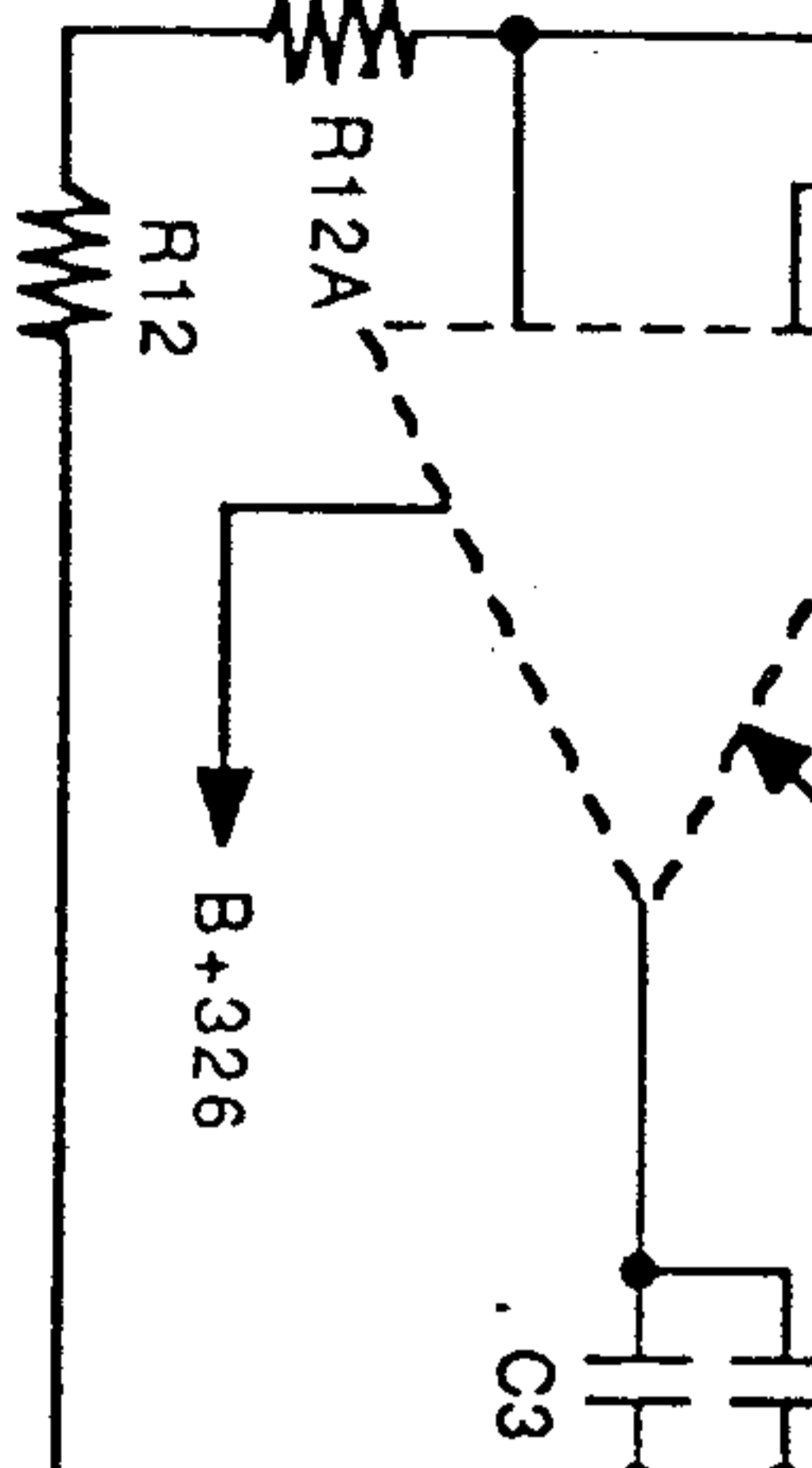


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AUDIO RESEARCH CORPORATION
 CLASSIC 150 AMPLIFIER
 INPUT CIRCUITRY - Page 1 of 6

SEE PAGE 2 FOR PHASE INVERTER CIRCUITRY



-310

-310

B+326

B+326

B+326

B+326

B+326

B+326

B+326

B+326

B+250

B+250

NFB (-)

NFB (+)

To LED Circuit

To Bootstrap B+330

To Bootstrap B+330

(From Q18)

(From Q17)

(-) .45

(+) .45

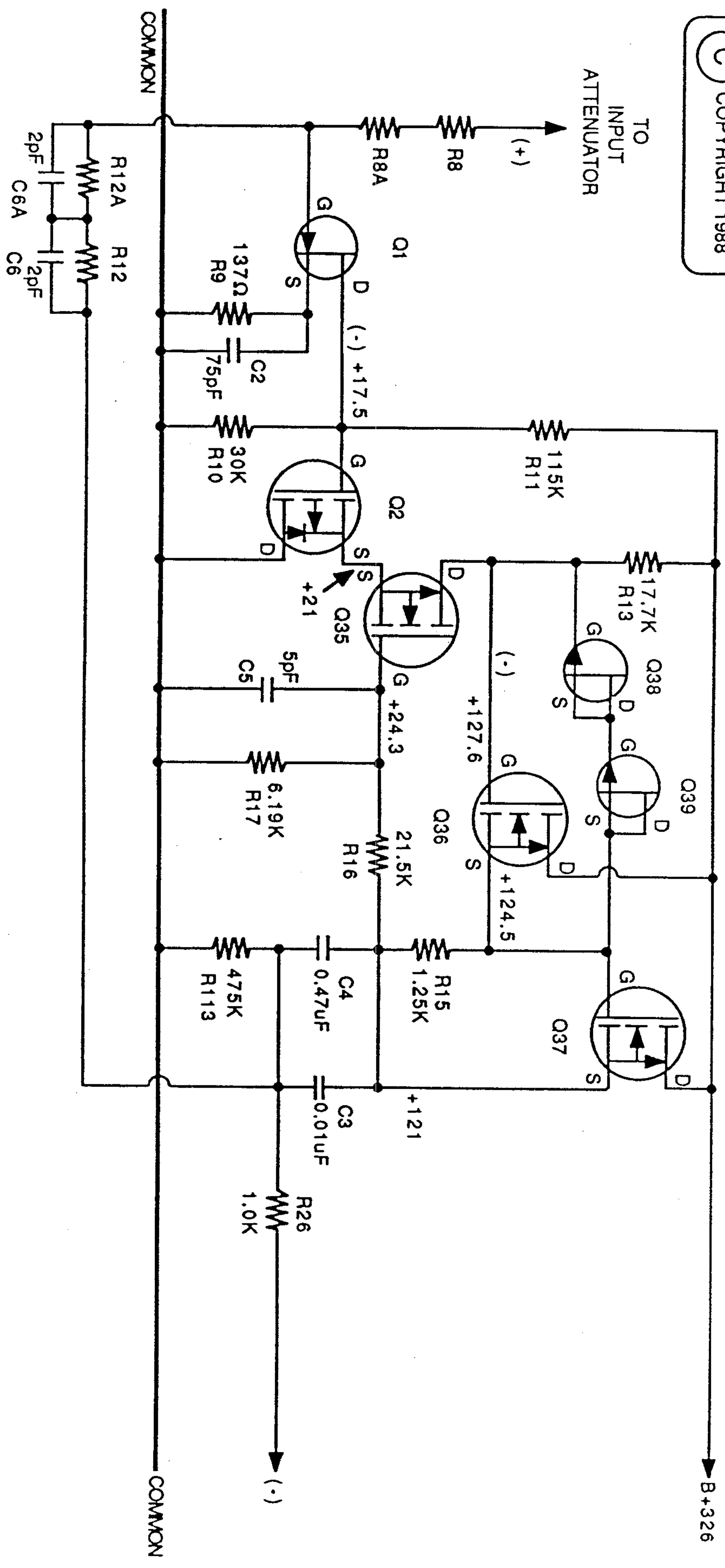
(-) .45

(+) .45

(-) .45

(+) .45

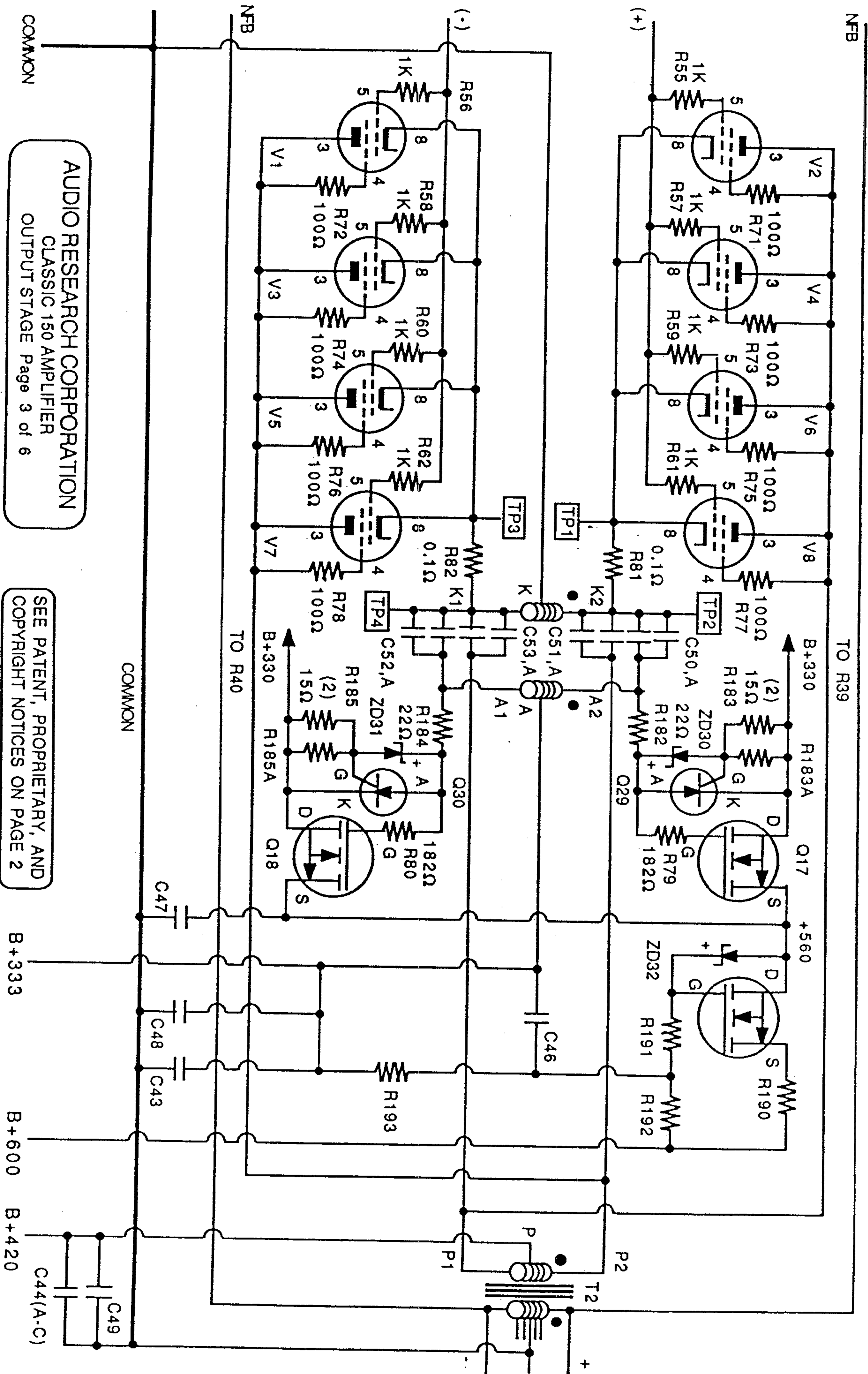
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CLASSIC 150 AMPLIFIER
PHASE INVERTER CIRCUITRY
Page 2 of 6

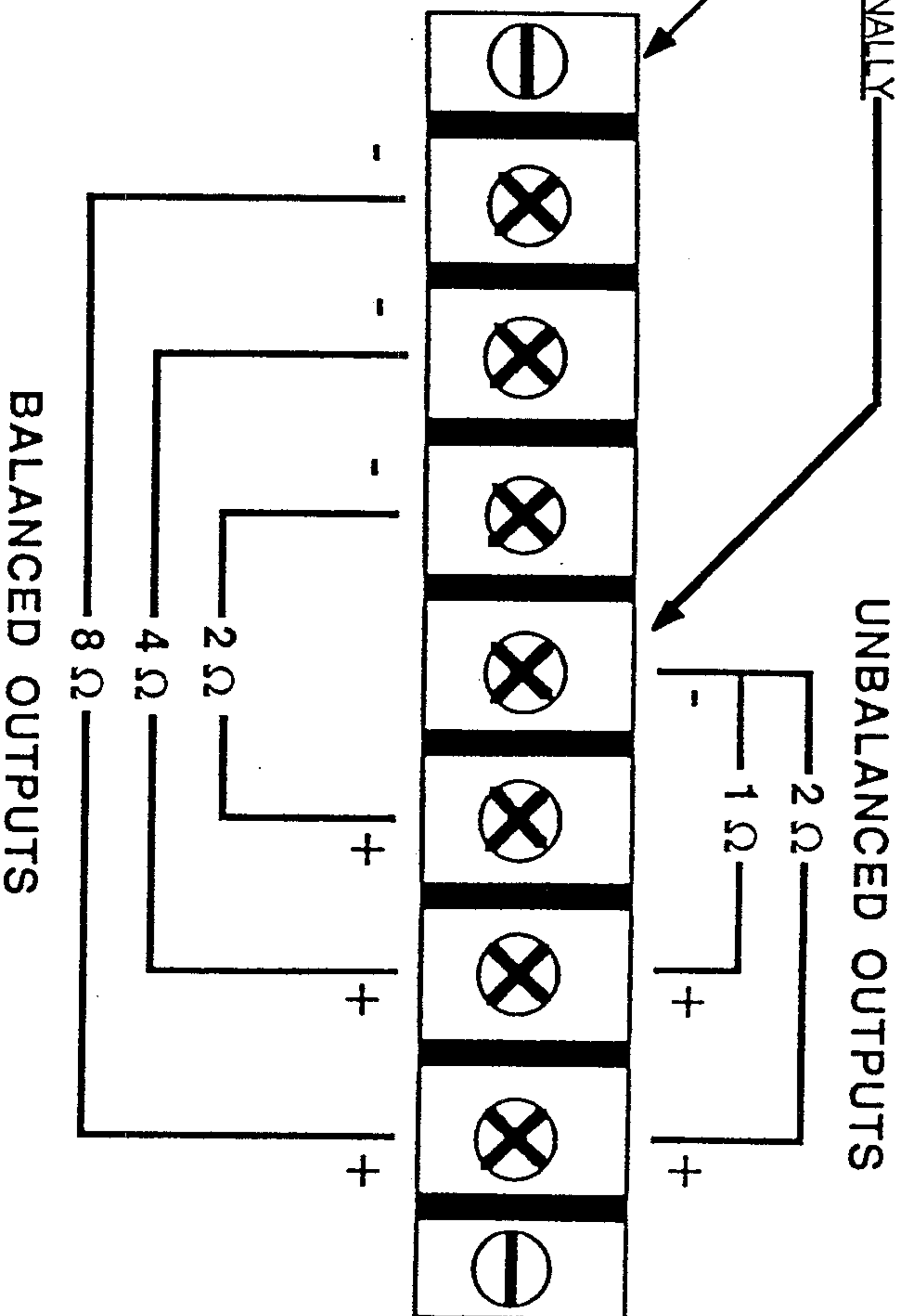
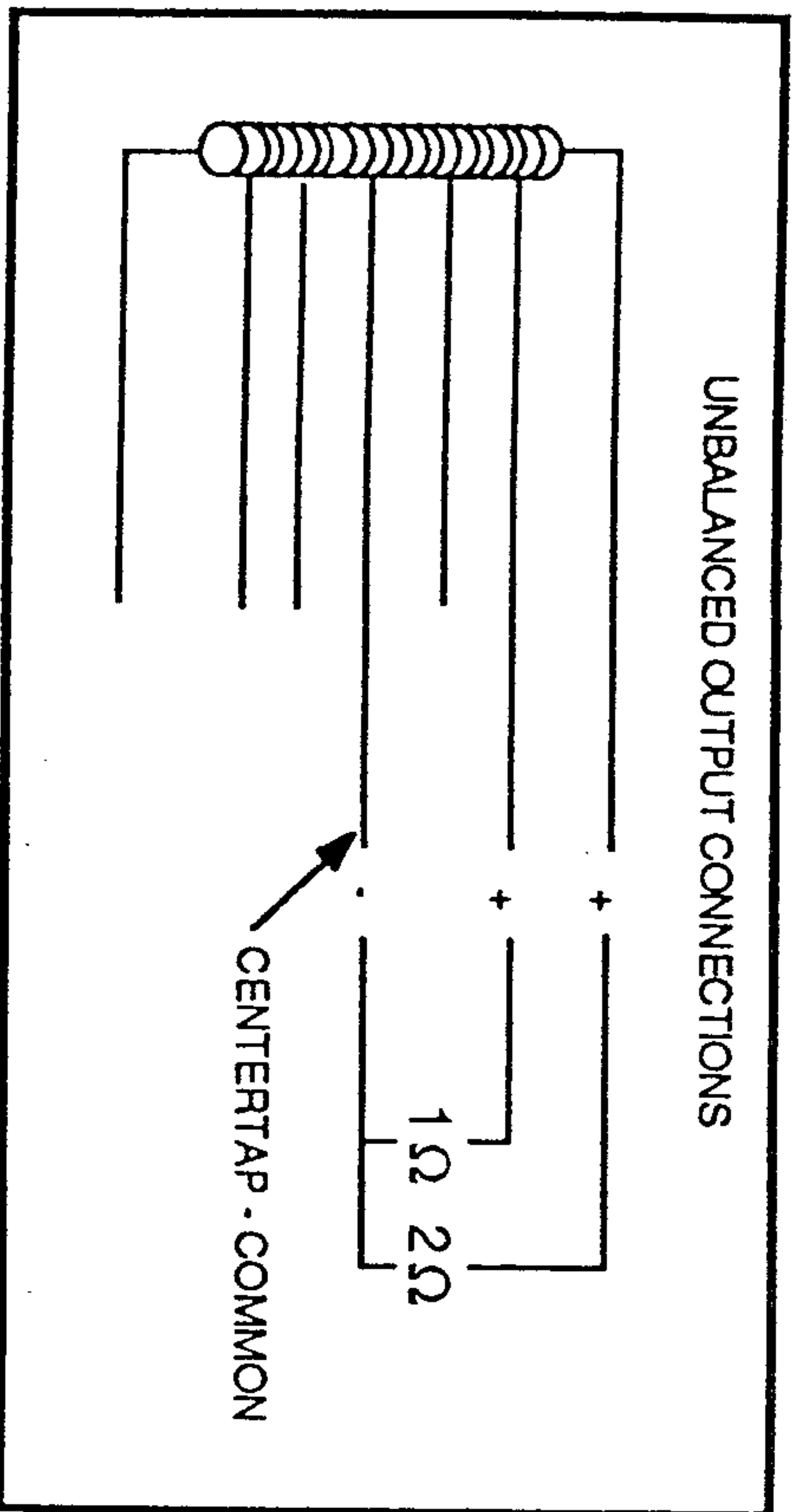
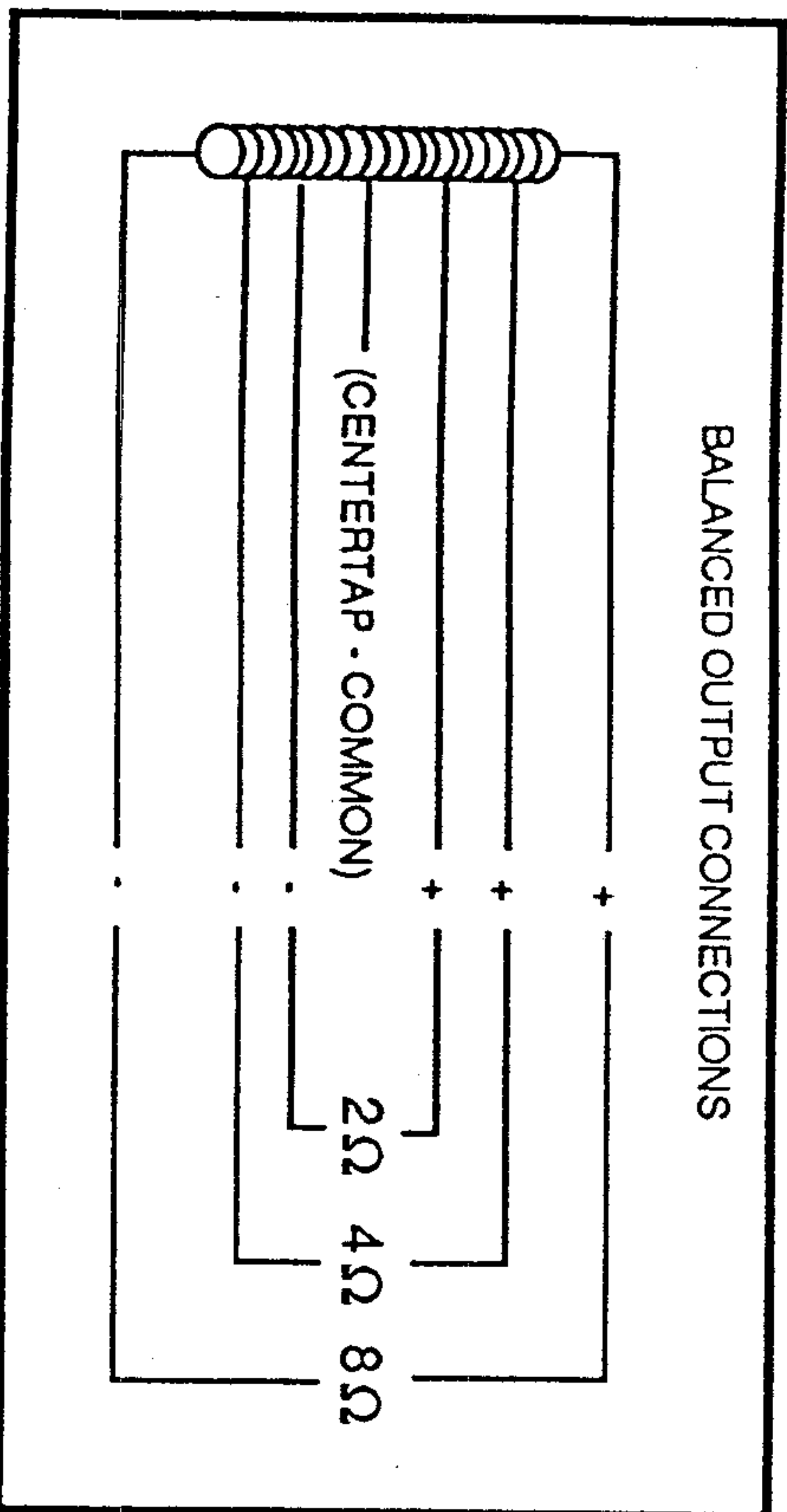
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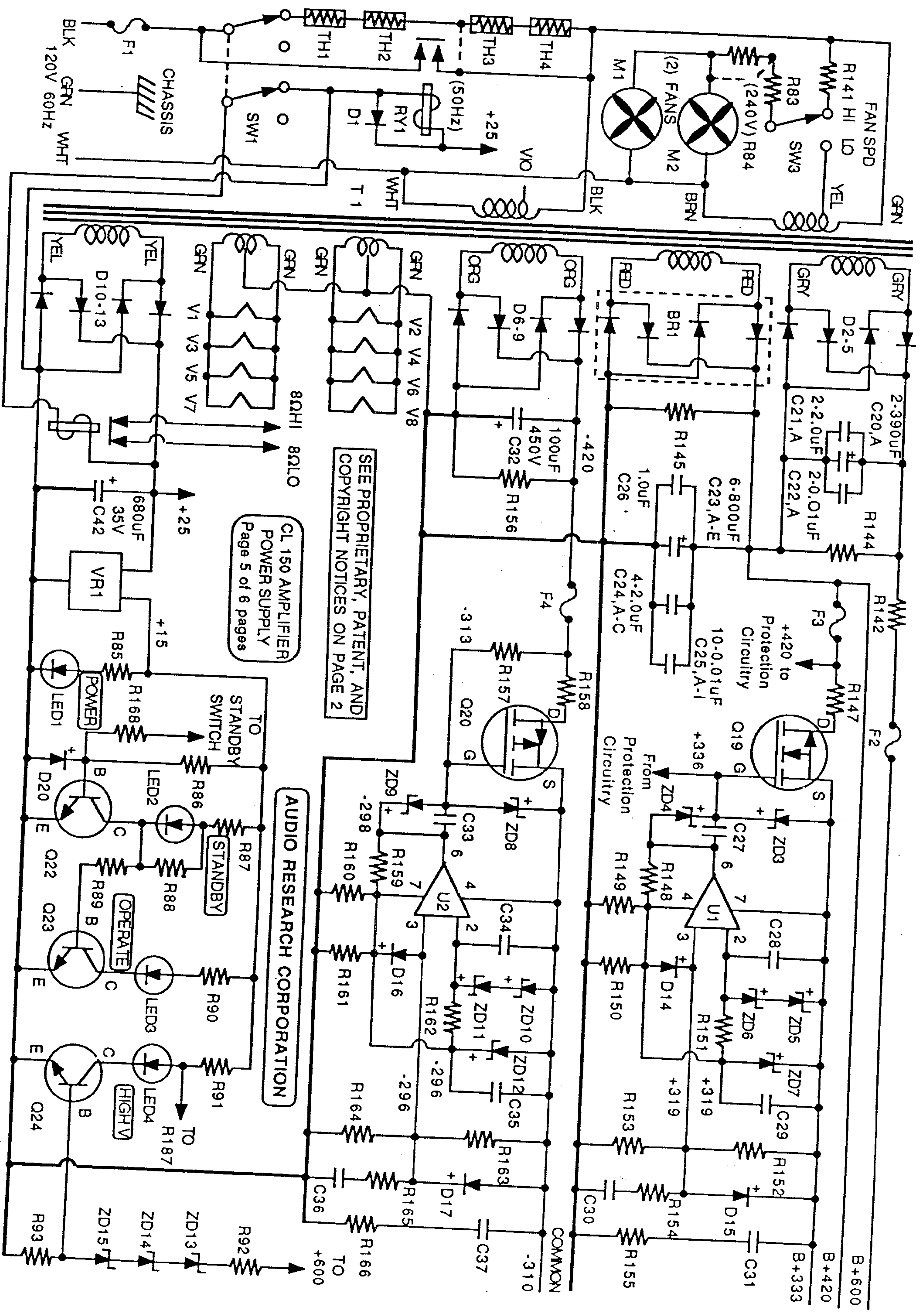
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 OUTPUT STAGE Page 3 of 6

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CAUTION NOTE: CENTER-TAP IS COMMON AND GROUNDED INTERNALLY
 OUTPUT TERMINAL STRIP LOCATED ON REAR CHASSIS APRON



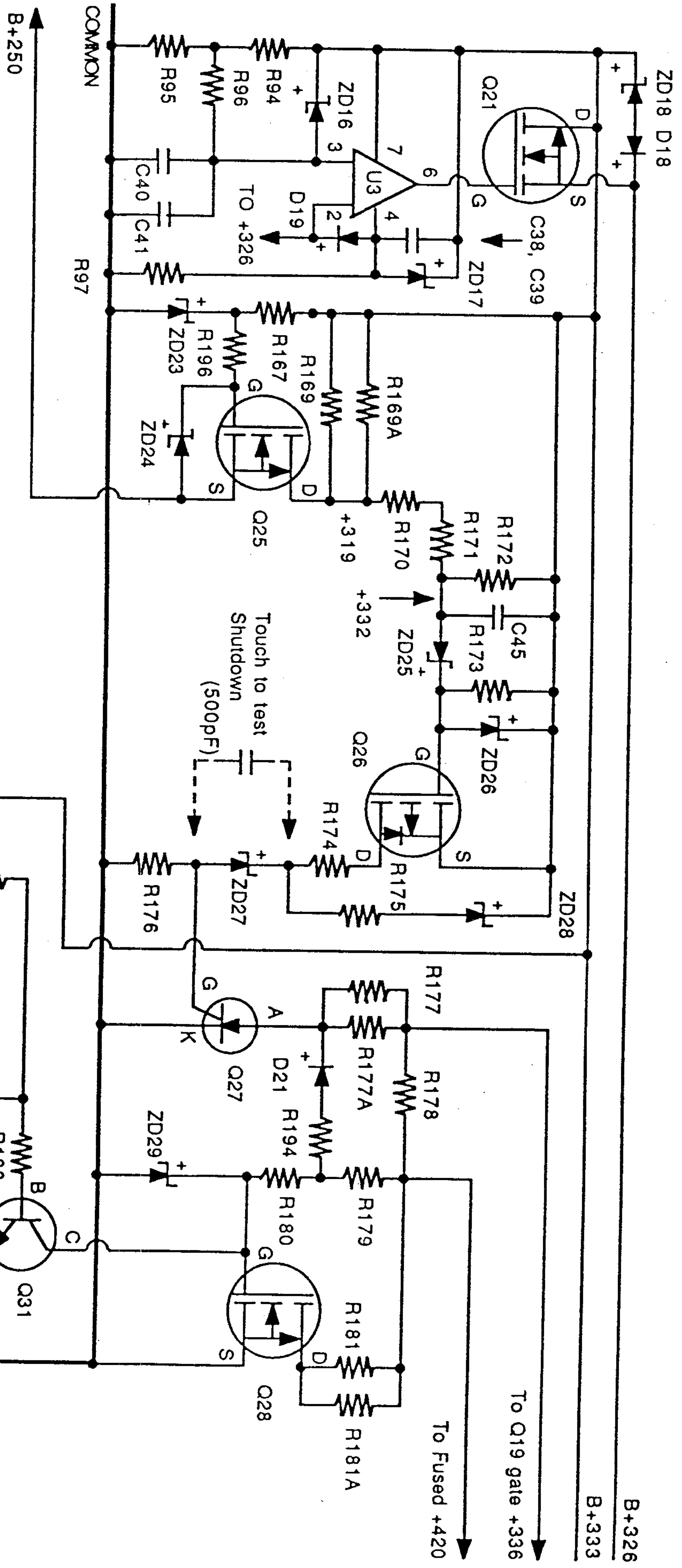
(+ and - signs indicate positive and negative polarity (phase))



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CL 150 AMPLIFIER
POWER SUPPLY
Page 5 of 6 pages

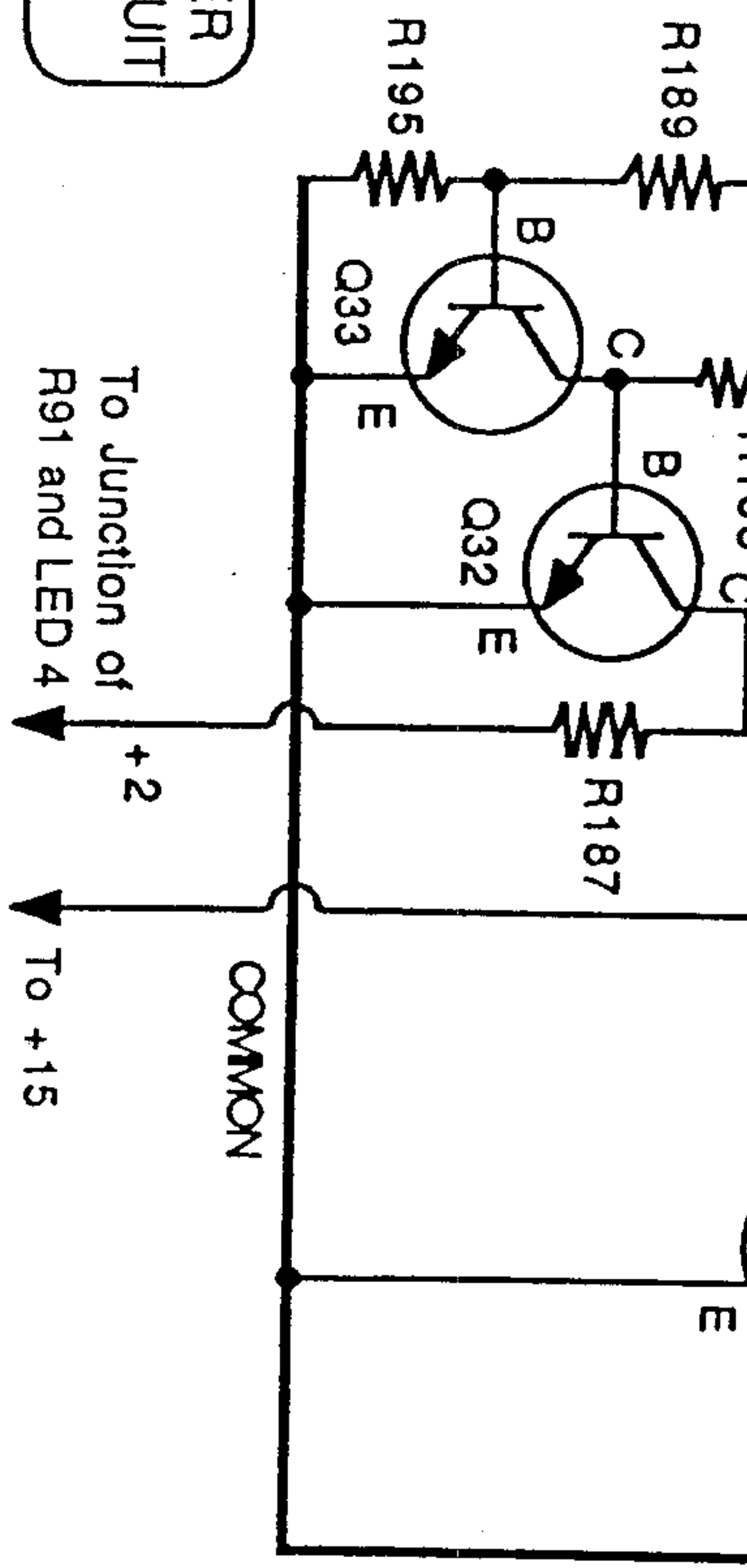
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CL 150 AMPLIFIER
"TUBE SAVER" CIRCUIT
Page 6 of 6 pages



PARTS LIST

2/17/89
As of FEE

PRODUCT: CL150

CL150

NOTES:

| Schematic Symbol | Quantity | ARC Part# | Description |
|---|----------|-----------|----------------------------------|
| BRIDGE RECTIFIER | | | |
| BR 1 | 1 | 30502300 | VK1048 BRIDGE RECTIFIER |
| CAPACITORS | | | |
| C 1, 1A, 2, 2A, 19, 19A | 6 | 53150202 | CAP. 150 PF 2 1/2% 630V PPN |
| C 3, 17, 18, 22, 22A, 25, 25A, 25B, 25C, 25D | 16 | 53100406 | CAP. .01 MFD +/- 10% 630 U |
| C 25E, 25F, 25G, 25H, 25I, 30 | | | |
| C 4 | 1 | 53470510 | CAP. .47 MFD 425V 1AR |
| C 5 | 1 | 53500001 | CAP. 5 PFD +/-PF 630V DPN |
| C 6, 6A | 2 | 53200005 | CAP. 2 PFD STYRENE |
| 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 | 50800801 | 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 U |
| C 27, 28, 29, 33, 34, 35 | 6 | 53220507 | CAP. .22 MF 10% 160V |
| C 32 | 1 | 50100802 | CAP. 100 MFD 450V |
| C 36, 39, 41, 43, 44, 44A, 44B, 44C, 50A, 51A | 12 | 53100406 | CAP. .01 MFD +/- 10% 630 U |
| C 52A, 53A | | | |
| C 38 | 1 | 53100606 | CAP. 1 MFD +/- 10% 250V |
| 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 U |
| C 54, 54A, 55, 55B | 4 | 53100101 | CAP. 10 PF +/- 1 PF 630V PPN |
| DIODES | | | |
| D 1, 10, 11, 12, 13 | 5 | 30500400 | 1N4005 GENERAL INSTRUMENT |
| D 2, 3, 4, 5 | 4 | 30503310 | EDAL #M465 |
| 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 | 3 | 34500703 | FUSE, MDX7 |
| F 2 | 1 | 34500102 | FUSE, BUSSMAN AGC 1/4 250V |
| F 3, 4 | 4 | 23002400 | FUSE CLIP |
| F 3, 4 | 5 | 34500202 | FUSE, AGC 1/2 |
| CONNECTORS | | | |
| J 1 | 1 | 23201501 | GOLD PHONO JK., W/RD. BND. SP 11 |
| PANEL INDICATOR | | | |
| LE 1, 3, 4 | 3 | 34300102 | LED, COLLAR & RETAINING RING |
| LE 2 | 1 | 34300200 | YELLOW L.E.D. |
| FANS | | | |

PARTS LIST

As of FEB

PRODUCT: CL150

CL150

NOTES:

| Schematic Symbol | Quantity | ARC Part# | Description |
|---|----------|-----------|-----------------------------------|
| M12 | 2 | 54000210 | (PAPST) 4800M FANS |
| TRANSISTORS | | | |
| Q 1 | 1 | 30005526 | FET, WHITE RED BLUE |
| Q 2, 26 | 2 | 30007006 | FET, GRAY BLUE |
| Q 3, 4 | 2 | 30005527 | FET, WHITE RED VIOLET |
| Q 5, 6 | 2 | 30006725 | FET, ORANGE RED GREEN |
| Q 7, 8 | 2 | 30005403 | FET, BLUE ORANGE |
| Q 9, 10, 35, 36 | 4 | 30006723 | FET, ORANGE RED ORANGE |
| Q 11, 12 | 2 | 30005834 | FET, GREEN YELLOW |
| Q 13, 14, 15, 16, 38, 39 | 6 | 30005901 | FET, RED BROWN |
| Q 17, 18 | 2 | 30005910 | 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 27 | 1 | 30005000 | MCR 100-6 |
| Q 29, 30 | 2 | 30007200 | SCR 100V |
| Q 31, 33 | 2 | 30003100 | TRANSIST., 2N5088, 2N5209, 2N5210 |
| Q 34 | 1 | 30007102 | FET, YELLOW RED |
| Q 37 | 1 | 30006704 | FET, ORANGE YELLOW |
| 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, 10, 10A | 3 | 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, 8A, 12, 12A | 4 | 42698403 | RES. 69.8K 1% MK-3 50PPM |
| R 9, 9A, 9B | 3 | 43200200 | RES. 200 OHM +/- 1% 2W W.W. |
| R 11, 13, 13A, 16A, 47, 47, 97, 149, 150, 160 | 12 | 42100505 | RES. 100 1% MK-8 50PPM |
| R 161, 179 | | | |
| R 11A | 1 | 42200414 | RES. 20K 1% MK-5 50PPM |
| R 13B, 16 | 2 | 42274405 | RES. 27.4K 1% MK-8 50PPM |
| R 15, 15A, 15B, 15C | 4 | 42182303 | RES. 1.82K 1% MK-3 50PPM |
| R 15D, 15E, 53, 88 | 4 | 42200303 | RES. 2K MK-3 1% 50PPM |
| R 17 | 1 | 42619314 | RES. 6.19K 1% MK-5 50PPM |
| R 25, 26, 56, 58, 60, 62, 63, 65, 67, 69, 121-124 | 16 | 42100303 | RES. 1K 1% MK-3 50PPM |
| R 127, 128 | | | |
| R 29, 30 | 2 | 42150203 | RES. 150 OHM 1% MK-3 50PPM |
| R 33, 34, 169, 169A, 191 | 5 | 42511313 | RES. 5.11K 1% MK-4 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 | 42237203 | 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, 113 | 3 | 42475503 | RES. 475K 1% MK-3 50PPM |
| R 45, 45A, 45B, 46, 46A, 46B, 51, 52, 180 | 9 | 42243513 | RES. 243K 1% MK-4 50PPM |
| R 49, 50, 144 | 3 | 42150514 | RES. 150K 1% MK-5 1W 50PPM |
| R 54 | 1 | 43330400 | RES. 33K 5W 1% |

PARTS LIST

As of FEB

PRODUCT: CL150

CL150

NOTES:

| Schematic Symbol | Quantity | ARC Part# | Description |
|----------------------------------|----------|-----------|--------------------------------|
| 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 |
| R 89 | 1 | 42237403 | RES. 23.7K 1% MK-3 50PPM |
| R 92, 154 | 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 115B | 1 | 42499403 | RES. 49.9K 1% MK-3 50PPM |
| R 133, 134 | 2 | 42237203 | RES. 237 OHM 1% MK-3 50PPM |
| R 137C | 1 | 42511203 | RES. 511 OHM 1% MK-3 50PPM |
| R 137D | 1 | 42432103 | RES. 43.2 OHM 1% MK-3 50PPM |
| R 139, 140 | 2 | 42698303 | RES. 6.98K 1% MK-3 PPM |
| R 141 | 1 | 43100105 | RES. 10 OHM 2W 5% W.W. |
| R 142 | 1 | 43100004 | RES. 1 OHM 2W 5% BLUE LINE |
| 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 151, 162 | 2 | 42499303 | RES. 4.99K 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 | 1 | 42590403 | RES. 59K 1% MK-3 50PPM |
| R 169, 195 | 2 | 42100103 | RES. 10 OHM 1% MK-3 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 | 4 | 42100503 | RES. 100K +/-1% MK-3 50PPM |
| R 174 | 1 | 42215403 | RES. 21.5K 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 | 5 | 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 |
| R 195 | 1 | 42511303 | RES. 5.11K 1% MK-3 50PPM |

CONTROLS

| | | | |
|---------|---|----------|--------------|
| RV 1, 2 | 2 | 45100424 | 10K TRIM POT |
|---------|---|----------|--------------|

RELAYS

| | | | |
|------|---|----------|------------------------|
| RY 1 | 1 | 64100600 | RELAY, 24V |
| RY 2 | 1 | 64401300 | RELAY, 24V 10A FC INT. |

SWITCHES

PARTS LIST

As of FEE

PRODUCT: CL150

CL150

NOTES:

| Schematic Symbol | Quantity | ARC Part# | Description |
|-----------------------|----------|-----------|-------------------------------|
| SW1,2,3 | 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% |
| INTEGRATED CIRCUITS | | | |
| U 1,2 | 2 | 31002200 | MC 34071 P MOTOROLA |
| U 3 | 1 | 31001900 | TL071CP |
| VOLTAGE REGULATOR | | | |
| VR 1 | 1 | 31002000 | D70/D115/D250 MC7815CT |
| ZENER DIODES | | | |
| ZD 3,8,18,29,30,31,32 | 8 | 30500300 | 1N 4740A |
| ZD 4,9 | 2 | 30504200 | 1N5535A |
| ZD 5,6,10,11 | 4 | 31000703 | LM3290Z |
| 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 0001 |
| ZD 28 | 1 | 30503800 | 1N5274B |