METAL FILM, 100K, 1/8W, 1%	ECI	M1F1AK100.00
060-1213-0	R5 R14	RES,METAL FILM, 12.1K OHM, 1/8W, 1%	ECI	M1F1AK012.10
060-1821-0	R11-12 R22	RES,METAL FILM, 182, 1/8W, 1%	ECI	M1F1AJ182.00
060-2001-0	R4	RES,METAL FILM, 200, 1/8W, 1%	ECI	M1F1AJ200.00
060-2003-0	R42-43	RES,METAL FILM, 20.0K, 1/8W, 1%	ECI	M1F1AK020.00
060-2004-0	R8	RES,METAL FILM, 200K, 1/8W, 1%	ECI	M1F1AK200.00
060-2212-0	R9 R13 R15 R17	RES,METAL FILM, 2.21K, 1/8W, 1%	ECI	M1F1AK002.21
060-2432-0	R21	RES,METAL FILM, 2.43K, 1/8W, 1%	ECI	M1F1AK002.43
060-3922-0	R25	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
060-4752-0	R39	RES,METAL FILM, 4.75K, 1/8W, 1%	ECI	M1F1AK004.75
060-4753-0	R26	RES,METAL FILM, 47.5K, 1/8W, 1%	ECI	M1F1AK047.50
060-6812-0	R1	RES,METAL FILM, 6.81K, 1/8W, 1%	ECI	M1F1AK006.81
060-7501-0	R32	RES,METAL FILM, 750 OHM, 1/8W, 1%	ECI	M1F1AJ750.00

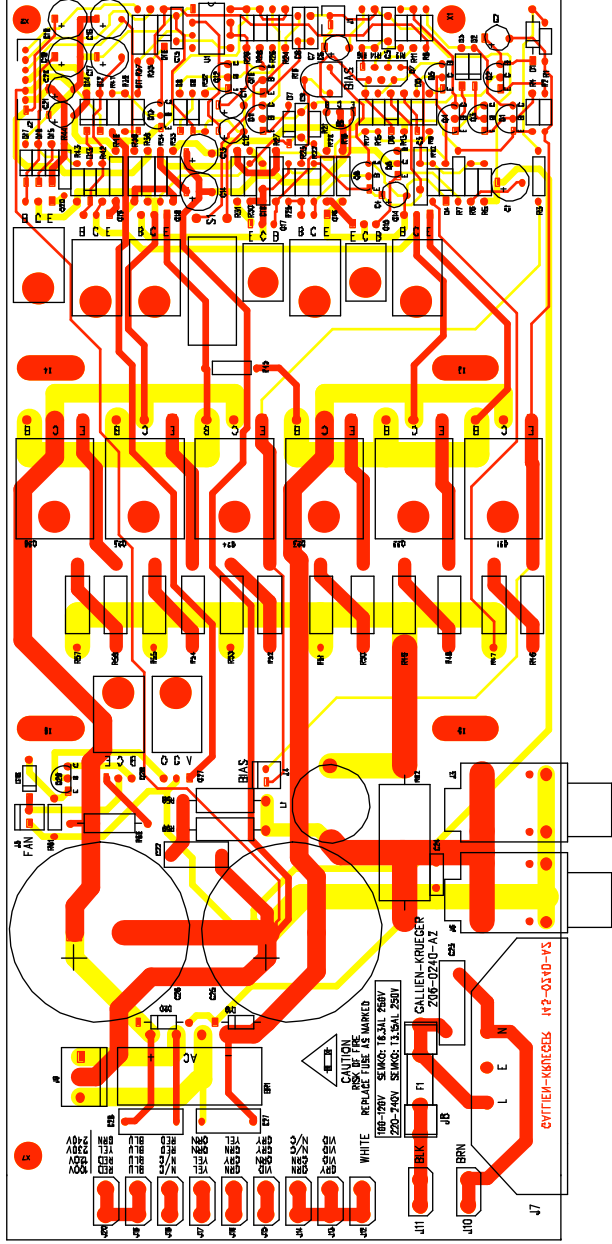
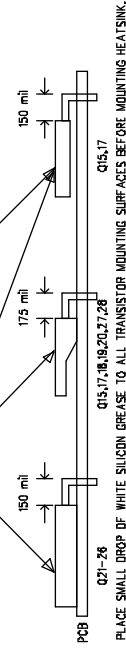
PCB WORK INSTRUCTIONS
 DWG 420-0240-A2

NOTES:

- UNLESS OTHERWISE SPECIFIED:
 1. SQUARE PADS ON PARTS DENOTE PIN 1.
 2. ALL BOARDS REQUIRE A COMPLETE VISUAL INSPECTION.
 3. ALL BOARDS MUST BE BARE BOARD TESTED.
 4. ASSEMBLE AND SOLDER PER ANS/IPC-A-610B.

LOADINGS

5. SEE FORMING AND LOADING INSTRUCTIONS BELOW FOR INSTALLING SPECIFIED COMPONENTS.
 6. CHECK THAT R45-56 ARE FLUSH WITH PCB.
 7. CHECK THAT J3, 6, 7, & S1 ARE FLUSH WITH PCB.
 8. MAKE CERTAIN ALL POWER TRANSISTOR MOUNTING HOLES ARE PROPERLY ALIGNED FOR HEAT SINK.
 MOUNT AS SHOWN WITH PART NUMBER SIDE DOWN AND HEAT TRANSFER SIDE UP AND FLUSH WITH EACH OTHER - MUST BE RAISED TO BE FLUSH WITH OTHER TRANSISTORS.



This document is generated to address fuse failure due to excessive inrush current during turn on. It is applicable to 400RB-IV power amp boards with part number 206-0240-A1. To correct the problem, a thermistor with part number 022-3006-0 is soldered in series with the primary side of the transformer.

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

STEP I:

If the unit is a head version of 400RB-IV, remove the top cover then remove the power amp board from the chassis assembly.
 If the unit is a combo version of 400RB-IV, remove the chassis assembly from the cabinet, then remove the power amp board. Please see figure 1.



Chassis Assembly
figure 1

STEP II:

Locate J13 and J12 on the power amp board (figure 2a). Turn the power amp board over as per figure 2b.

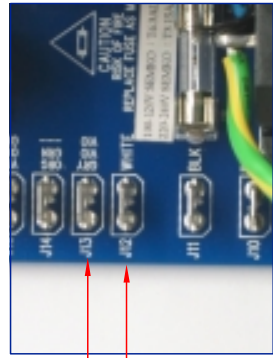
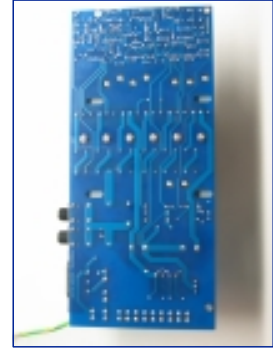


figure 2a



Power Amp Board
figure 2b

STEP III:

Locate J12 and J13 on the bottom/solder side of the board (figure 3a). Cut the trace between J12 and J13 as shown in figure 3b.

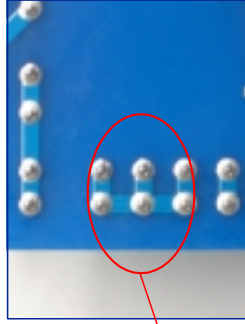


figure 3a

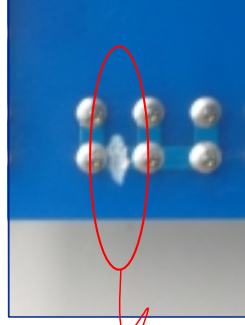


figure 3b

location of J12 and J13 on the bottom/solder side of the board

cut the trace here

STEP IV:

Solder one lead of Thermistor (022-3006-0) to J12 and the other to J14 on the bottom/solder side of the 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 J12 and J14.

Thermistor NTC 4 ohms, 5 amperes
 P.N: 022-3006-0
 for 400RB-IV power amp board

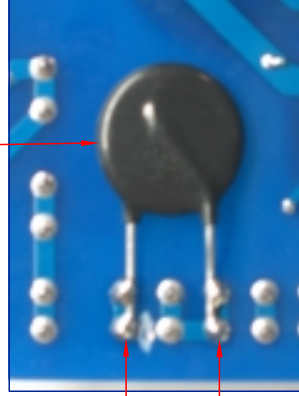


figure 4

Location of J13
 Location of J12

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