

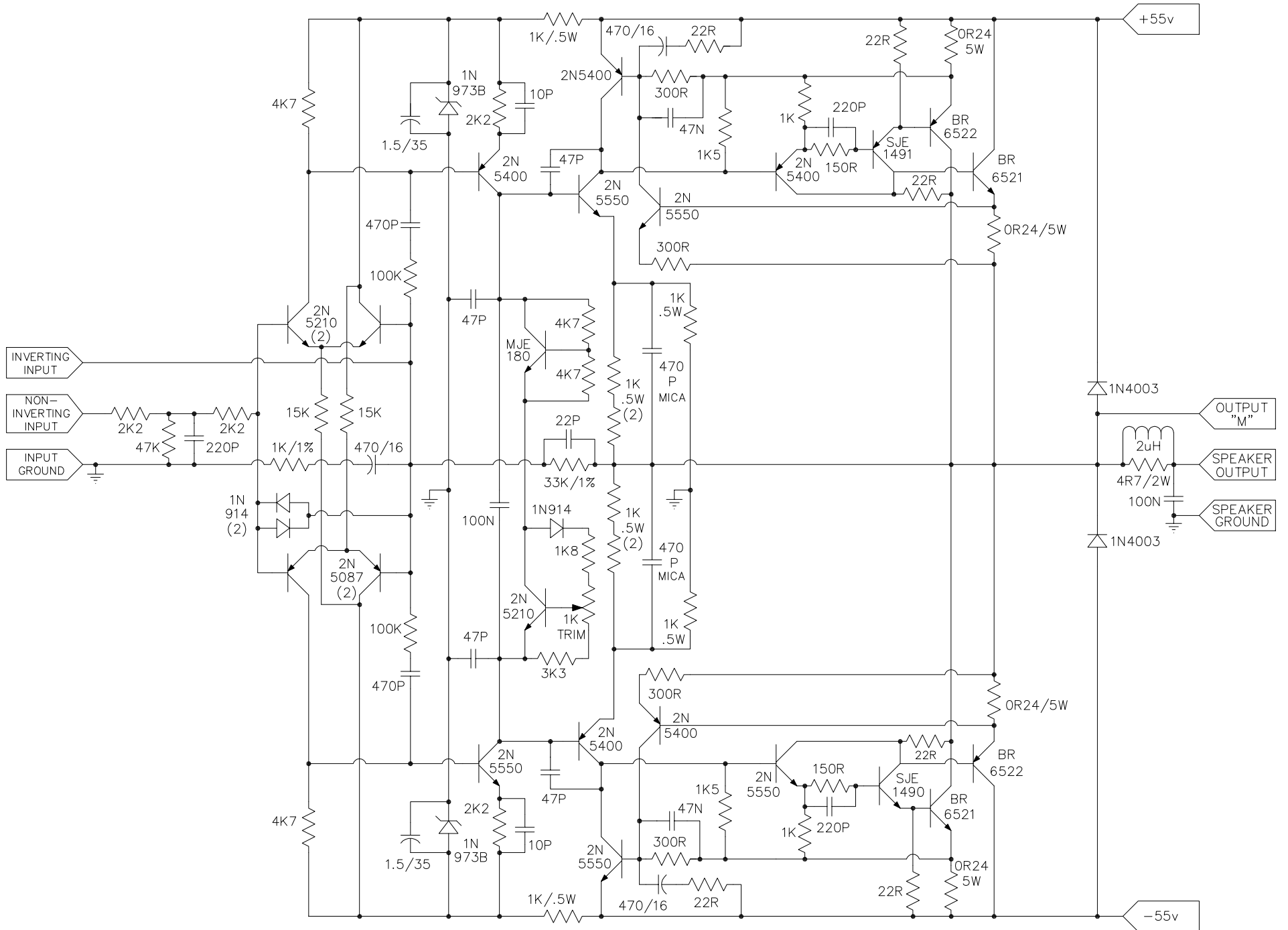
The logo for Bryston, featuring the word "BRYSTON" in a stylized, outlined font. The letter "B" is significantly larger and more prominent than the other letters. The logo is set against a solid black rectangular background.

BRYSTON

**POWER AMPLIFIER
SCHEMATICS
for models 3B~8B**

TABLE OF CONTENTS

PAGE	TITLE	DATE	SOURCE FILE	PDF FILE
3	3B Power Amplifier Main Board (3B-III) Schematic	Jan 1987	3B3Schem.dwg	3B3Schem(Ja87)
4	3B Power Amplifier Main Board (3B-IV) Schematic	Oct 1987	3B3Schem.dwg	3B3Schem(Oc87)
5	3B/4B Power Amplifier Schematic, Rev 6	Jan 1987	4BSCHEM.dwg	4BSCHEM(JA87)
6	3B/4B Channel Boards Hookup, Pg.1	Mar 1987	3-4BHkUp.dwg	3-4BHkUp(Pg1)
7	3B/4B Channel Boards Hookup, Pg.2	Mar 1987	3-4BHkUp.dwg	3-4BHkUp(Pg2)
8	3B/4B Power Amplifier Main Board (3B-IV) Schematic, Rev 8	Jan 1988	4B4Schem.dwg	4B4Schem(JA88)
9	3B/4B Back Board and Power Supply Schematic, Rev 3	Jul 1987	3-4BBS.dwg	3-4BBS(Ju87)
10	3B/4B Back Board and Power Supply Schematic, Rev 4	May 1991	4B-BBS.dwg	4B-BB-S(Ma91)
11	4Be (4B-NRB/NPB) Overall Schematic, Rev 0.2	Oct 1991	4Be-OS.dwg	4Be-OS
12	3B/4B Power Amplifier Main Board (7B-MB/2) Schematic	Jun 1992	4B-MB-S.dwg	4B-MB-S
13	3Be Power Amplifier Main Board (7B-MB/2.51) Schematic	May 1994	3Be-MBS.dwg	3Be-MBS(Ma94)
14	4Be (4B-NRB/NPB) Main Board Schematic, Rev 1.0	May 1994	4B-MBS.dwg	4BE-MBS
15	7B Mono Power Amplifier Main Board (7B-MB/2.51) Schematic	May 1994	7B-MBS.dwg	7B-MBS(MA94)
16	4B-st Overall Schematic, Rev 10.5	Sep 1996	4BSCH106.dwg	4B-Overall-Schematic-10_6
17	Power Amplifier Main board (PWR-MB/3.0a) Schematic, Rev 3.0	APR 1997	PWR-MB3S.dwg	3B~8B-Channel-Schematic3_0
18	Power Amplifier Main board (PWR-MB/3.0a) Schematic, Rev 3.1	Nov 1996	PWR-MB-S.dwg	3B~8B-Channel-Schematic3_1
19	5B & 8B Overall Schematic, Rev 2.4	Dec 1996	8BSCH24.dwg	5B+8B-Overall-Schematic
20	3B-st Overall Schematic, Rev 5.0	Jan 1997	3BSCH5.dwg	3B-ST-Overall Schematic
21	4B Input Schematic, Rev 5.1	May 1997	4BINPUTSCH.dwg	4B-Input-Schematic
22	7B-st Overall Schematic, Rev 10.5	Dec 1998	7BSCH3.dwg	7B-Overall-Schematic
23	Remote Power Trigger Schematic, Rev 3a	Mar 2000	STREMSCH3A.dwg	3B~8B-Rem-Trig-Schematic
24	4B Main Board Schematic for PWR-MB, Rev 0.0	Apr 2000	PWR-MB7.dwg	4B-Channel-Schematic7
25	7B Channel Assembly Schematic, Rev 7.0	May 2000	PWRSCH7B.dwg	7B-Channel-Schematic



ALL RESISTORS ARE 1/4 WATT
EXCEPT WHERE NOTED.

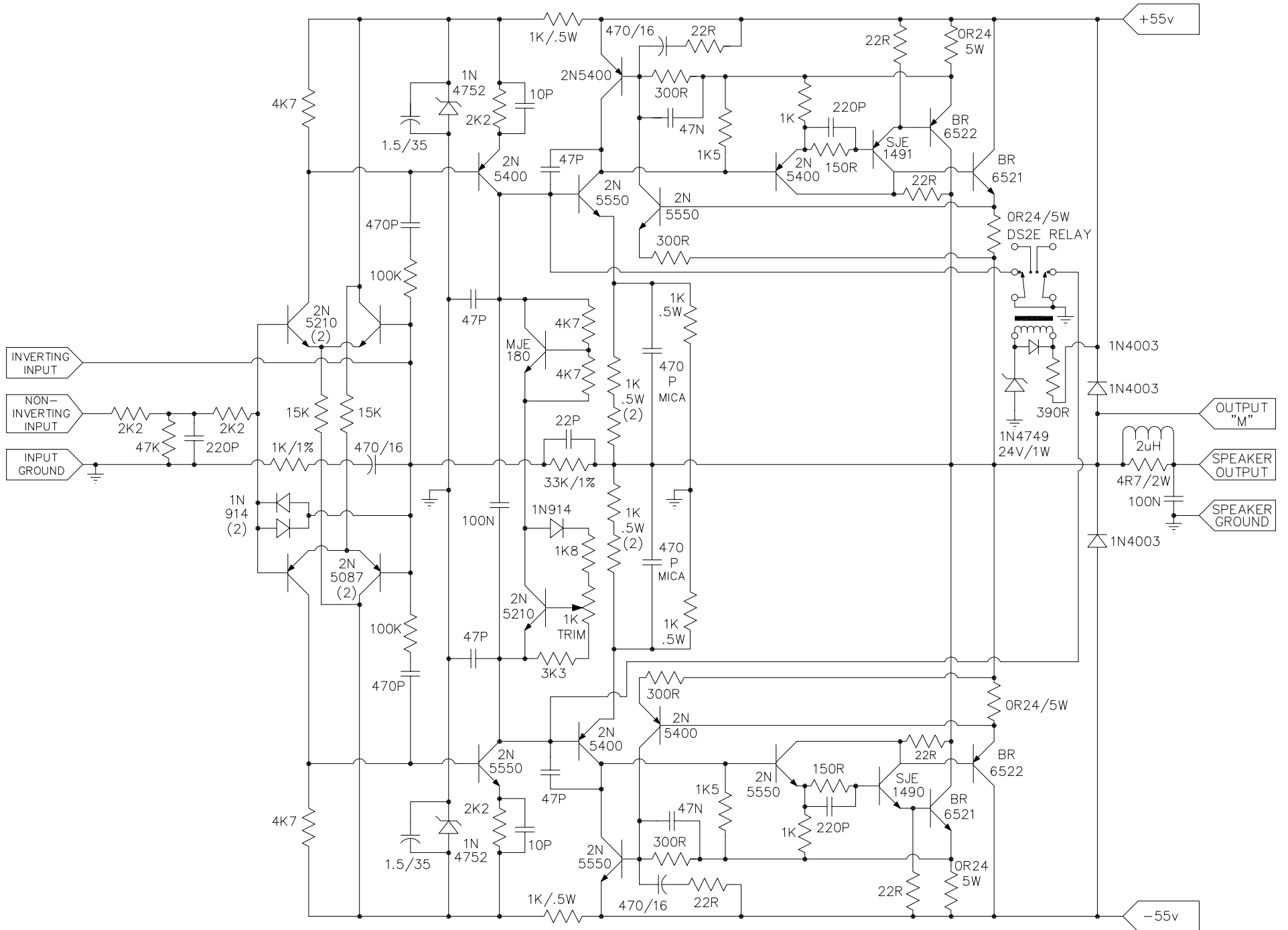


3B POWER AMPLIFIER MAIN BOARD (3B III) SCHEMATIC

REVISION #6 13 JAN 87

DWG:

DESIGN:



ALL RESISTORS ARE 1/4 WATT
EXCEPT WHERE NOTED.

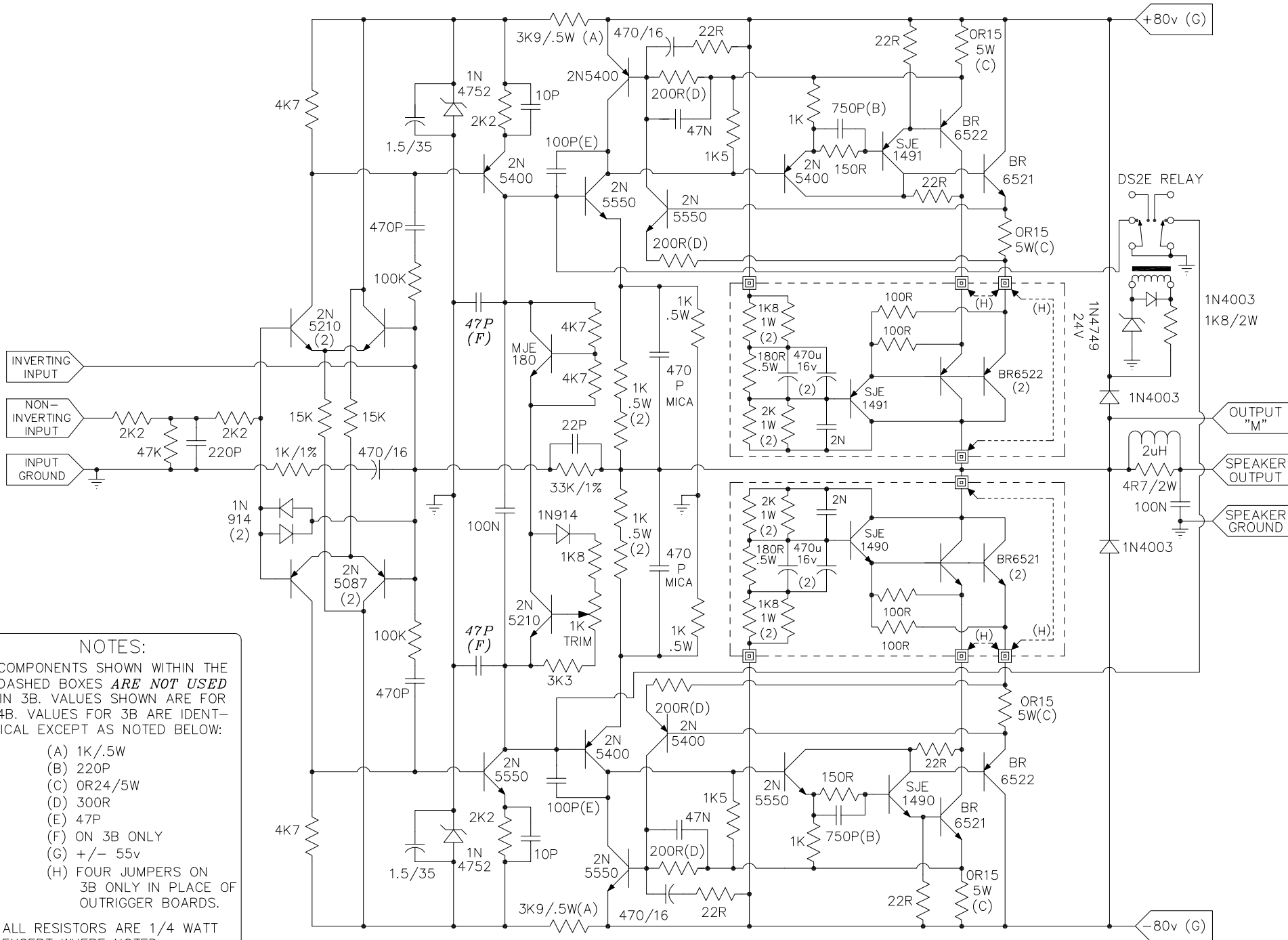


3B POWER AMPLIFIER MAIN BOARD (3B IV) SCHEMATIC

REVISION #8 20 OCT 87

DWG:

DESIGN:



NOTES:
 COMPONENTS SHOWN WITHIN THE DASHED BOXES **ARE NOT USED** IN 3B. VALUES SHOWN ARE FOR 4B. VALUES FOR 3B ARE IDENTICAL EXCEPT AS NOTED BELOW:

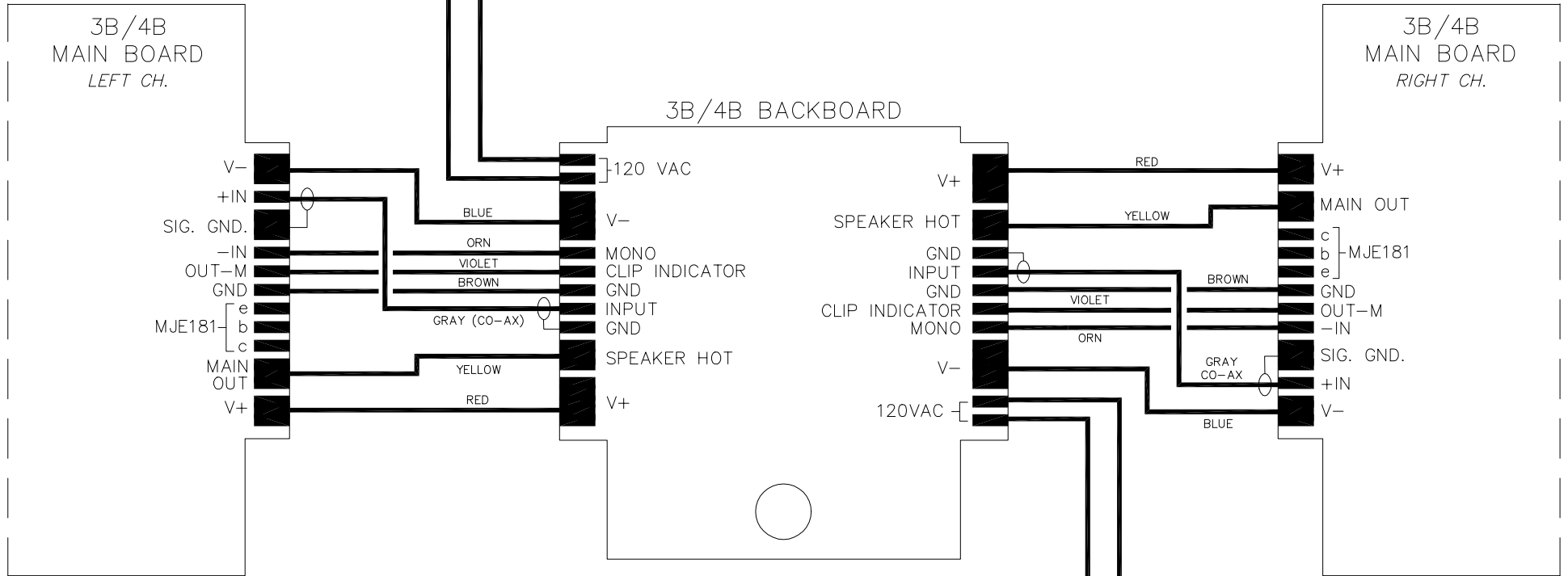
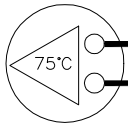
- (A) 1K/.5W
- (B) 220P
- (C) OR24/5W
- (D) 300R
- (E) 47P
- (F) ON 3B ONLY
- (G) +/- 55v
- (H) FOUR JUMPERS ON 3B ONLY IN PLACE OF OUTRIGGER BOARDS.

ALL RESISTORS ARE 1/4 WATT EXCEPT WHERE NOTED.

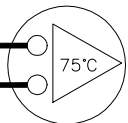
☐ SYMBOL SHOWS CONNECTIONS TO OUTRIGGER PC BOARDS



THERMAL BREAKER
mounted on heatsink



THERMAL BREAKER
mounted on heatsink



ALL BOARDS VIEWED FROM COMPONENT SIDE
MJE181 POWER TRANSISTOR (T0-126) MOUNTS BENEATH MAIN BOARD
INTO HEATSINK.



3B/4B REGULAR POWER AMPLIFIER
BACKBOARD TO MAIN BOARD HOOKUP



12 MARCH 87



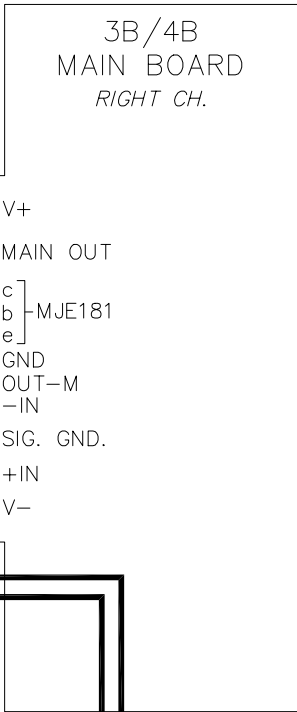
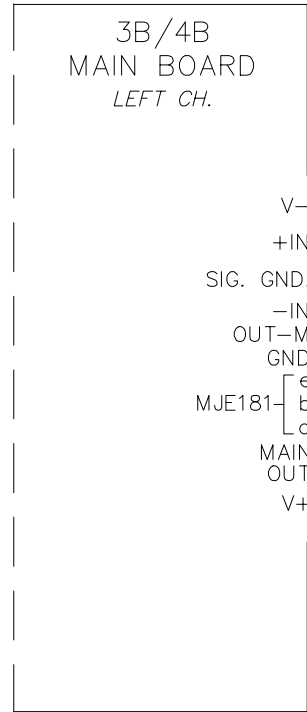
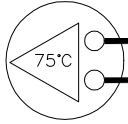
BRYSTON

3B/4B PRO POWER AMPLIFIER BACKBOARD TO MAIN BOARD HOOKUP

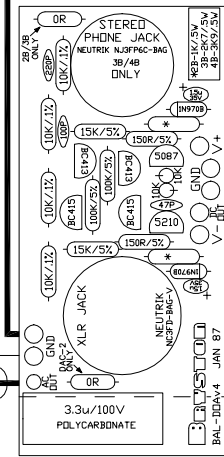
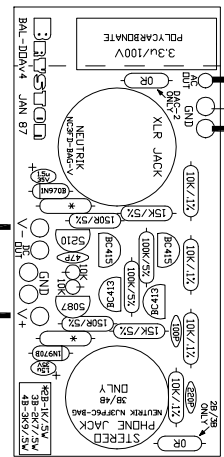


20 MARCH 87

THERMAL BREAKER
mounted on heatsink



3B/4B BACKBOARD

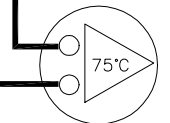


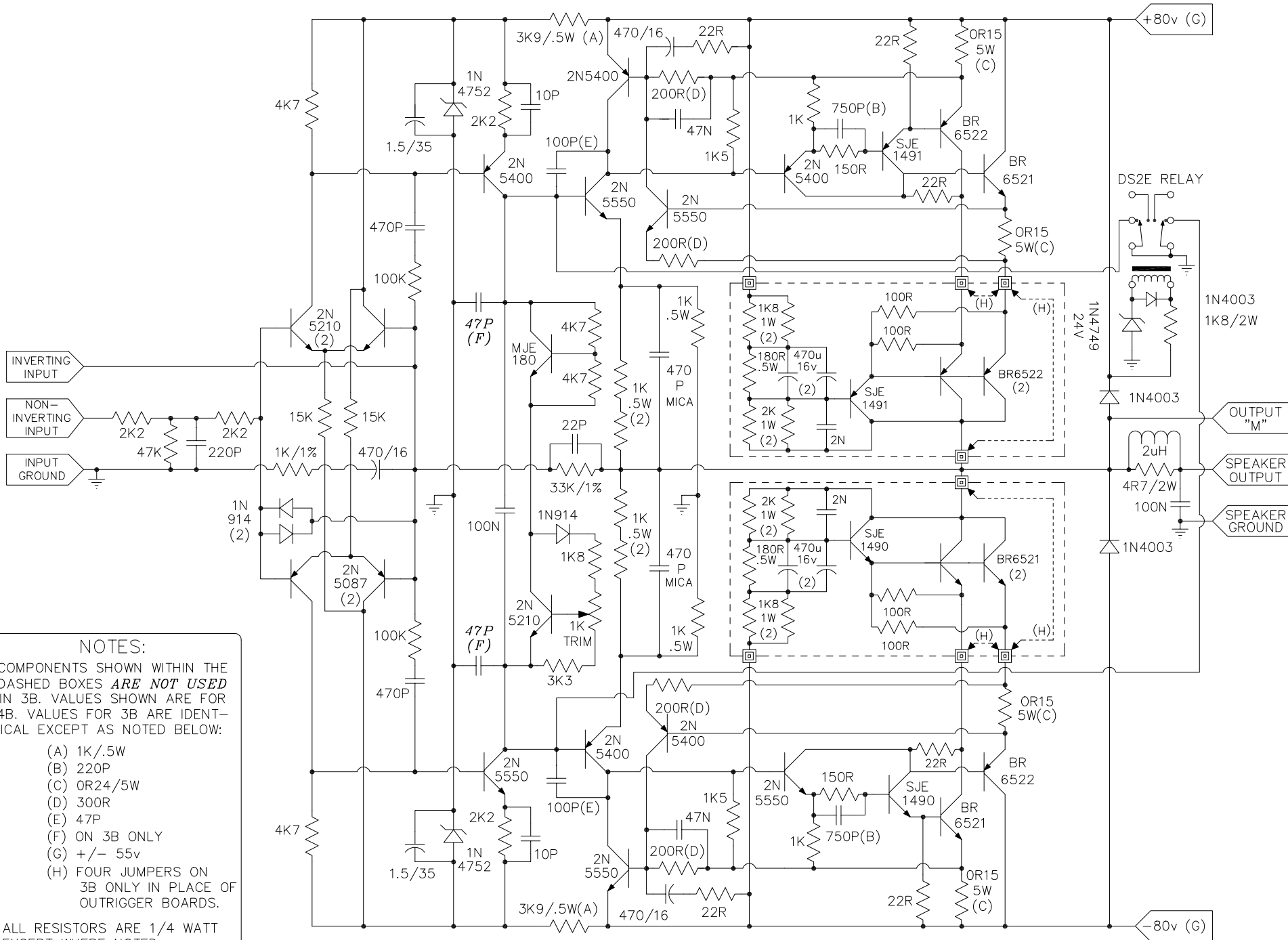
ALL BOARDS VIEWED FROM COMPONENT SIDE
MJE181 POWER TRANSISTOR (TO-126) MOUNTS
BENEATH MAIN BOARD INTO HEATSINK.

BALANCED
INPUT BOARD
LEFT CHANNEL

BALANCED
INPUT BOARD
RIGHT CHANNEL

THERMAL BREAKER
mounted on heatsink





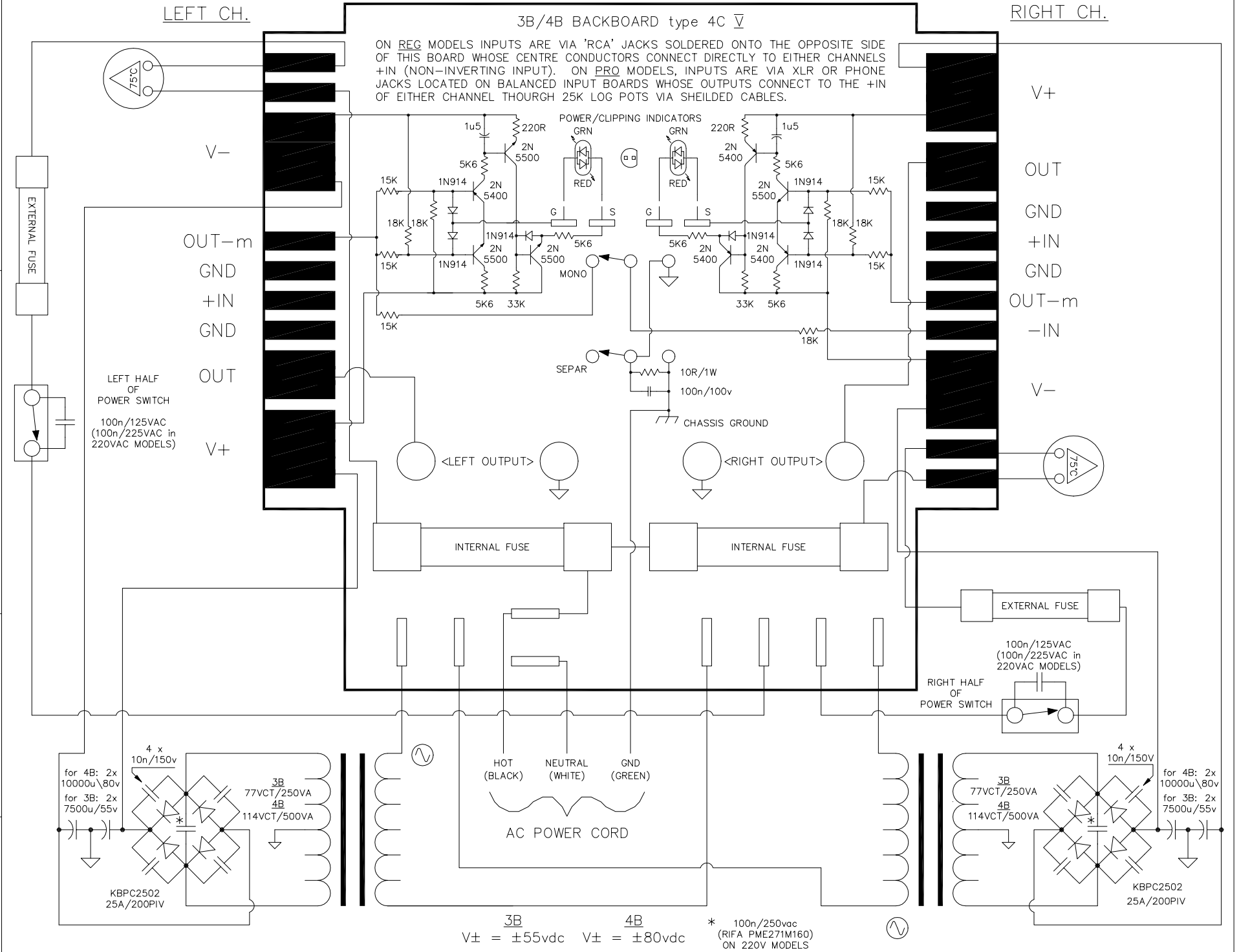
NOTES:
 COMPONENTS SHOWN WITHIN THE DASHED BOXES **ARE NOT USED** IN 3B. VALUES SHOWN ARE FOR 4B. VALUES FOR 3B ARE IDENTICAL EXCEPT AS NOTED BELOW:

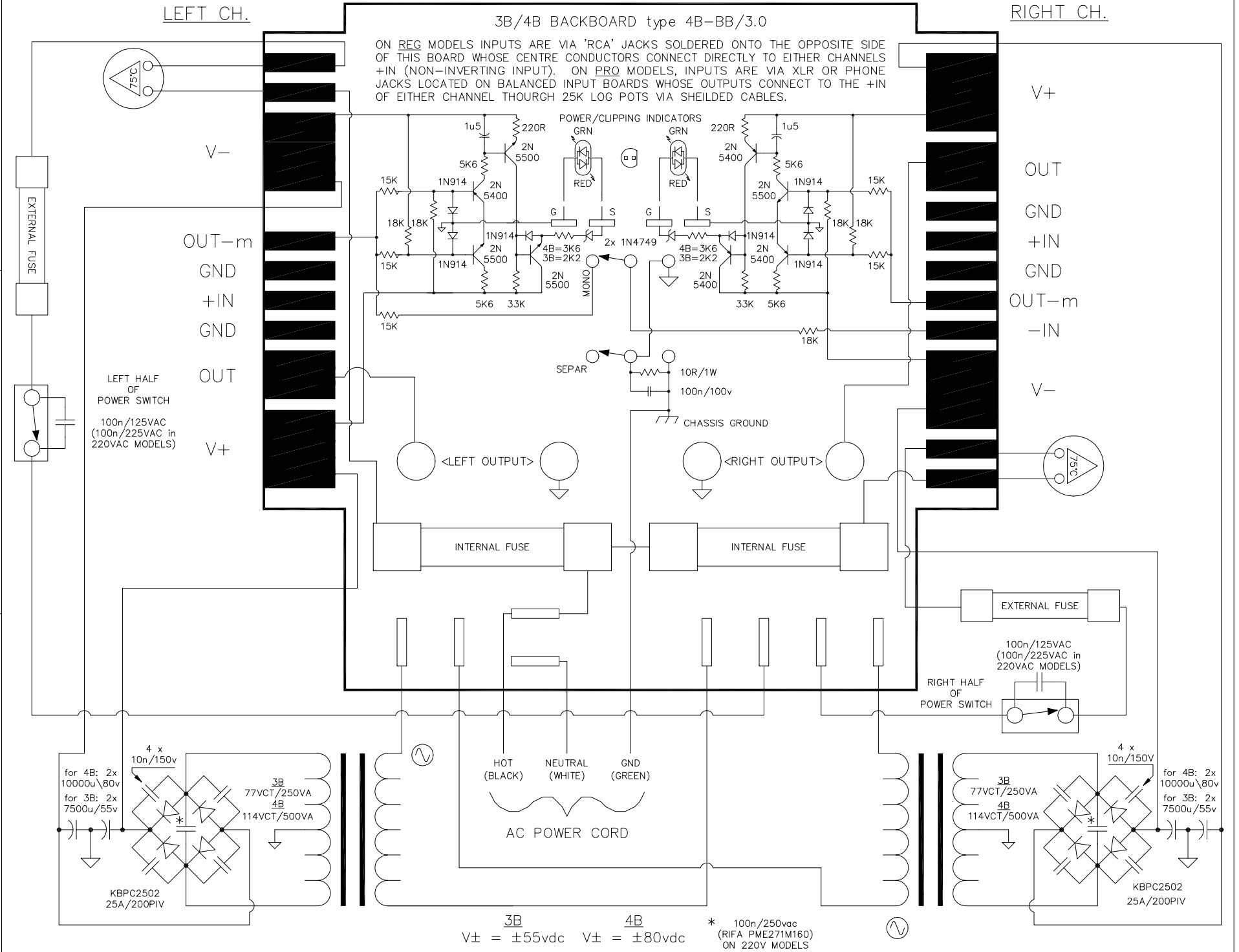
- (A) 1K/.5W
- (B) 220P
- (C) 0R24/5W
- (D) 300R
- (E) 47P
- (F) ON 3B ONLY
- (G) +/- 55v
- (H) FOUR JUMPERS ON 3B ONLY IN PLACE OF OUTRIGGER BOARDS.

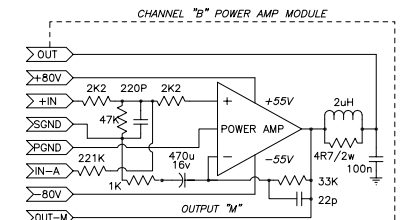
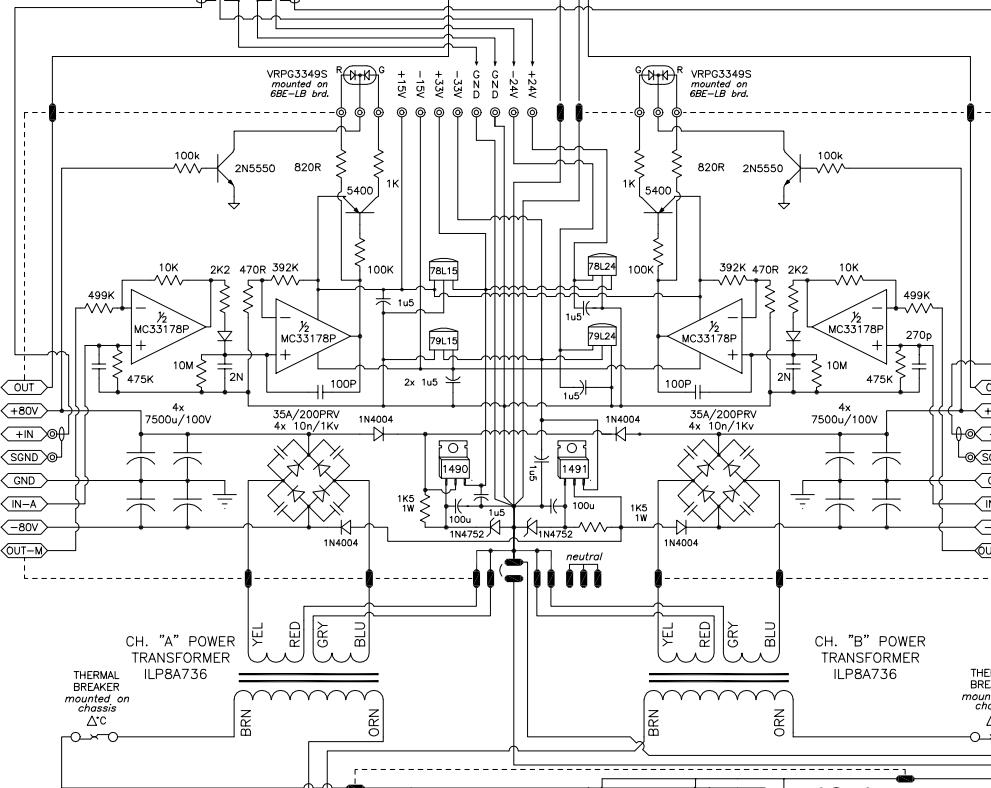
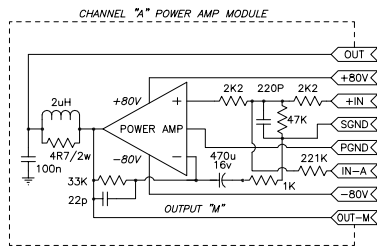
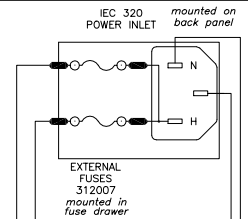
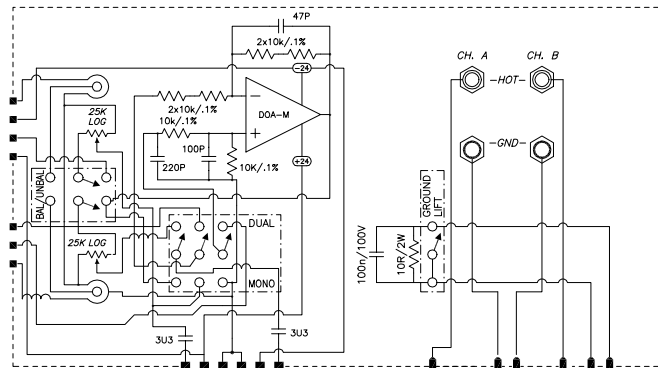
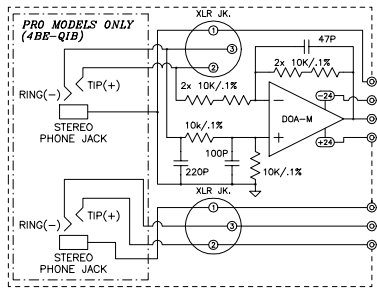
ALL RESISTORS ARE 1/4 WATT EXCEPT WHERE NOTED.

☐ SYMBOL SHOWS CONNECTIONS TO OUTRIGGER PC BOARDS







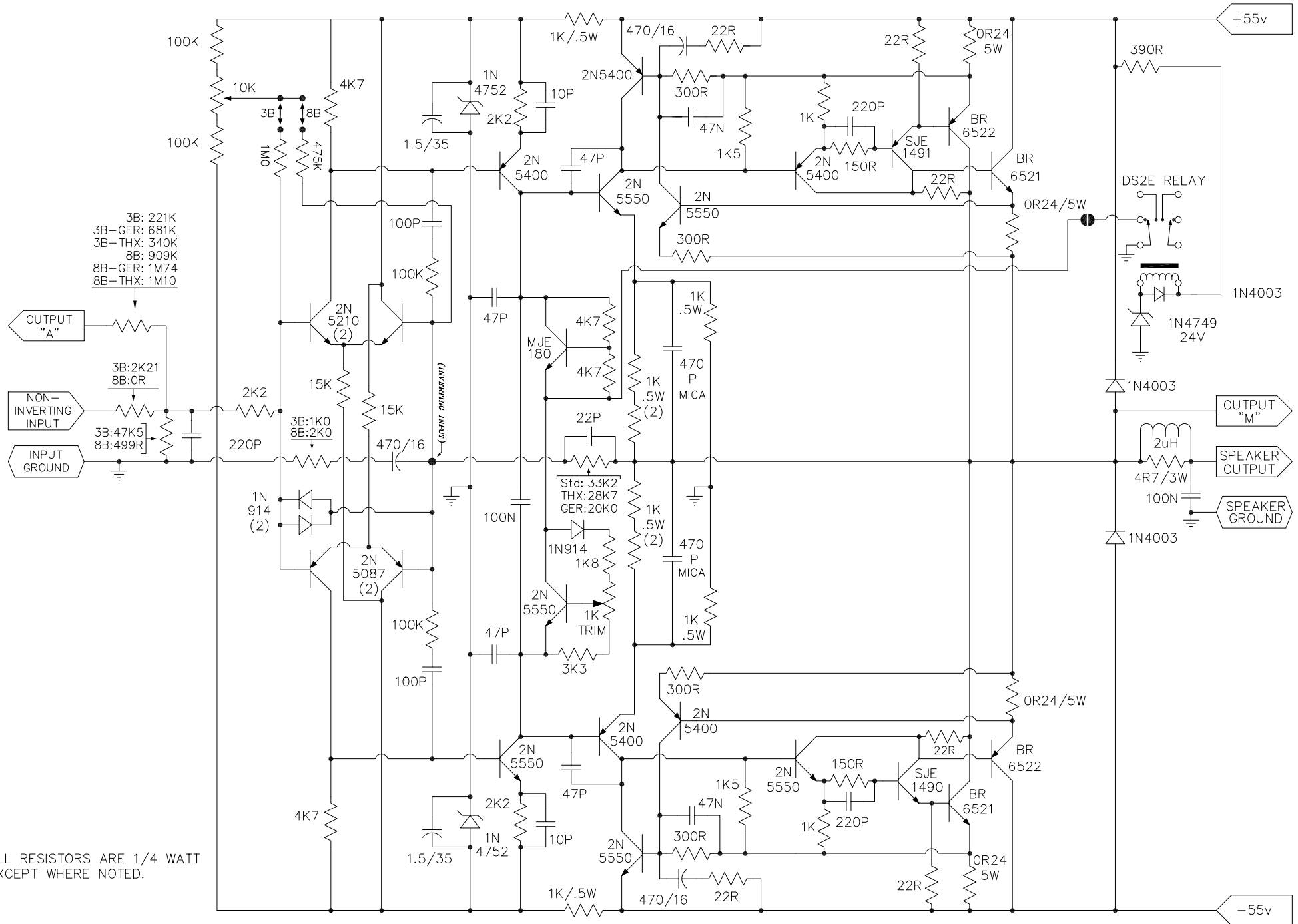


- EDGE CONNECTOR
- BRD EDGE FINGER
- QUICK DISCONNECT TABS/SOCKETS
- .040" SQ. PIN/SOCKET
- .025" SQ. PIN/SOCKET
- SOLDER PAD for hardwire interconnect

BRVSTON INC.
57 Westmore Dr. Reads, Ont. M9V 5Y6 (416)746-1800

**4Be AMPLIFIER
OVERALL SCHEMATIC**

Fig. 11



ALL RESISTORS ARE 1/4 WATT EXCEPT WHERE NOTED.

Rev 0 29 June 1992
 Derived from 3B-MB-S/9.1
 Rev 1 May 94
 200K(2) in DC-0/S chg'd to 100K
 2N5210 bias transistor chg'd to 2N5550; 8B data added.

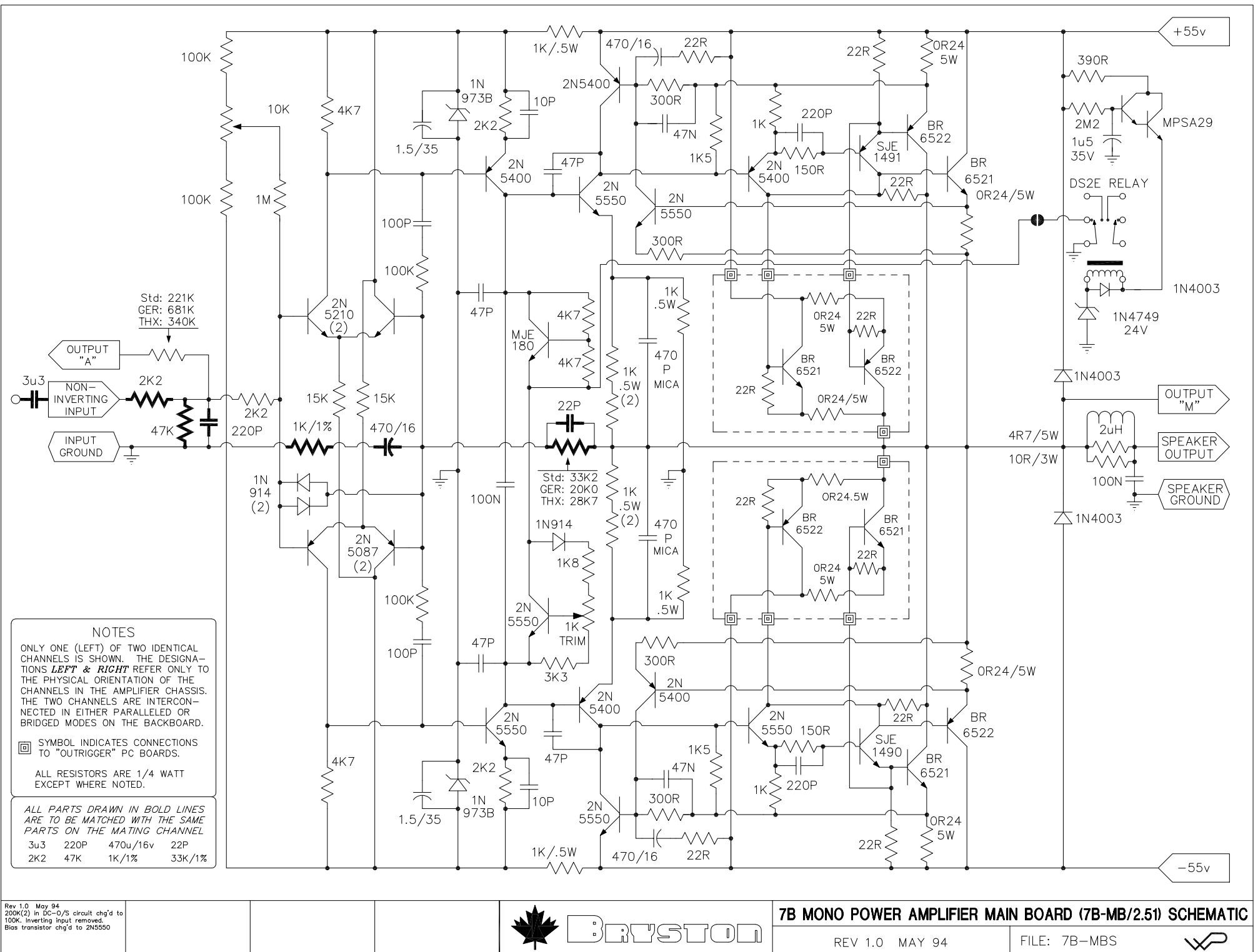


3Be/8B POWER AMPLIFIER MAIN BOARD (7B-MB/2.51) SCHEMATIC

REVISION #1 MAY 94



FILE: 3BE-MBS



NOTES

ONLY ONE (LEFT) OF TWO IDENTICAL CHANNELS IS SHOWN. THE DESIGNATIONS *LEFT & RIGHT* REFER ONLY TO THE PHYSICAL ORIENTATION OF THE CHANNELS IN THE AMPLIFIER CHASSIS. THE TWO CHANNELS ARE INTERCONNECTED IN EITHER PARALLELED OR BRIDGED MODES ON THE BACKBOARD.

☐ SYMBOL INDICATES CONNECTIONS TO "OUTRIGGER" PC BOARDS.

ALL RESISTORS ARE 1/4 WATT EXCEPT WHERE NOTED.

ALL PARTS DRAWN IN BOLD LINES ARE TO BE MATCHED WITH THE SAME PARTS ON THE MATING CHANNEL

3u3	220P	470u/16v	22P
2K2	47K	1K/1%	33K/1%

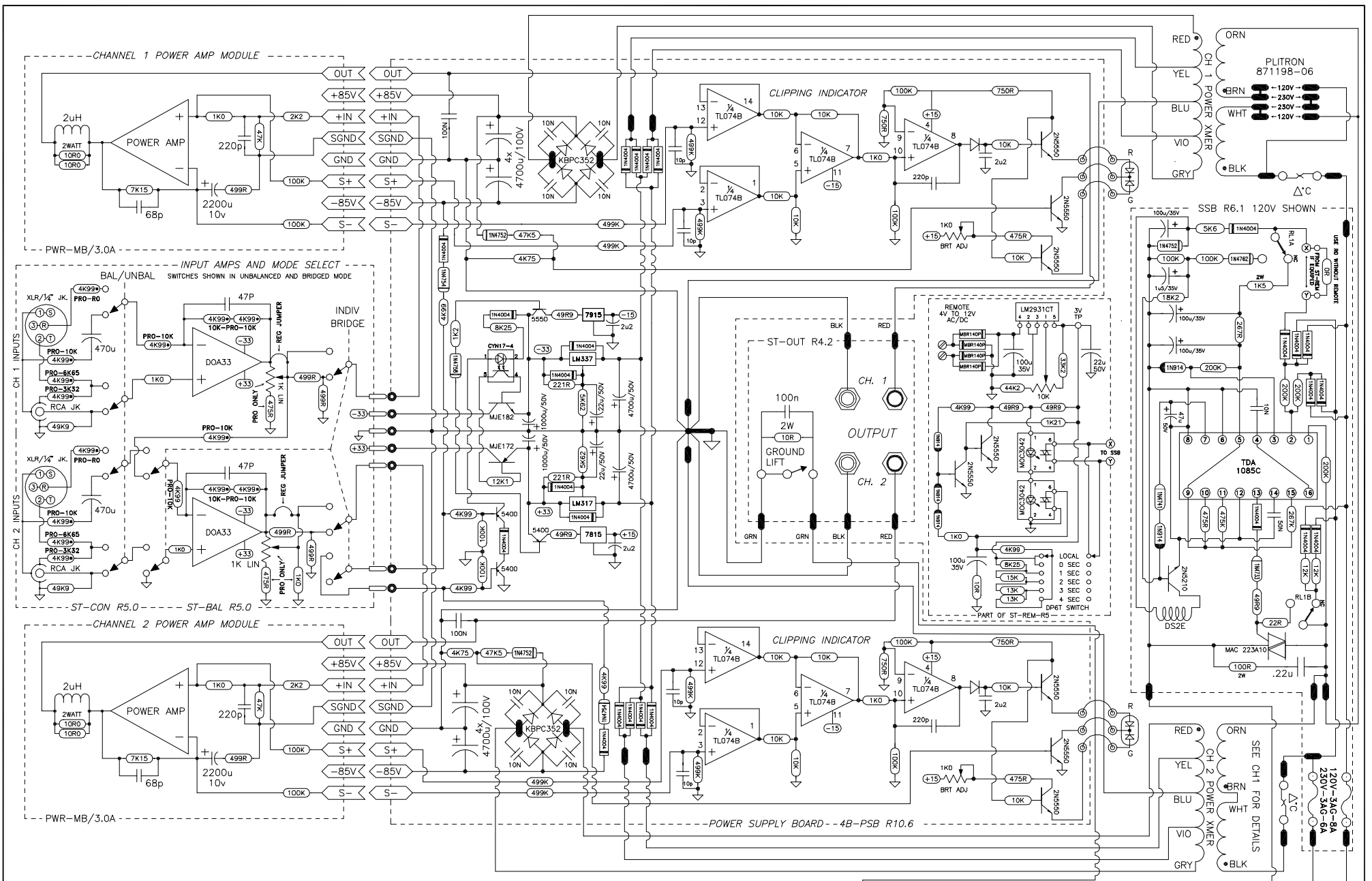
Rev 1.0 May 94
 200K(2) in DC-0/S circuit chg'd to 100K. Inverting input removed.
 Bias transistor chg'd to 2N5550



7B MONO POWER AMPLIFIER MAIN BOARD (7B-MB/2.51) SCHEMATIC

REV 1.0 MAY 94

FILE: 7B-MBS



CONNECTORS

- EDGE CONNECTOR
- BOARD EDGE FINGER
- QUICK DISCONNECT TABS/SOCKETS
- SOLDER PAD FOR FLATWIRE INTERCONNECT
- HEADER INTERCONNECT

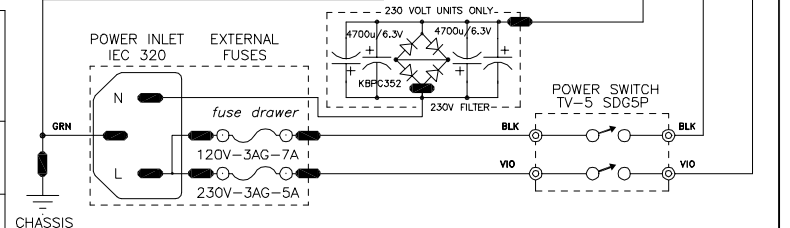
NOTES:

- 4BST = LEXICON 225 AMPLIFIER
- ST-REM (REMOTE POWER ON/OFF) USED IN "THX" MODELS ONLY
- *"R" RESISTORS 0.1% SELECTED IN INPUT AMPS
- ST-PRO BAL INPUTS HAVE GAIN OF 2
- ST-REG BAL INPUTS HAVE UNITY GAIN
- UNBAL INPUTS ALWAYS HAVE GAIN OF 2

BRUYSTON LTD
 677 NEAL DR. PETERBOROUGH, ONTARIO CANADA K9J 7Y4
 PHONE (705) 742-5325 FAX (705) 742-0882

4BST AMPLIFIER OVERALL SCHEMATIC

Rev 10.6 SEPT 96 **ST** SERIES FILE: 4BSCH106



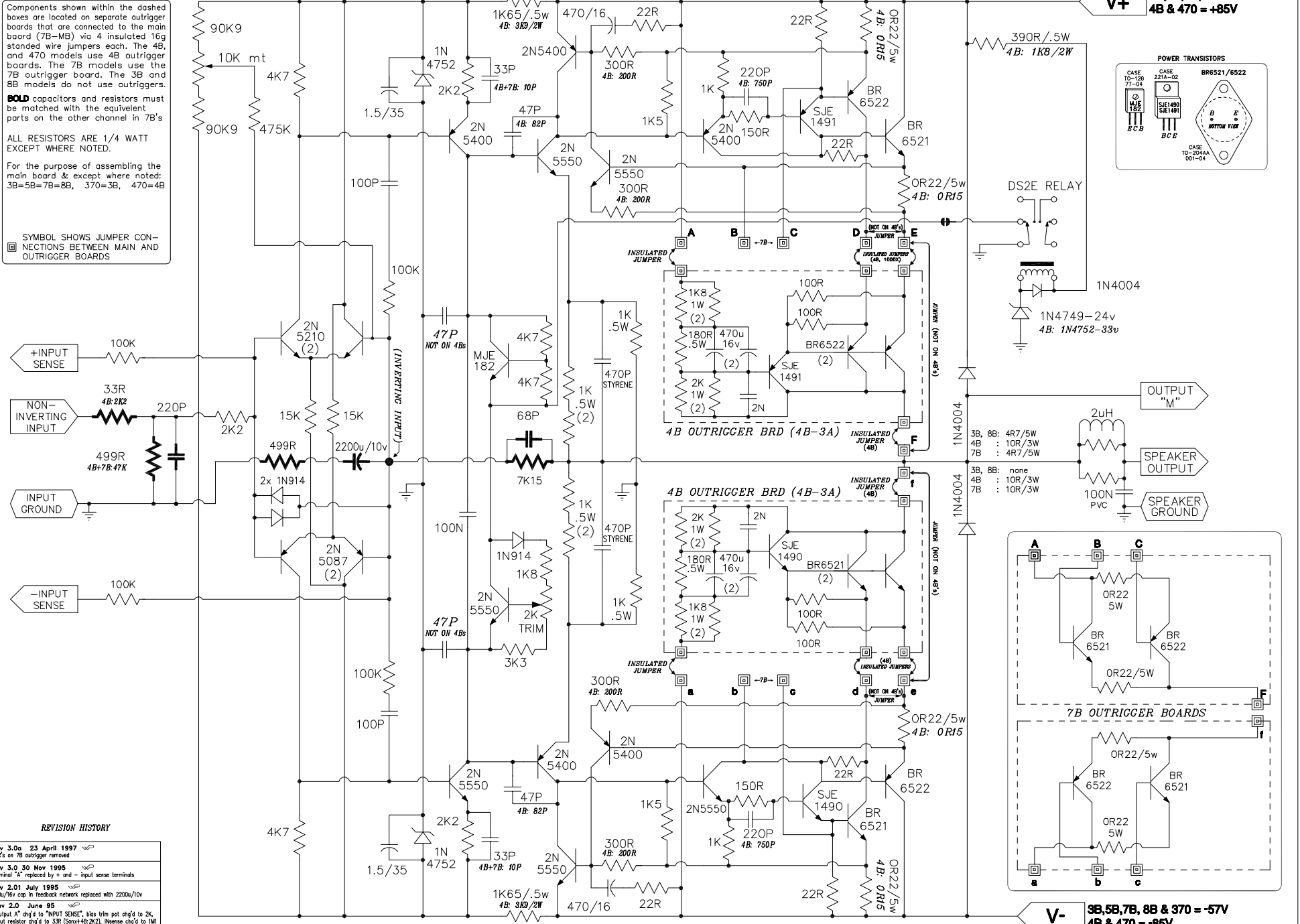
Components shown within the dashed boxes are located on separate outrigger boards that are connected to the main board (7B-MB) via 4 insulated 16g stranded wire jumpers each. The 4B and 470 models use 4B outrigger boards. The 7B models use the 7B outrigger board. The 3B and 8B models do not use outriggers.

BOLD capacitors and resistors must be matched with the equivalent parts on the other channel in 7B's

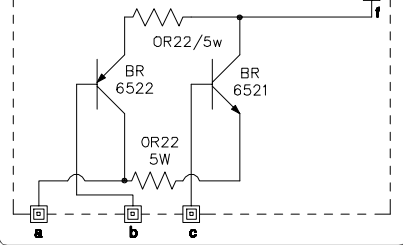
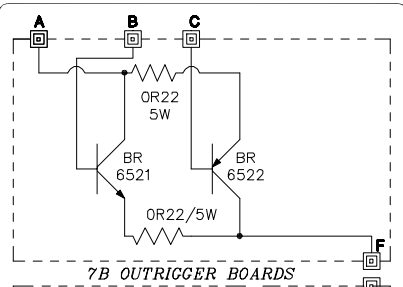
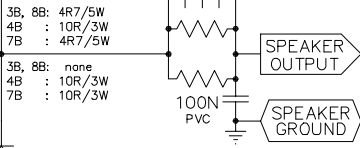
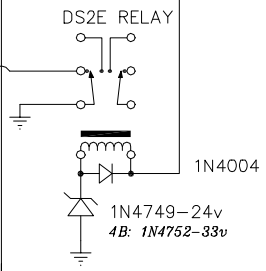
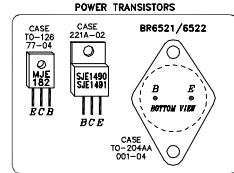
ALL RESISTORS ARE 1/4 WATT EXCEPT WHERE NOTED.

For the purpose of assembling the main board & except where noted: 3B=5B=7B=8B, 370=3B, 470=4B

SYMBOL SHOWS JUMPER CONNECTIONS BETWEEN MAIN AND OUTRIGGER BOARDS



V+ 3B,5B,7B, 8B & 370 = +57V
4B & 470 = +85V



V- 3B,5B,7B, 8B & 370 = -57V
4B & 470 = -85V

REVISION HISTORY

Rev 3.0a	23 April 1997	22R's on 7B outrigger removed
Rev 3.0	30 Nov 1995	Terminal "A" replaced by + and - input sense terminals
Rev 2.01	July 1995	470u/16v cap in feedback network replaced with 2200u/10v
Rev 2.0	June 95	"Output A" ch'gd to "INPUT SENSE", bias trim pot ch'gd to 2K, input resistor ch'gd to 33R (Sens+4B:2K2), in sense ch'gd to 1M1 (Sens: 221K), feedback short res. ch'gd to 499R (Sens: 110) & shunt cap ch'gd to 100u; emitter res's ch'gd to 3022/5w for 4B; feedback cap ch'gd to 68p(Sens: 22p) & res ch'gd to 7K15 (Sens: 33K2), DC OS limit resistors ch'gd from 100K to 90K9 and from 1M1 to 475K & DC OS injection ch'gd from non-inv to inverting input, low voltage limit ch'gd to 1K65/.5w (4B: 3K9/2w)
Rev 2.0	June 95	200K (2) in DC-O/S ch'gd to 100K; 2N5210 in bias ch'gd to 2N5550; output res ch'gd to 6W; output "A" added

BRYSTON Ltd.
P.O. Box 2170, Peterborough, Ont., Canada K9J-7Y4 (705)742-5325

File: **PWR-MESS**
Part No: **PWR-MB-S/3.0a**
Date: **23 APRIL 97**
Revision: **3.0a**
By:

POWER AMPLIFIER MAIN BOARD SCHEMATIC for PWR-MB/3.0a
used in Bryston 3B, 4B, 5B, 7B, 8B, 370 & 470 amplifiers
and in Lexicon 212, 225, 312, 412, & 501 amplifiers

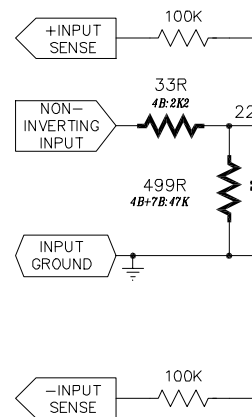
Components shown within the dashed boxes are located on separate outrigger boards that are connected to the main board (7B-MB) via 4 insulated 16g stranded wire jumpers each. The 4B, and 470 models use 4B outrigger boards. The 7B models use the 7B outrigger board. The 3B and 8B models do not use outriggers.

BOLD capacitors and resistors must be matched with the equivalent parts on the other channel in 7B's

ALL RESISTORS ARE 1/4 WATT EXCEPT WHERE NOTED.

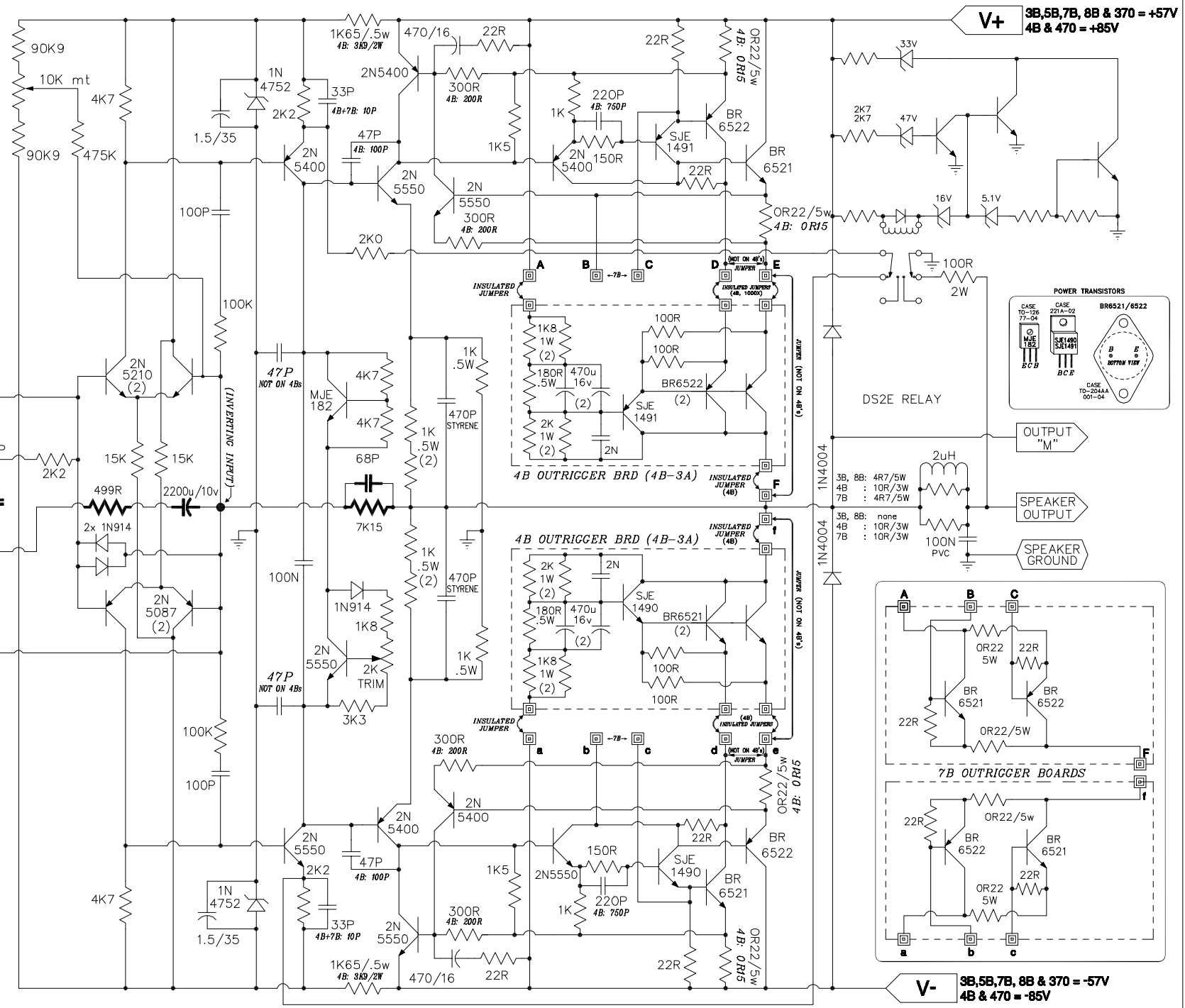
For the purpose of assembling the main board & except where noted: 3B=5B=7B=8B, 370=3B, 470=4B

SYMBOL SHOWS JUMPER CONNECTIONS BETWEEN MAIN AND OUTRIGGER BOARDS

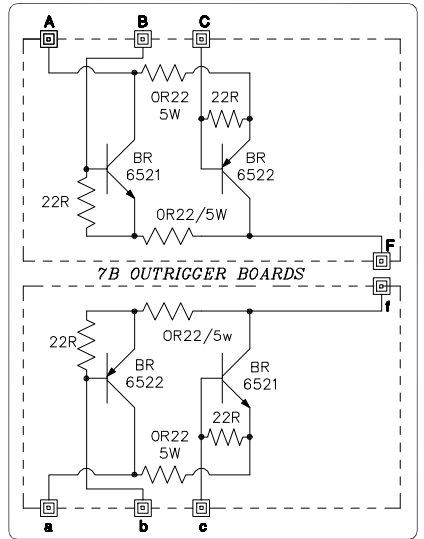
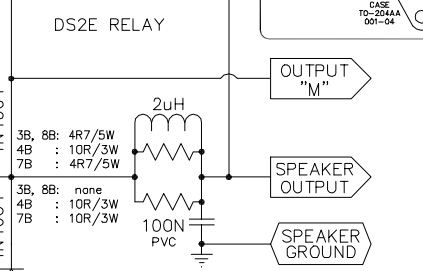
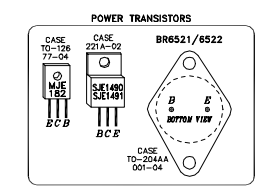


PRELIMINARY

REVISION HISTORY	
Rev. 3.1	27 Nov 1996 SFT New mute relay function
Rev. 3.0	30 Nov 1995 Terminal "A" replaced by + and - input sense terminals
Rev. 2.01	July 1995 470u/16v cap in feedback network replaced with 2200u/10v
Rev. 2.0	June 95 "Output A" chgd to "INPUT SENSE", bias trim pot chgd to 2K, input resistor chgd to 33R (Sovix+4B:2K2), inphase chgd to 1M1 (Sovix: 221K), feedback short res. chgd to 499R (Sovix: 110) & short cap chgd to 100u, emitter res. chgd to 3922/5w for 4B, feedback cap chgd to 68p (Sovix: 22p) & res chgd to 7K15 (Sovix: 33K2), DC OS limit resistors chgd from 100K to 90K9 and from 1M to 475K & DC OS injection chgd from non-inv to inverting input, low voltage limit chgd to 16S/5w (4B: 3K9/2w)
Rev. 2.0	June 95 200K (2) in DC-0/S chgd to 100K; 2N5210 in bias chgd to 2N5550; output res chgd to 6W; output "A" added



V+ 3B,5B,7B, 8B & 370 = +57V
4B & 470 = +85V

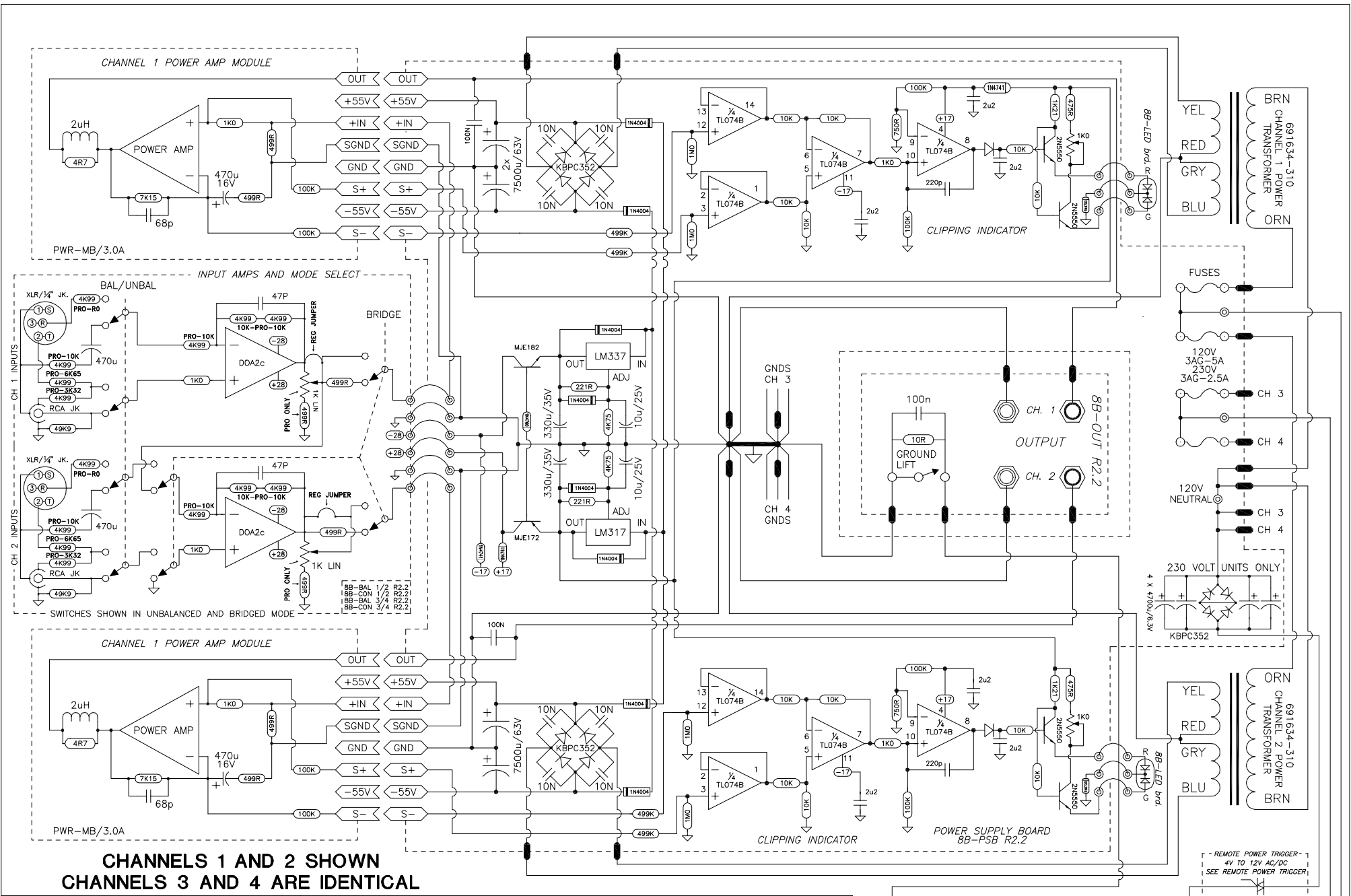


V- 3B,5B,7B, 8B & 370 = -57V
4B & 470 = -85V

BRUSTON Ltd.
P.O. Box 2170, Peterborough, Ont., Canada K9J-7Y4 (705)742-5325

File: **PWR-MB-S**
Part No: **PWR-MB-S/3.1**
Date: **27 NOV 1996**
Revision: **3.1**
By:

POWER AMPLIFIER MAIN BOARD SCHEMATIC
for the PWR-MB/3.0a PCB
used in 3B, 4B, 5B, 7B, 8B, 370 & 470 amplifiers



CONNECTORS

- EDGE CONNECTOR
- BOARD EDGE FINGER
- QUICK DISCONNECT TABS/SOCKETS
- SOLDER PAD FOR FLATWIRE INTERCONNECT

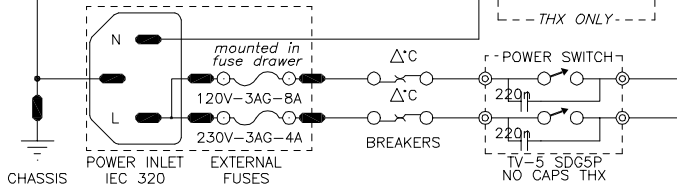
NOTES:
 8BST=LEXICON 412 AMPLIFIER
 5BST=LEXICON 312 AMPLIFIER
 5B AMPLIFIER DOES NOT POPULATE CH 3 ON THE PSB, AND CH 3 ON THE INPUT BOARDS. CH 4 SILKSCREEN IS RELABELED AS CH 3 HOWEVER.

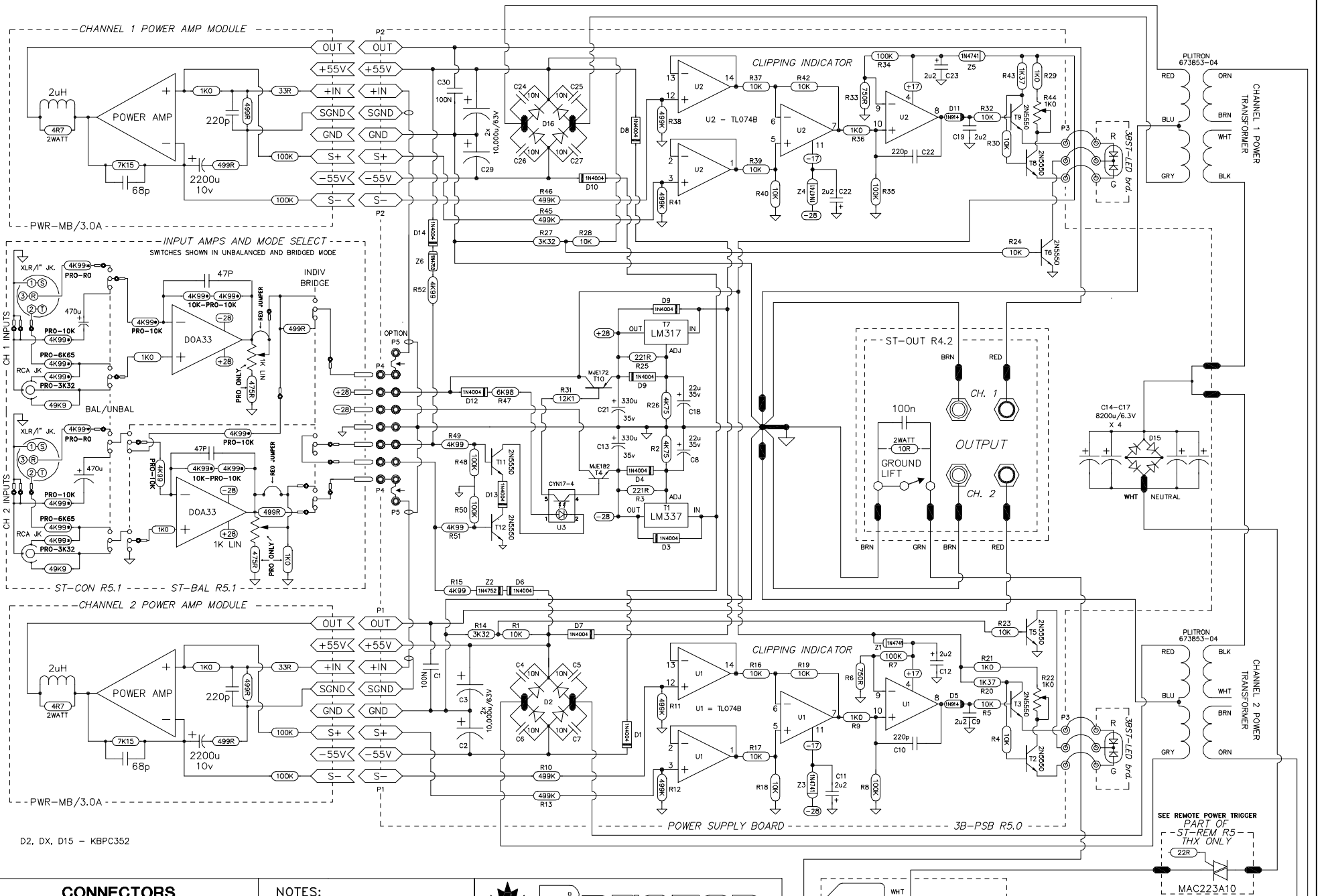
PART #
 8B-PSB R2.2
 8B-OUT R2.2
 8B-BAL 1/2 R2.2
 8B-CON 1/2 R2.2
 8B-BAL 3/4 R2.2
 8B-CON 3/4 R2.2
 8B-LED R2.2

BRYSTON LTD
 677 NEAL DR. PETERBOROUGH, ONTARIO CANADA K9J 7Y4
 PHONE (705) 742-5325 FAX (705) 742-0882

8B + 5B AMPLIFIER
 AMPLIFIER SCHEMATIC

FILE: 8BSCH24 PART No: 8BPSB
 DATE: DEC 96 DWG BY: ST REV: 2.4





D2, DX, D15 - KBPC352

CONNECTORS

- EDGE CONNECTOR
- BOARD EDGE FINGER
- QUICK DISCONNECT TABS/SOCKETS
- SOLDER PAD FOR FLATWIRE INTERCONNECT
- HEADER BOARD TO BOARD INTERCONNECT

NOTES:

- 3BST (THX) R4.8 = LEXICON 212 R4.8
- ST-REM (REMOTE POWER ON/OFF) USED IN THX MODES ONLY
- *"RESISTORS 0.1% SELECTED IN INPUT AMPS"
- ST-PRO BAL INPUT HAVE GAIN OF 2
- ST-REG BAL INPUT HAVE UNITY GAIN
- UNBAL INPUTS ALWAYS HAVE GAIN OF 2

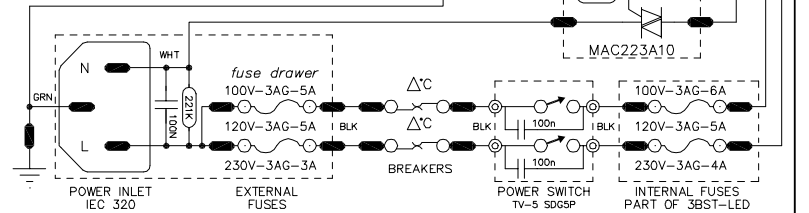


BRYSTON LTD
 677 NEAL DR. PETERBOROUGH, ONTARIO CANADA K9J 7Y4
 PHONE (705) 742-5325 FAX (705) 742-0882

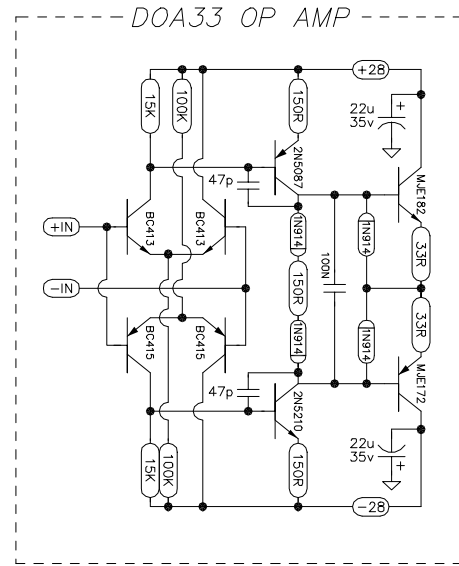
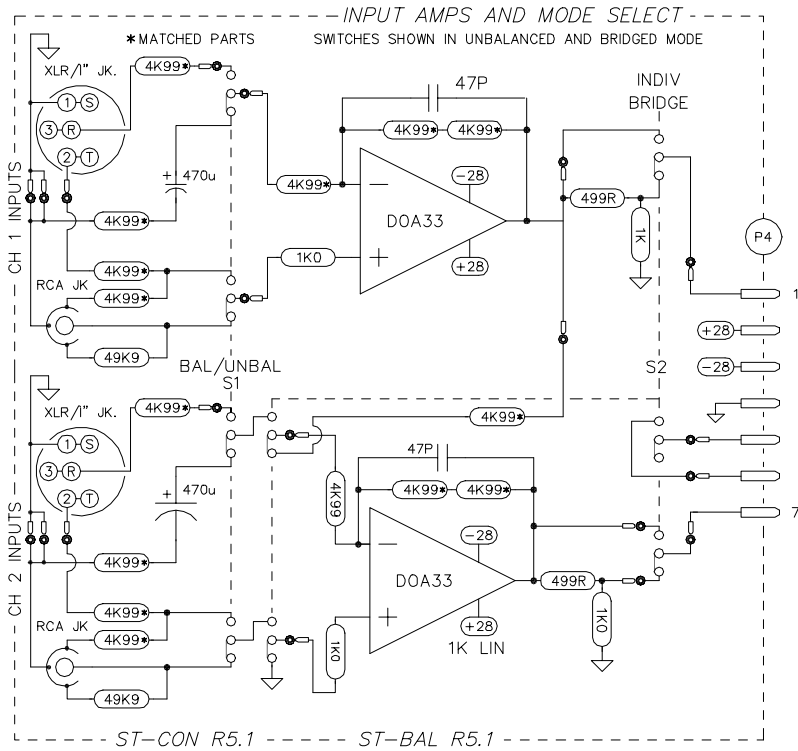
3BST AMPLIFIER

OVERALL SCHEMATIC

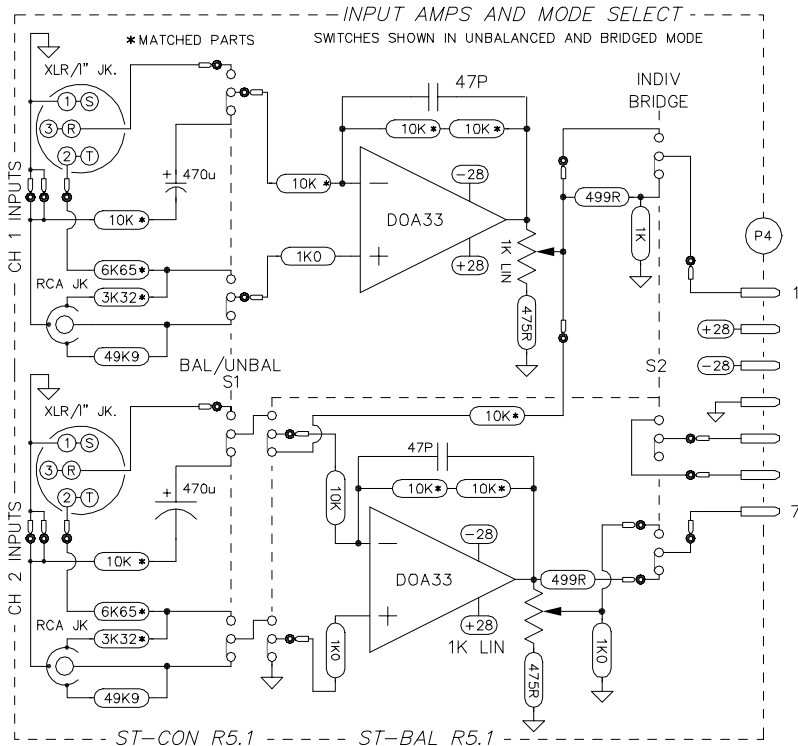
FILE: 3BSCH5 PART No: RE: 3B-PSB R5.0
 DATE: JAN 97 DWG BY: ST REV: 5.0



4BST REG INPUT CONFIGURATION



4BST PRO INPUT CONFIGURATION



= HEADER INTERCONNECT
 = BOARD TO BOARD INTERCONNECT
 S1 & S2 = 6PDT SLIDE SWITCH



BRYSTON LTD
 677 NEAL DR. PETERBOROUGH, ONTARIO CANADA K9J 7Y4
 PHONE (705) 742-5325 FAX (705) 742-0882

4BST INPUT SCHEMATIC

SCHEMATIC OF ST-BAL & ST-CON BOARDS

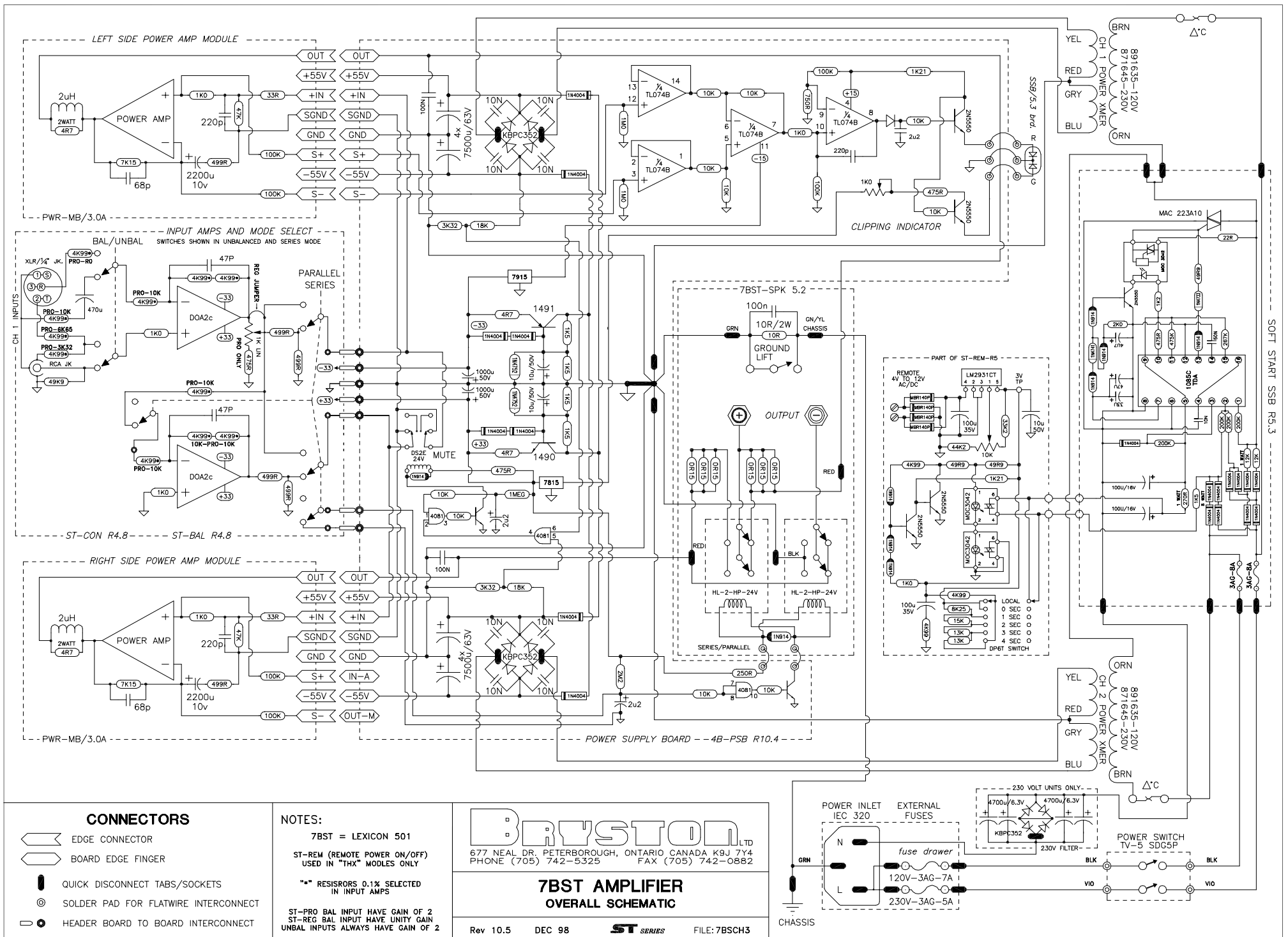
FILE: 4BINPUTSCH

PART No: ST BAL R 5.1

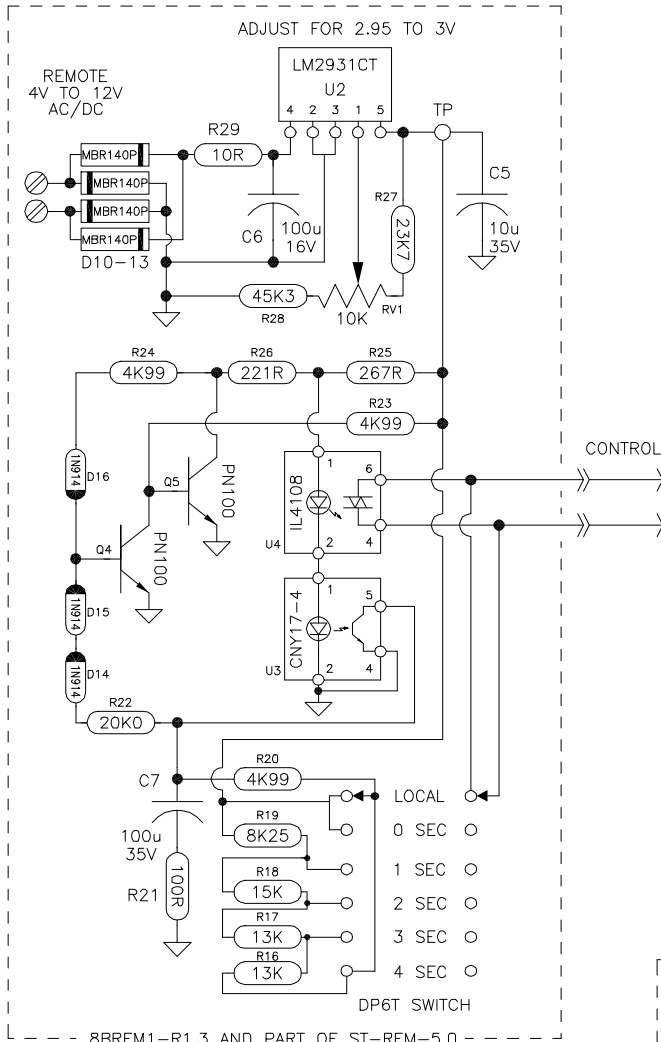
DATE: MAY 97

DWG BY:

REV: 5.1



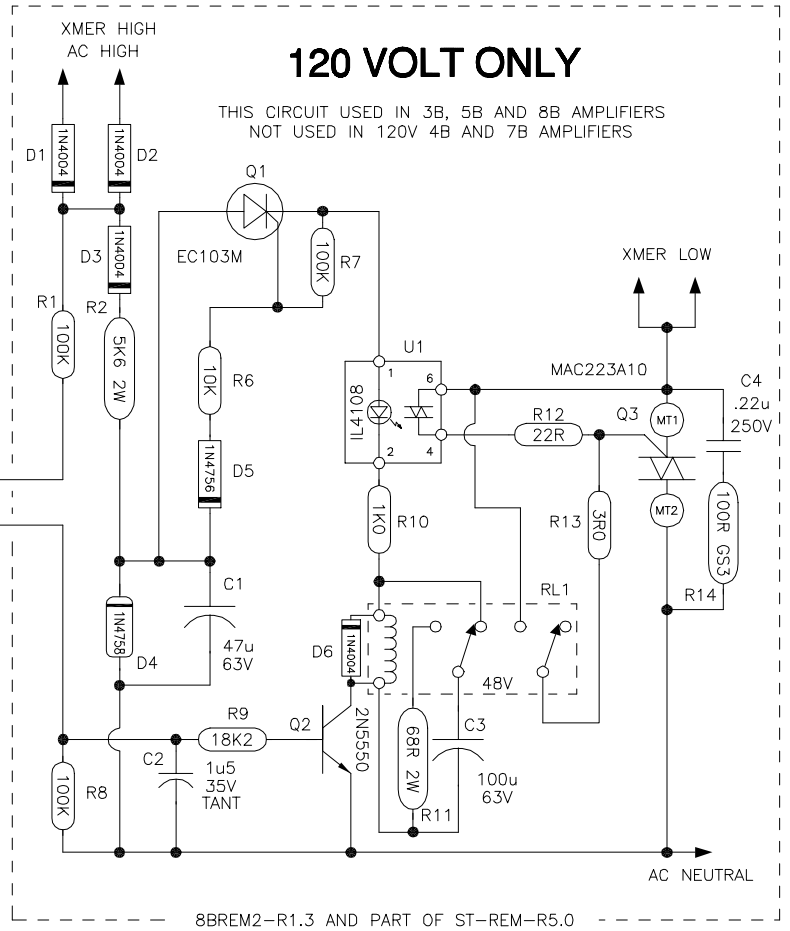
REMOTE INPUT & TIMING CIRCUIT



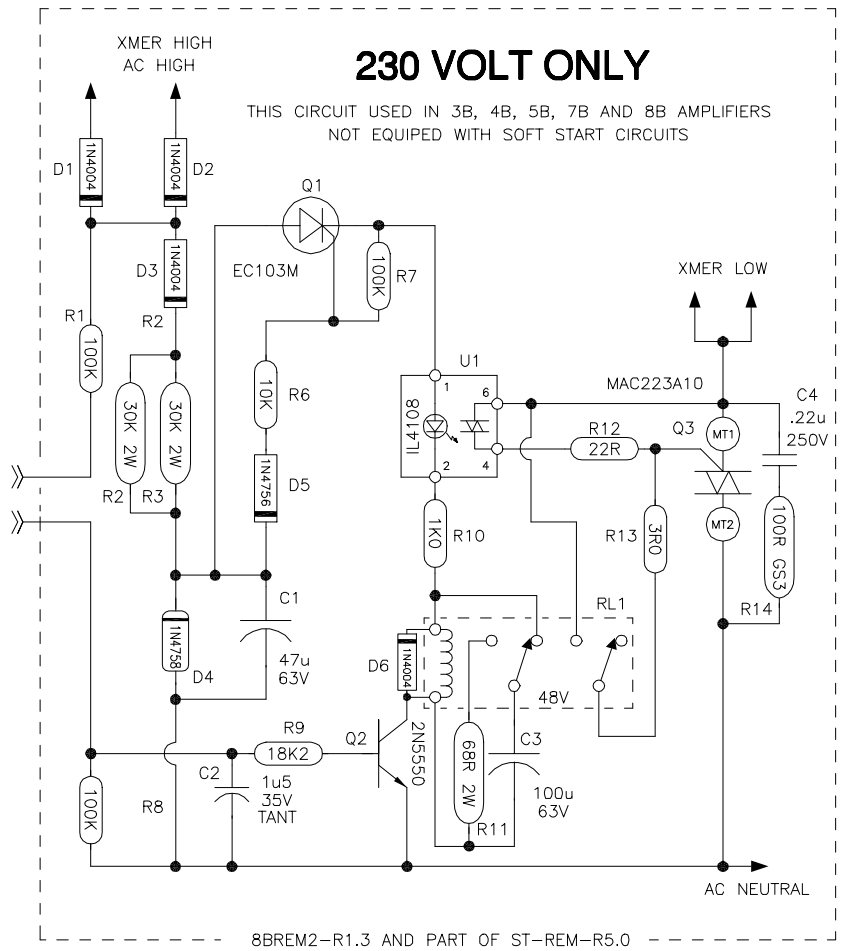
8BREM1-R1.3 AND PART OF ST-REM-5.0

TIMING CIRCUIT WILL OPERATE SOFT START CIRCUIT ON 4B AND 7B AMPLIFIERS

TRIAC TURN ON CIRCUIT



8BREM2-R1.3 AND PART OF ST-REM-5.0



8BREM2-R1.3 AND PART OF ST-REM-5.0



BRYSTON LTD
 677 NEAL DR. PETERBOROUGH, ONTARIO CANADA K9J 7Y4
 PHONE (705) 742-5325 FAX (705) 742-0882

REMOTE POWER TRIGGER

4V TO 12V REMOTE POWER ON/OFF CONTROL

FILE: STREMSCH3A

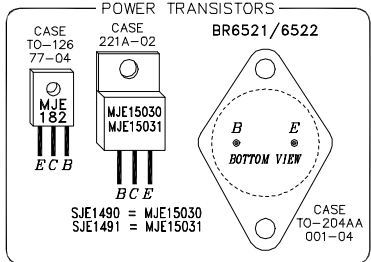
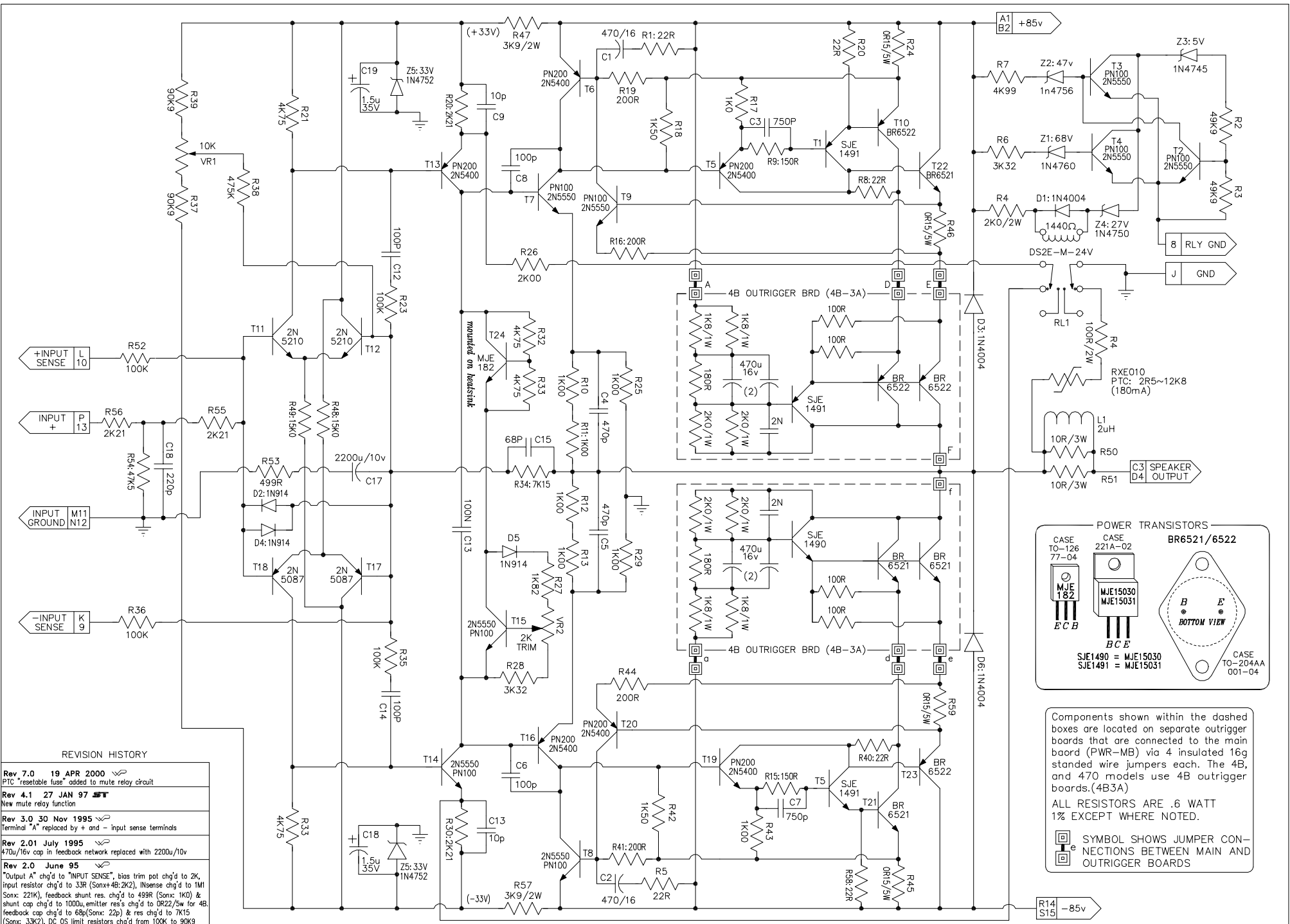
PART No: ST-REM-3A

DATE: MAR 08 00

DWG BY: E J G



REV: 3A



Components shown within the dashed boxes are located on separate outrigger boards that are connected to the main board (PWR-MB) via 4 insulated 16g stranded wire jumpers each. The 4B, and 470 models use 4B outrigger boards.(4B3A)

ALL RESISTORS ARE .6 WATT
1% EXCEPT WHERE NOTED.

⊠ SYMBOL SHOWS JUMPER CONNECTIONS BETWEEN MAIN AND OUTRIGGER BOARDS

REVISION HISTORY

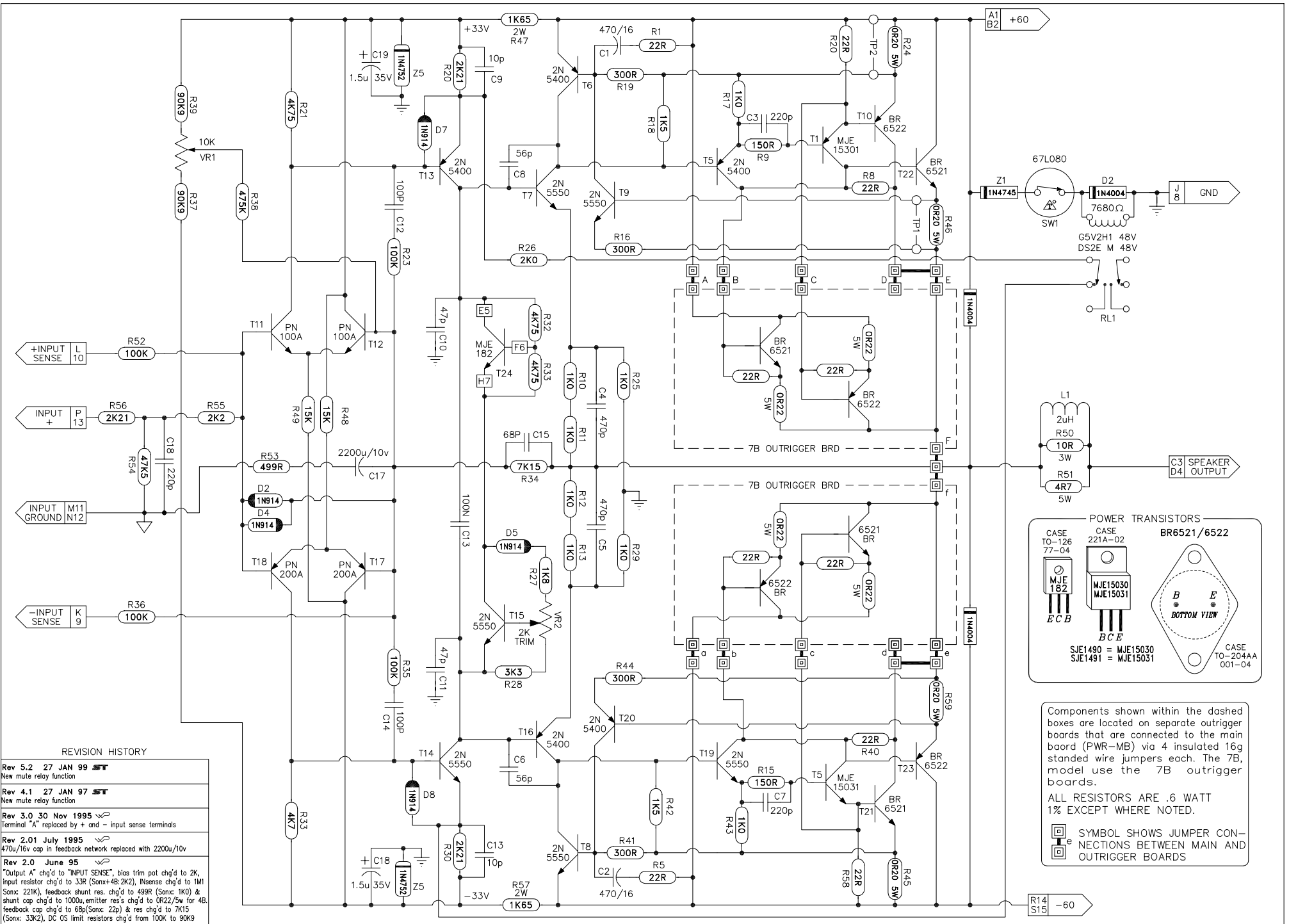
Rev 7.0	19 APR 2000	PTC "resettable fuse" added to mute relay circuit
Rev 4.1	27 JAN 97	New mute relay function
Rev 3.0	30 Nov 1995	Terminal "A" replaced by + and - input sense terminals
Rev 2.01	July 1995	470u/16v cap in feedback network replaced with 2200u/10v
Rev 2.0	June 95	"Output A" chg'd to "INPUT SENSE", bias trim pot chg'd to 2K, input resistor chg'd to 33R (Sonz+4B:2K2), INsense chg'd to 1M1 (Sonz: 221K), feedback shunt res. chg'd to 499R (Sonz: 1K0) & shunt cap chg'd to 1000u,emitter res's chg'd to DR22/5w for 4B, feedback cap chg'd to 68p(Sonz: 22p) & res chg'd to 7K15 (Sonz: 33K2), DC OS limit resistors chg'd from 100K to 90K9 and from 1M1 to 475K & DC OS injection chg'd from non-inv to inverting input, low voltage limit chg'd to 1K65/5w (4B: 3K9/2w)
Rev 2.0	June 95	200K (2) in DC-O/S chg'd to 100K; 2N5210 in bias chg'd to 2N5550; output res chg'd to 6W; output "A" added

BRUSTON Ltd.
P.O. Box 2170, Peterborough, Ont., Canada K9A-7Y4 (705)742-5325

File/Rev: PWR-MB7-Schematic/0.0
Date: 19 April 2000
Revision: 19 April 2000
By: ST

**4B POWER AMPLIFIER CHANNEL
MAIN BOARD SCHEMATIC**

Circuitry located on printed circuit boards (PCB's) PWR-MB/7.0 and 4B-IIIa



REVISION HISTORY

Rev 5.2	27 JAN 99	ST	New mute relay function
Rev 4.1	27 JAN 97	ST	New mute relay function
Rev 3.0	30 Nov 1995		Terminal "A" replaced by + and - input sense terminals
Rev 2.01	July 1995		470u/16v cap in feedback network replaced with 2200u/10v
Rev 2.0	June 95		"Output A" chg'd to "INPUT SENSE", bias trim pot chg'd to 2K, input resistor chg'd to 33R (Sonz+4B:2K2), INsense chg'd to 1M1 (Sonz: 221K), feedback shunt res. chg'd to 499R (Sonz: 1K0) & shunt cap chg'd to 1000u, emitter res's chg'd to OR22/5w for 4B, feedback cap chg'd to 68p (Sonz: 22p) & res chg'd to 7K15 (Sonz: 33K2), DC OS limit resistors chg'd from 100K to 90K9 and from 1M to 475K & DC OS injection chg'd from non-inv to inverting input, low voltage limit chg'd to 1K65/.5w (4B: 3K9/2w)
Rev 2.0	June 95		200K (2) in DC-O/S chg'd to 100K; 2N5210 in bias chg'd to 2N5550; output res chg'd to 6W; output "A" added

BRISTON
P.O. Box 2170, Peterborough, Ont., Canada K9J-7Y4 (705)742-5325

File: **PWRSCH7B**
Part No: **PWR-MB-S7.0**
Revision: **MAY 2000**
By: **ST**

7B CHANNEL ASSEMBLY

for the PWR-MB/7.0 PCB adapted for 7B amplifiers

POWER TRANSISTORS BR6521/6522

CASE TO-126 77-04
MJE 182
E C B

CASE 221A-02
MJE15030
MJE15031
B C E

SJE1490 = MJE15030
SJE1491 = MJE15031

CASE TO-204AA 001-04

Components shown within the dashed boxes are located on separate outrigger boards that are connected to the main board (PWR-MB) via 4 insulated 16g stranded wire jumpers each. The 7B model use the 7B outrigger boards.

ALL RESISTORS ARE .6 WATT 1% EXCEPT WHERE NOTED.

SYMBOL SHOWS JUMPER CONNECTIONS BETWEEN MAIN AND OUTRIGGER BOARDS