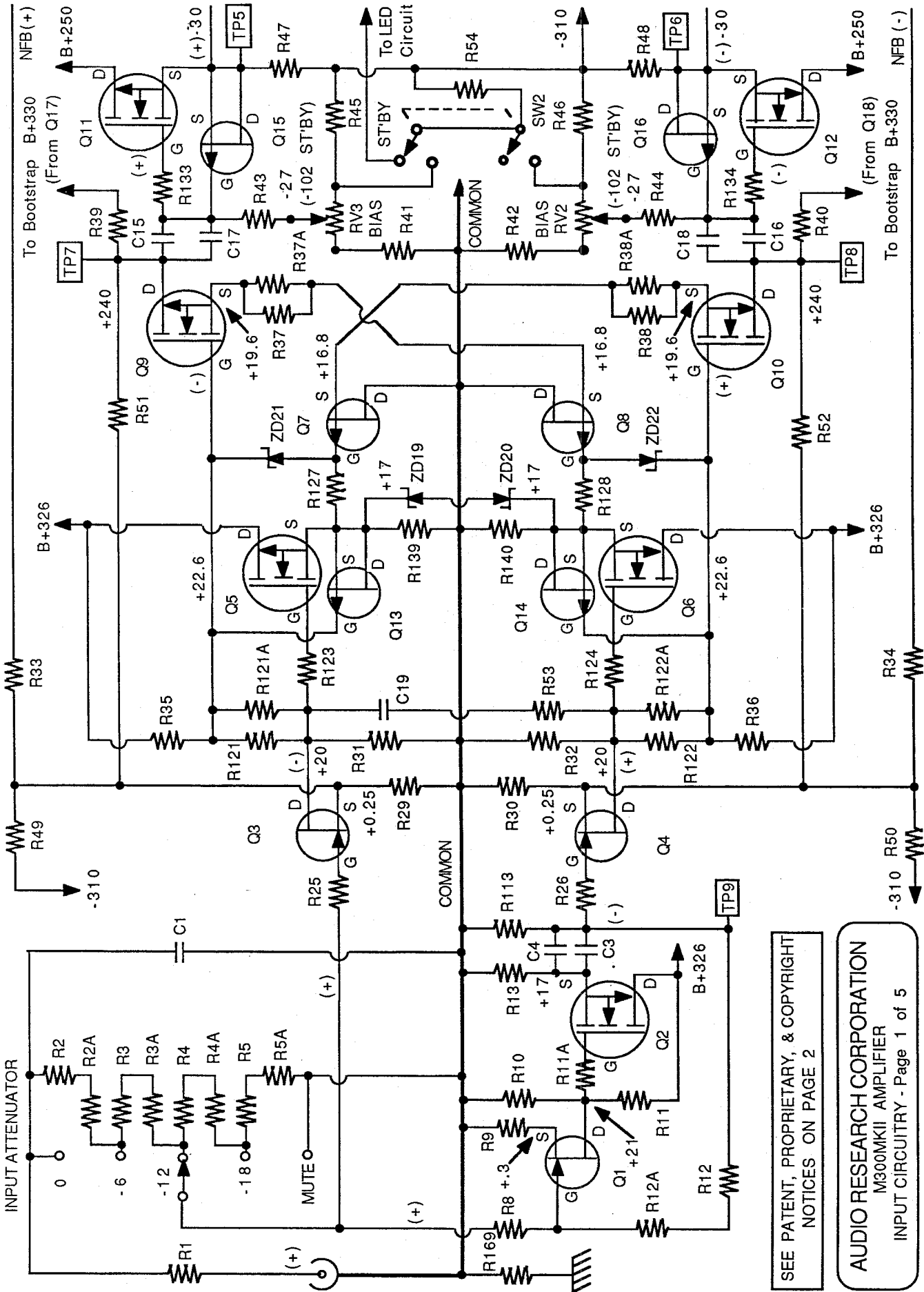


MODEL M300 MARK II  
MONAURAL POWER AMPLIFIER  
SCHEMATIC

8-15-88

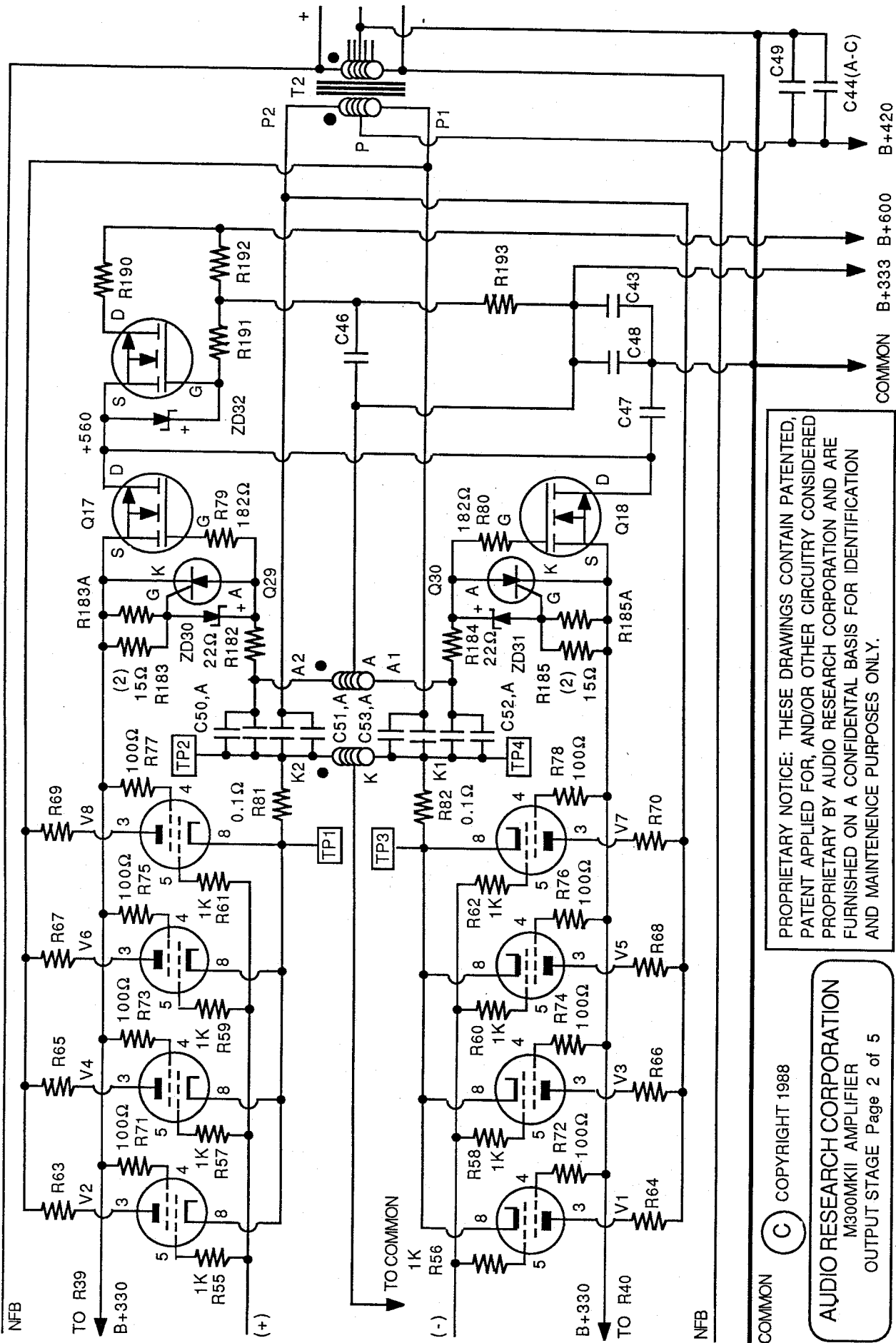
**audio research corporation**

6801 SHINGLE CREEK PARKWAY  
MINNEAPOLIS, MINNESOTA 55430



SEE PATENT, PROPRIETARY, & COPYRIGHT  
NOTICES ON PAGE 2

AUDIO RESEARCH CORPORATION  
M300MKII AMPLIFIER  
INPUT CIRCUITRY - Page 1 of 5

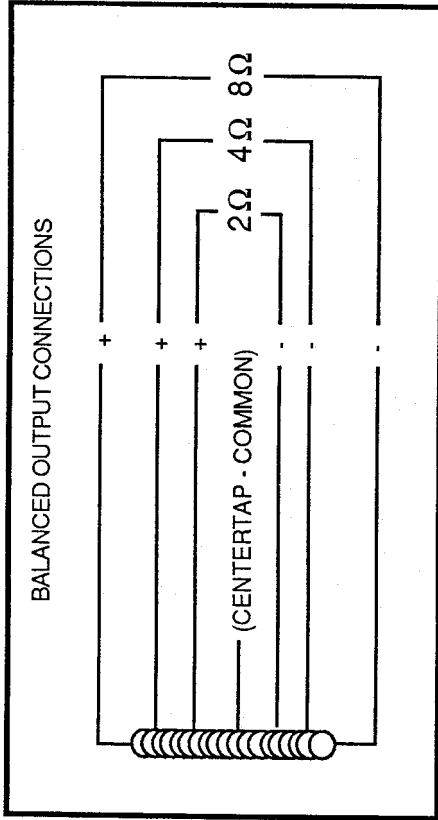


PROPRIETARY NOTICE: THESE DRAWINGS CONTAIN PATENTED, PATENT APPLIED FOR, AND/OR OTHER CIRCUITRY CONSIDERED PROPRIETARY BY AUDIO RESEARCH CORPORATION AND ARE FURNISHED ON A CONFIDENTIAL BASIS FOR IDENTIFICATION AND MAINTENANCE PURPOSES ONLY.

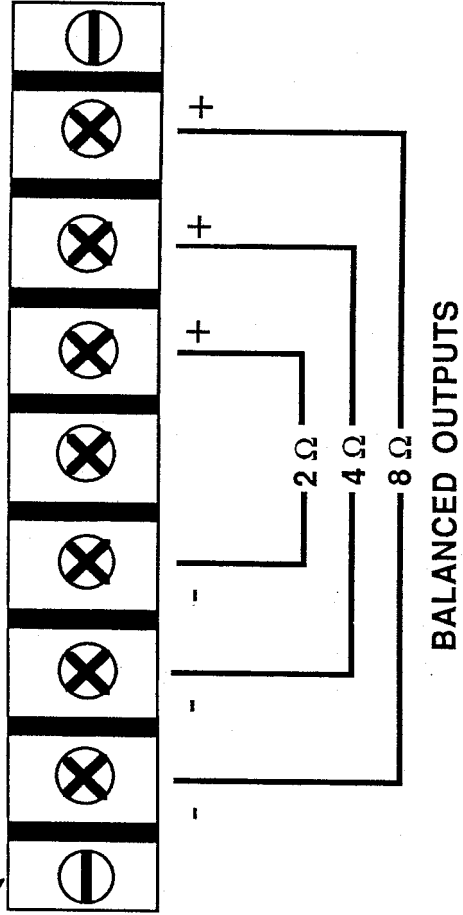
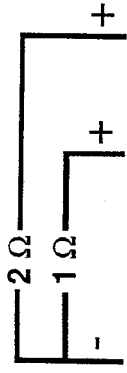
COMMON (C) COPYRIGHT 1988  
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 M300MKII AMPLIFIER  
 OUTPUT STAGE Page 2 of 5

CAUTION NOTE: CENTER-TAP IS COMMON AND GROUNDED INTERNALLY.

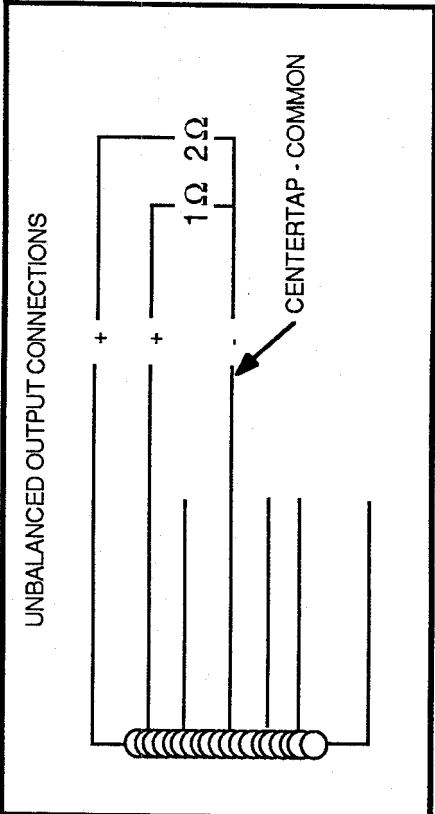
OUTPUT TERMINAL STRIP LOCATED ON REAR CHASSIS APRON



UNBALANCED OUTPUTS



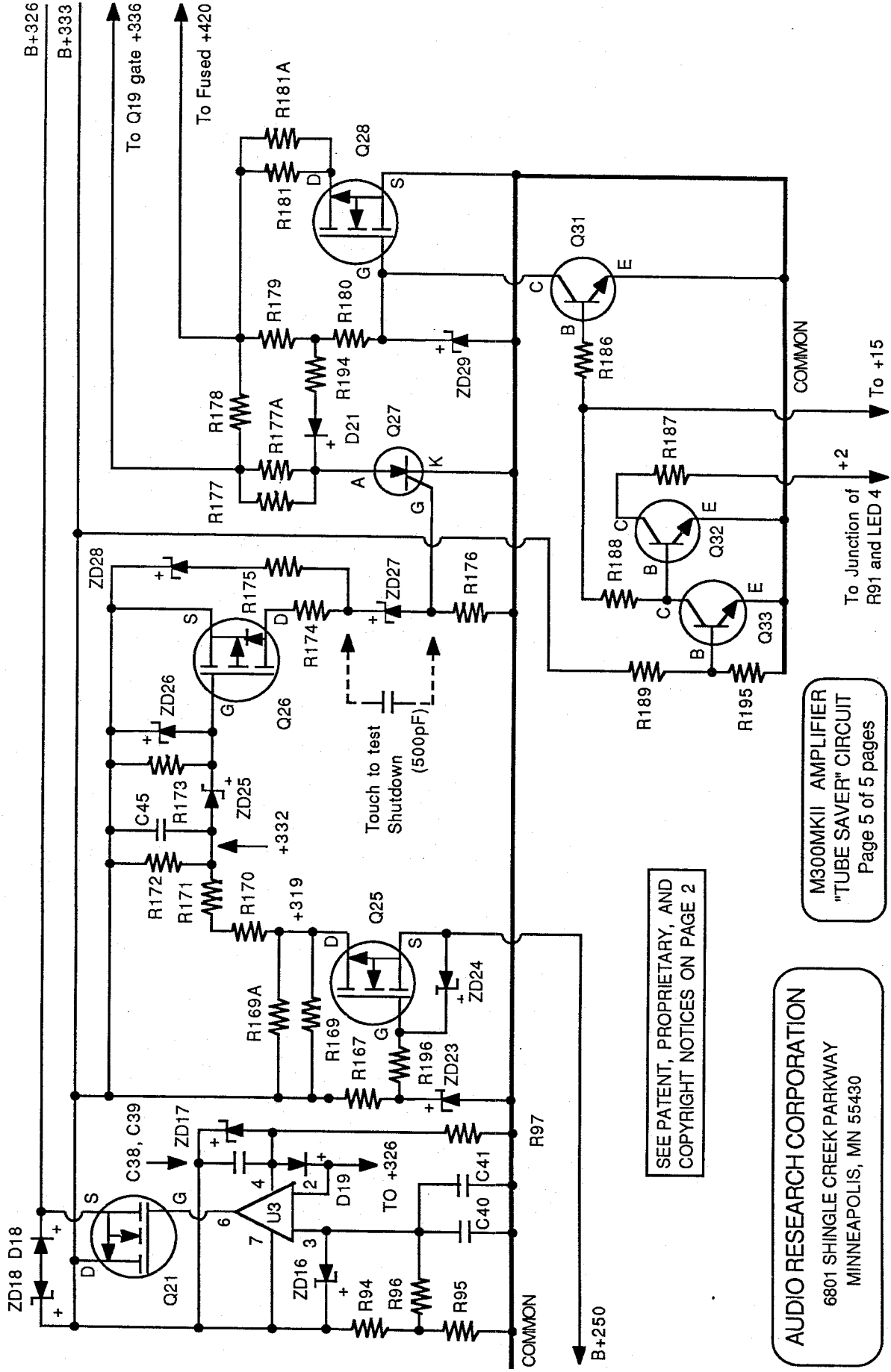
(+ and - signs indicate positive and negative polarity [phase])



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M300MKII AMPLIFIER  
(OUTPUT CONNECTIONS)  
Page 3 of 5 pages





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M300MKII AMPLIFIER  
"TUBE SAVER" CIRCUIT  
Page 5 of 5 pages

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6801 SHINGLE CREEK PARKWAY  
MINNEAPOLIS, MN 55430

# **audio research**

H I G H D E F I N I T I O N<sup>®</sup>

3900 ANNAPOLIS LANE NORTH / PLYMOUTH, MINNESOTA 55447-5447 / PHONE: 763-577-9700 FAX 763-577-0323

M300MKII AMPLIFIER

PARTS LIST

2-17-89

2/17/89  
Pg. 01 of FEE

PARTS LIST

PRODUCT: M300MKII

NOTES:

Schematic Symbol	Quantity	ARC Part#	Description
BRIDGE RECTIFIER			
BR 1	1	30502300	UK1048 BRIDGE RECTIFIER
CAPACITORS			
C 1, 1A, 19, 19A	4	53150202	CAP. 150 PF 2 1/2% 630V PPM
C 3, 17, 18, 22, 22A, 25, 25A, 25B, 25C, 25D	16	53100406	CAP. .01 MFD +/- 10% 630 V
C 25E, 25F, 25G, 25H, 25I, 30			
C 4, 38	2	53100606	CAP. 1 MFD +/- 10% 250V
C 15, 16	2	53470509	CAP. .47 MFD +/- 10% 450V
C 20, 20A	2	50390800	CAP. 390 MFD 250V
C 21, 21A	2	53200603	CAP. 2 MFD +/- 10% 250V
C 23, 23A, 23B, 23C, 23D, 23E	6	50800601	CAP. 800MF 450V GRAY
C 24, 24A, 24B, 24C, 31, 37, 40	7	53200602	CAP. 2 MFD +/- 10% 450V
C 26, 48, 49, 50, 51, 52, 53	7	53100608	CAP. 1.0 MFD 1-20% 425V TYPE V
C 27, 28, 29, 33, 34, 35	6	53220507	CAP. .22 MF 10% 160V
C 32	1	50100802	CAP. 100 MFD 450V
C 35, 39, 41, 43, 44, 44A, 44B, 44C, 50A, 51A	12	53100406	CAP. .01 MFD +/- 10% 630 V
C 52A, 53A,			
C 42	1	50680800	CAP. 680 MFD 35V
C 45	1	53100303	CAP. 1000 PF +/- 10% 100V
C 46	1	53220509	CAP. .22 MF +/- 10% 400 V
C 47	1	53560103	CAP. 56 PFD +/- 2% 630V DPM
DIODES			
D 1, 2, 10, 11, 13	5	30500400	1N4005 GENERAL INSTRUMENT
D 2, 3, 4, 5	4	30503310	EDAL #M4G5
D 6, 7, 8, 9, 21	5	30502200	1N4006
D 14, 15, 16, 17, 18, 19, 20	7	30500910	FAIRCHILD 1N9168
FUSES			
F 1, 2	2	23002500	M300 FUSEHOLDER
F 1	1	34500703	FUSE, MDX7
F 2	1	34500102	FUSE, BUSSMAN AGC 1/4 250V
F 3, 4	4	23002400	FUSE CLIP
F 3, 4	2	34500202	FUSE, AGC 1/2
CONNECTORS			
J 1	1	23201501	GOLD PHONO JK., W/RO.BND.SP11
PANEL INDICATOR			
LE 1, 3, 4	3	34300102	LED, COLLAR & RETAINING RING
LE 2	1	34300200	YELLOW L.E.D.
FANS			
R 1, 2	2	64000210	(PAPST) 4800M FANS
TRANSISTORS			



NOTES:

Schematic Symbol	Quantity	ARC Part#	Description
Q 1	1	30006504	FET, WHITE YELLOW
Q 2,5,6	3	30006725	FET, ORANGE RED GREEN
Q 3,4	2	30006527	FET, WHITE RED VIOLET
Q 7,8	2	30006403	FET, BLUE ORANGE
Q 9,10	2	30006723	FET, ORANGE RED ORANGE
Q 11,12	2	30006834	FET, GREEN YELLOW -
Q 13,14,15,16	4	30005901	FET, RED BROWN
Q 17,18	2	30006910	FET, BROWN
Q 20,23,24,32	4	30002800	TRANSISTOR, 2N4401
Q 20	1	30006200	MTP 2P45
Q 21	1	30006805	FET, YELLOW GREEN
Q 25,28	2	30006822	FET, GREEN RED
Q 26	1	30007006	FET, GRAY BLUE
Q 27	1	30006000	MCR 100-6
Q 29,30	2	30007200	SCR 100U
Q 31,33	2	30003100	TRANSIST., 2N5088, 2N5209, 2N5210
Q 34	1	30007102	FET, YELLOW RED

RESISTORS

R 1	1	42100314	RES. 1K 1% MK-5 50PPM
R 2,31,32,172	4	42274403	RES. 27.4K 1% MK-3 50PPM
R 2A	1	42150403	RES. 15K 1% MK-3 50PPM
R 3	1	42118403	RES. 11.8K 1% MK-3 50PPM
R 3A	1	42178403	RES. 17.8K 1% MK-3 50PPM
R 4	1	42127403	RES. 12.7K 1% MK-3 50PPM
R 5	1	42665303	RES. 6.65K 1% MK-3 50PPM
R 5A	1	42681303	RES. 6.81K 1% MK-3 50PPM
R 8,12	2	42127503	RES. 127K 1% MK-3 50PPM
R 9,29,30	3	42150203	RES. 150 OHM 1% MK-3 50PPM
R 10,174	2	42215403	RES. 21.5K 1% MK-3 50PPM
R 11,47,48,97,149,150,160,161,179	9	42100505	RES. 100 1% MK-8 50PPM
R 11A,25,26,56,58,60,62,63,65,67,69	17	42100303	RES. 1K 1% MK-3 50PPM
R 121-124,127,128			
R 12A,151,162	3	42499303	RES. 4.99K 1% MK-3 50PPM
R 13	1	42392303	RES. 3.92K 1% MK-3 50PPM
R 33,34,195	3	42511303	RES. 5.11K 1% MK-3 50PPM
R 35,36	2	42825405	RES. 82.5K 1% MK-8 50PPM
R 37,38	2	42681203	RES. 681 OHM 1% MK-3 50PPM
R 37A,38A,121A,122A	4	42237303	RES. 2.37K 1% MK-350PPM
R 39,40	2	42150405	RES. 15K 1% MK-8 50PPM
R 41,42	2	42215414	RES. 21.5K 1% MK-5 50PPM
R 43,44	2	42475503	RES. 475K 1% MK-3 50PPM
R 45,46,51,52,180	5	42243513	RES. 243K 1% MK-4 50PPM
R 49,50,144	3	42150514	RES. 150K 1% MK-5 1W 50PPM
R 53,88	2	42200303	RES. 2K MK-3 1% 50PPM
R 54	1	43330400	RES. 33K 5W 1%
R 63,64,65,66,67,68,69,70,142	9	43100004	RES. 1 OHM 2W 5% BLUE LINE
R 71,72,73,74,75,76,77,78	8	43100202	RES. 100 OHM 2W 5%
R 79,80	2	42182203	RES. 182 OHM 1% MK-3 50PPM
R 81,82	2	43100005	RES. 0.1 OHM 5W 1%
R 84	1	43500100	RES. 50 OHM +/-5% 4 1/2W
R 85,87,90,91	4	42750203	RES. 750 OHM 1% MK-3 50PPM
R 86	1	42255403	RES. 25.5K 1% MK-3 50PPM

## PARTS LIST

As of FEB

PRODUCT: M300MKII

NOTES:

Schematic Symbol	Quantity	ARC Part#	Description
R 89	1	42237403	RES. 23.7K 1% MK-3 50PPM
R 92, 164	2	42280513	RES. 280K 1% MK-4 50PPM
R 93, 175, 186, 188, 194	5	42100403	RES. 10K +/- 1% MK-3 50PPM
R 94, 152	2	42750303	RES. 7.5K 1% MK-3 50PPM
R 95, 153, 153A, 168, 189	5	42348513	RES. 348K 1% MK-4 50PPM
R 96	1	42100703	RES. 10 MEG 1% MK-3 50PPM
R 113	1	42100603	RES. 1 MEG 1% MK-3 50PPM
R 133, 134	2	42237203	RES. 237 OHM 1% MK-3 50PPM
R 139, 140	2	42598303	RES. 6.98K 1% MK-3 PPM
R 141	1	43100105	RES. 10 OHM 2W 5% W.W.
R 145, 156	2	41270505	RES. 270K +/- 5% 2W CARBON COMP
R 147, 158	2	46100201	RES. POWER OX. 100 OHM 5% 3W
R 148, 159	2	42392403	RES. 39.2K 1% MK-3 50PPM
R 154, 165	2	42332203	RES. 332 OHM 1% MK-3 50PPM
R 155, 166	2	43100002	RES. 1 OHM 2W 5% W.W.
R 157	1	42301503	RES. 301K 1% MK-3 50PPM
R 163	1	42130403	RES. 13K 1% MK-3 50PPM
R 167	2	42590403	RES. 59K 1% MK-3 50PPM
R 169, 196	2	42100103	RES. 10 OHM 1% MK-3 50PPM
R 169, 169A, 191	5	42511313	RES. 5.11K 1% MK-4 50PPM
R 170, 171	2	42150503	RES. 150K 1% MK-3 50PPM
R 172A	1	42562503	RES. 562K 1% MK-3 50PPM
R 173, 192	2	42100503	RES. 100K +/- 1% MK-3 50PPM
R 176	1	42499203	RES. 499 OHM 1% MK-3 50PPM
R 177, 177A	2	42150303	RES. 1.50K 1% MK-3 50PPM
R 178	1	42300514	RES. 300K 1% MK-5 50PPM
R 181, 181A	2	43500300	RES. 6K +/- 3% 5W W.W.
R 182, 184	2	43220100	RES. 22 OHM +/- 5% 2W W.W.
R 183, 183A, 185, 185A	4	42150103	RES. 15 OHM 1% MK-3 50PPM
R 187	1	42110203	RES. 110 OHM +/- 1% MK-3 50PPM
R 190	1	43750100	RES. 75 OHM +/- 5% 5W W.W.
R 193	1	42562513	RES. 562K 1% MK-4 50PPM
CONTROLS			
RV 1,2	2	45100424	10K TRIM POT
RELAYS			
RY 1	1	64100600	RELAY, 24V
RY 2	1	64101300	RELAY, 24V 10A PC MNT.
SWITCHES			
SW 1,2,3	3	24101300	TOGGLE SWITCH, MONO AMP.
SW 4	1	24002000	SWITCH, 5 POS. ROTARY
TRANSFORMERS			
T 1	1	60007501	XFR. C150 /M300 POWER REV.C
T 2	1	60007400	XFR. M300 /C150 OP REV.D
THERMISTORS			
TH 1,2,3,4	4	47000300	THERMISTOR 30 OHM +/- 20%

PRODUCT: M300MKII

PARTS LIST

As of FEB

NOTES:

Schematic Symbol	Quantity	ARC Part#	Description
INTEGRATED CIRCUITS			
U 1,2	2	31002200	MC 34071 P MOTOROLA
U 3	1	31001900	TL071CP
VOLTAGE REGULATOR			
VR 1	1	31002000	070/D115/D250 MC7815CT
ZENER DIODES			
ZD 3,8,18,29,30,31,32	7	30500300	1N 4740A
ZD 4,9	2	30504200	1N5535A
ZD 5,6,10,11	4	31000703	LM329DZ
ZD 7,12	2	30503500	1N5359 B
ZD 13,23,27	3	30503600	TZB 250A TRANSIENT SUPPRESSOR
ZD 14,15	2	30502900	1N5374
ZD 16	1	30502700	1N4742-A
ZD 17	1	30504300	1N5352A
ZD 19,20	2	30502100	1N5234B
ZD 21,22,24,26	4	30504400	1N 5240B
ZD 25	1	30504600	1N5530B COOL
ZD 28	1	30503800	1N5274B