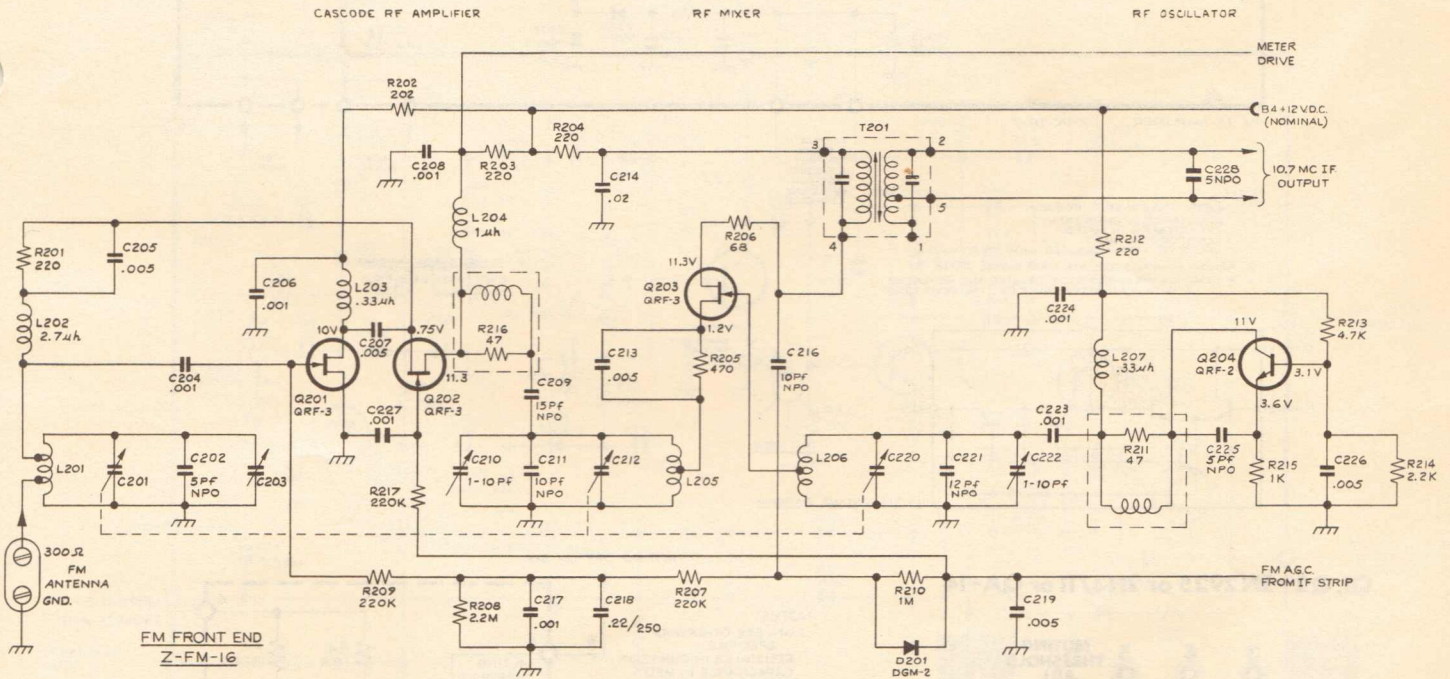
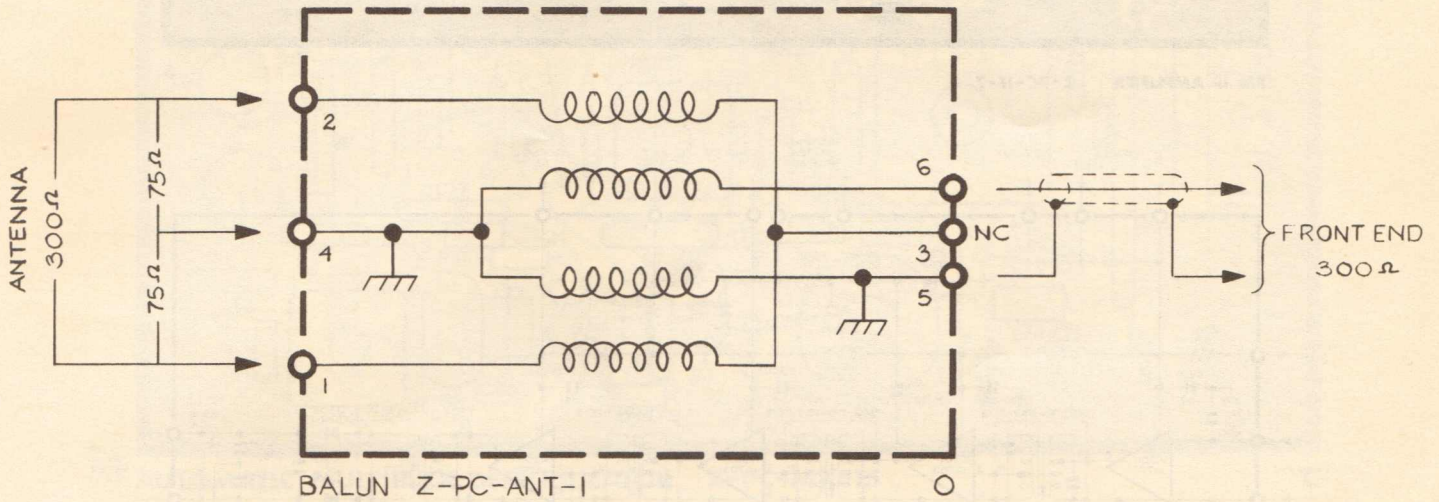




SERVICE BULLETIN
FOR
MODEL 312D



HIGHEST SERIES NO.
R217
C226
L207
D201
T201
Q204

NOTES:

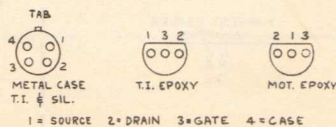
1. UNLESS OTHERWISE SPECIFIED: RESISTANCE IN OHMS $\pm 10\%$ CAPACITANCE IN MFD'S, RESISTORS $\frac{1}{4}$ WATT.
2. INDICATED SUPPLY VOLTAGES MAY VARY ABOVE OR BELOW NOMINAL VOLTAGE SHOWN FROM MODEL TO MODEL.
3. D.C. VOLTAGES $\pm 1\%$ MEASURED WITH 20K Ω /V VOM.
4. ARROW-HEADS INDICATE MAIN SIGNAL PATH.

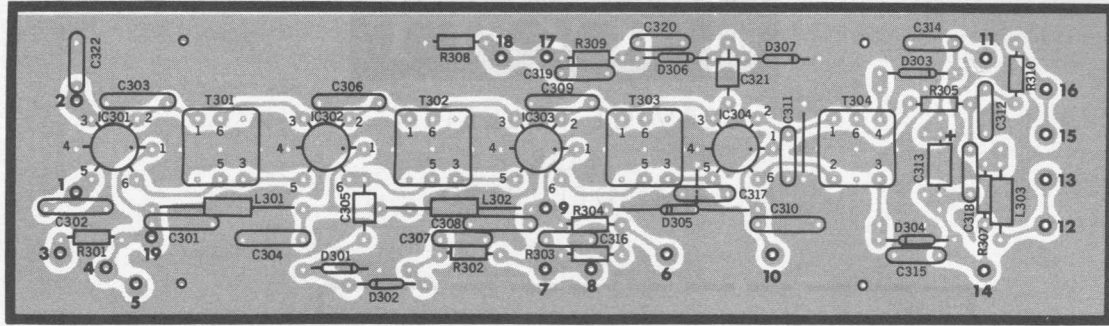
NOTES:

Q201, Q202, Q203 TRANSISTORS ARE SELECTED BY GROUP.

| GROUP | Q 201 | Q 202 | Q 203 | APPROX. RELATIVE GAIN |
|-------|--------|--------|--------|-----------------------|
| 1 | YELLOW | GREEN | ORANGE | |
| 2 | GREEN | BLUE | YELLOW | FREQUENTLY HIGHEST |
| 3 | ORANGE | YELLOW | RED | FREQUENTLY LOWEST |

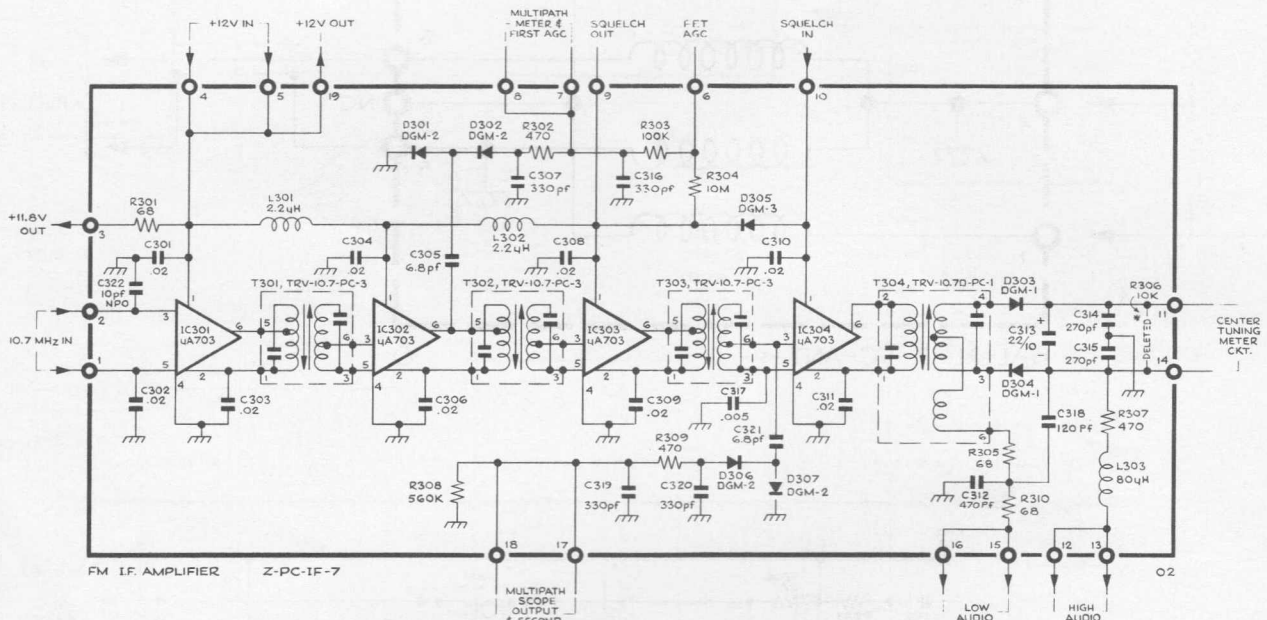
FET BASE DIAGRAMS





FM IF AMPLIFIER Z-PC-IF-7

3

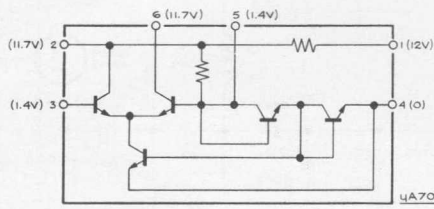


FM IF AMPLIFIER Z-PC-IF-7

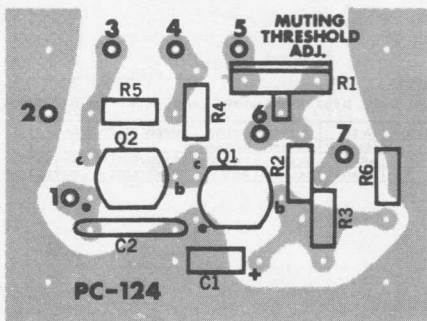
- NOTES:
- UNLESS OTHERWISE SPECIFIED:
RESISTANCE IN OHMS ±10%
CAPACITANCE IN MFD'S
RESISTORS 1/4 WATT
VOLTS DC ±15% MEASURED WITH 20KΩ/V.V.O.M.
 - ARROW — HEADS INDICATE MAIN SIGNAL PATH.
 - * R306, 10K, 1/2 W RESISTOR DELETED AND REPLACED WITH TWO EXTERNAL 5.2K, 1% RESISTORS.

HIGHEST SERIES NUMBERS

| | | | |
|-------|-------|------|------|
| C 322 | D307 | R310 | L303 |
| T304 | IC304 | | |



Q1, Q2 - 2N2925 or 2N3711 or QA-14



INTERSTATION Z-PC-NS-4 NOISE MUTING

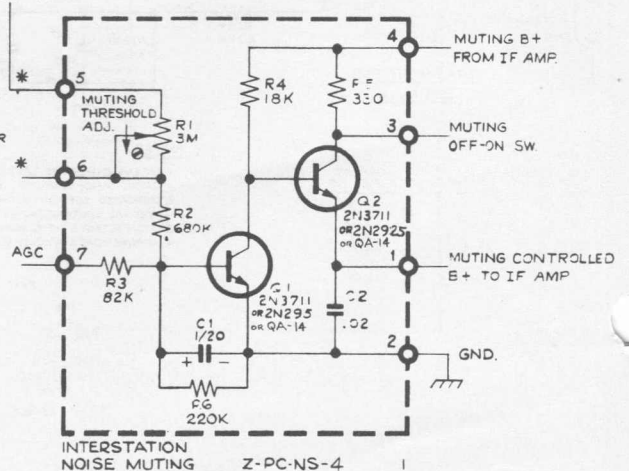
1

MUTING OFF-ON SW

- NOTES:
- UNLESS OTHERWISE SPECIFIED:
RESISTANCE IN OHMS ±10%
CAPACITANCE IN MFD'S
RESISTORS 1/4 WATT
 - ARROW ON POTENTIOMETER INDICATES CW ROTATION
 - * FOR USE WITH EXTERNAL MUTING CONTROL WHEN R1 IS NOT ON BOARD.

HIGHEST SERIES NUMBERS

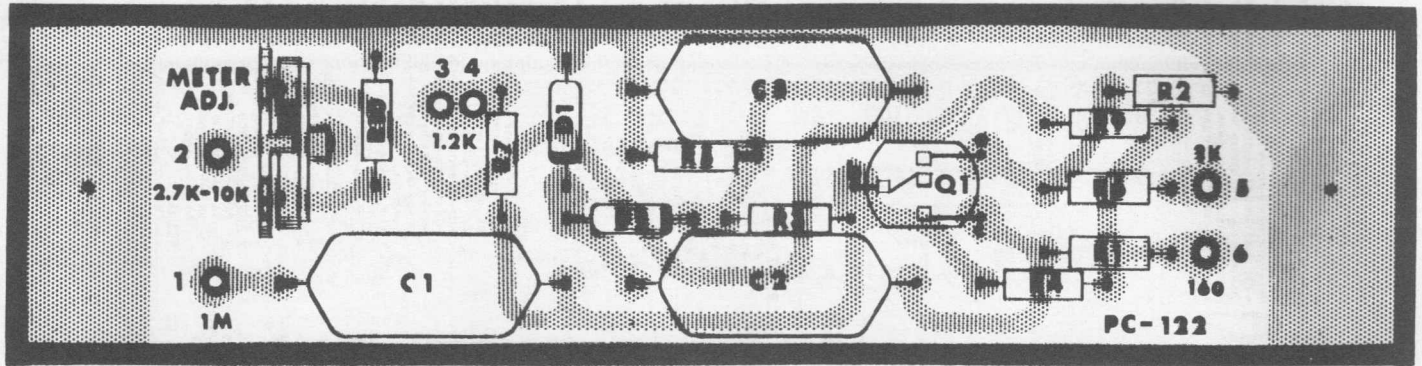
| |
|-----|
| C 2 |
| R 6 |
| Q 2 |



INTERSTATION NOISE MUTING Z-PC-NS-4

1

Q1 - 2N2925 or 2N3711 (QA-15)



MULTIPATH INDICATOR Z-PC-MI-2

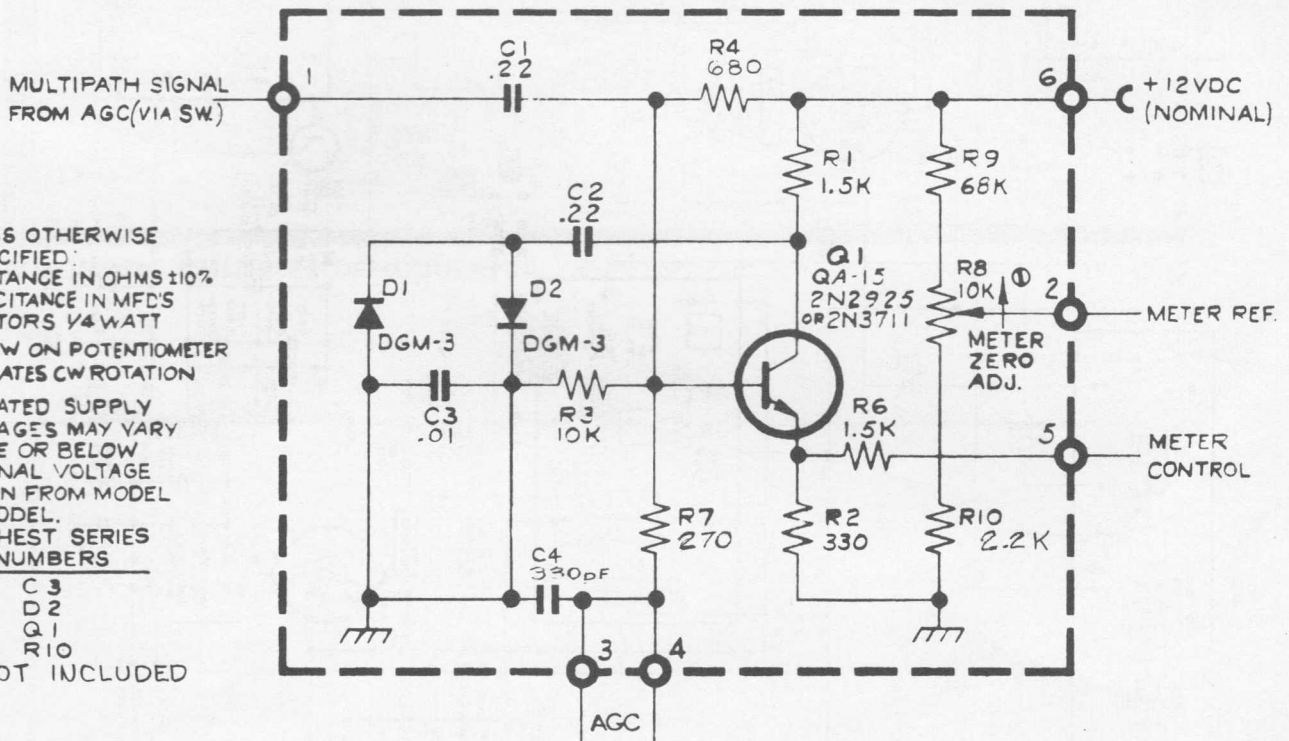
00

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
RESISTANCE IN OHMS $\pm 10\%$
CAPACITANCE IN MFD'S
RESISTORS $\frac{1}{4}$ WATT
2. ARROW ON POTENTIOMETER INDICATES CW ROTATION
3. INDICATED SUPPLY VOLTAGES MAY VARY ABOVE OR BELOW NOMINAL VOLTAGE SHOWN FROM MODEL TO MODEL.
HIGHEST SERIES NUMBERS

- C3
- D2
- R1
- R10

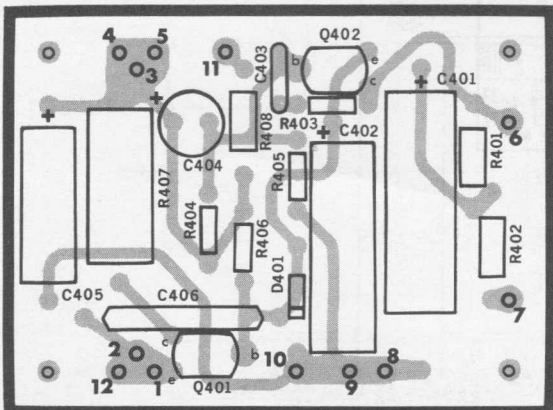
R5 NOT INCLUDED



MULTIPATH INDICATOR

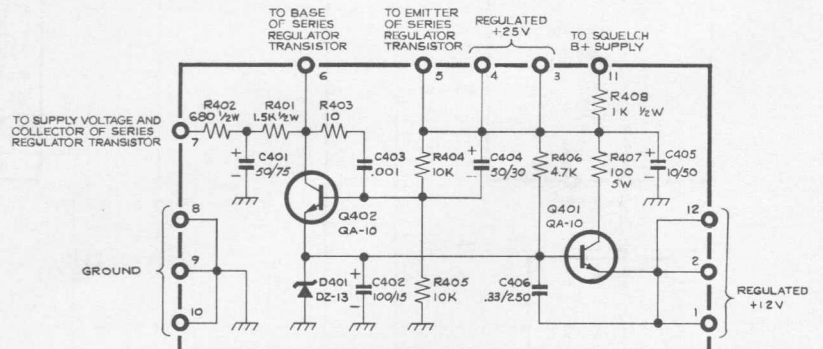
Z-PC-MI-2 01

Q401-Q402 - QA-10



POWER SUPPLY

Z-PC-PS-11 0



POWER SUPPLY Z-PC-PS-10

NOTES:

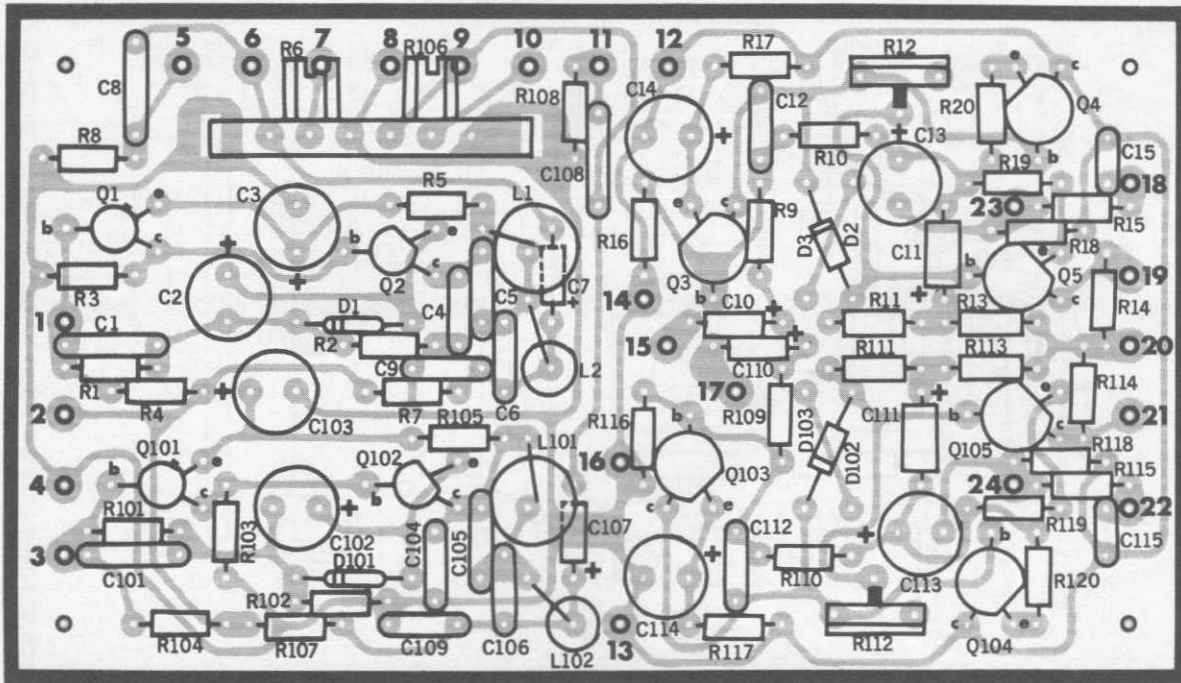
1. RESISTANCE IN OHMS $\pm 10\%$.
- RESISTORS $\frac{1}{4}$ WATT.
- CAPACITANCE IN MFD'S.

Q1, Q101 - S1990 (FAIRCHILD)

Q4, Q104 - 2N3644

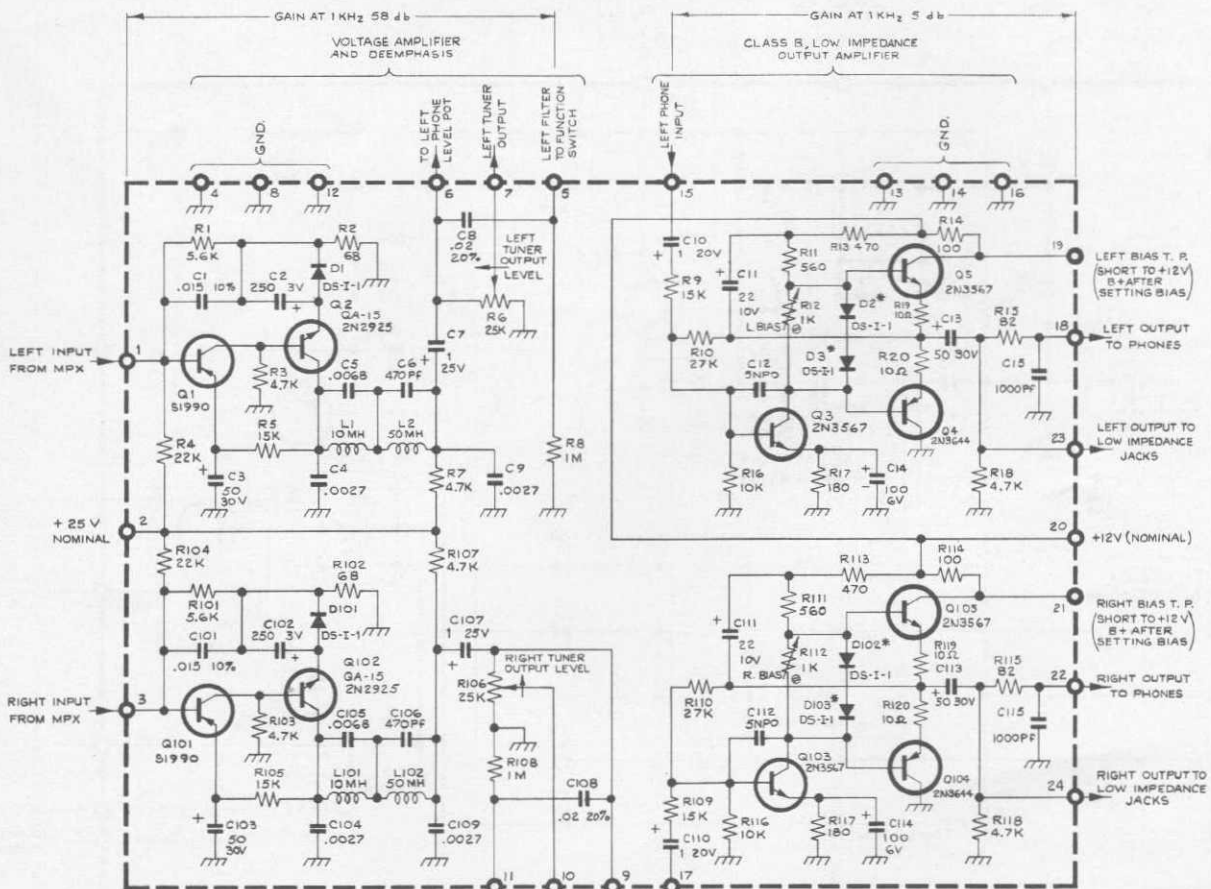
Q2, Q102 - 2N2925, QA-15

Q3, Q103, Q5, Q105 - 2N3567



OUTPUT Z-PC-O-4

1

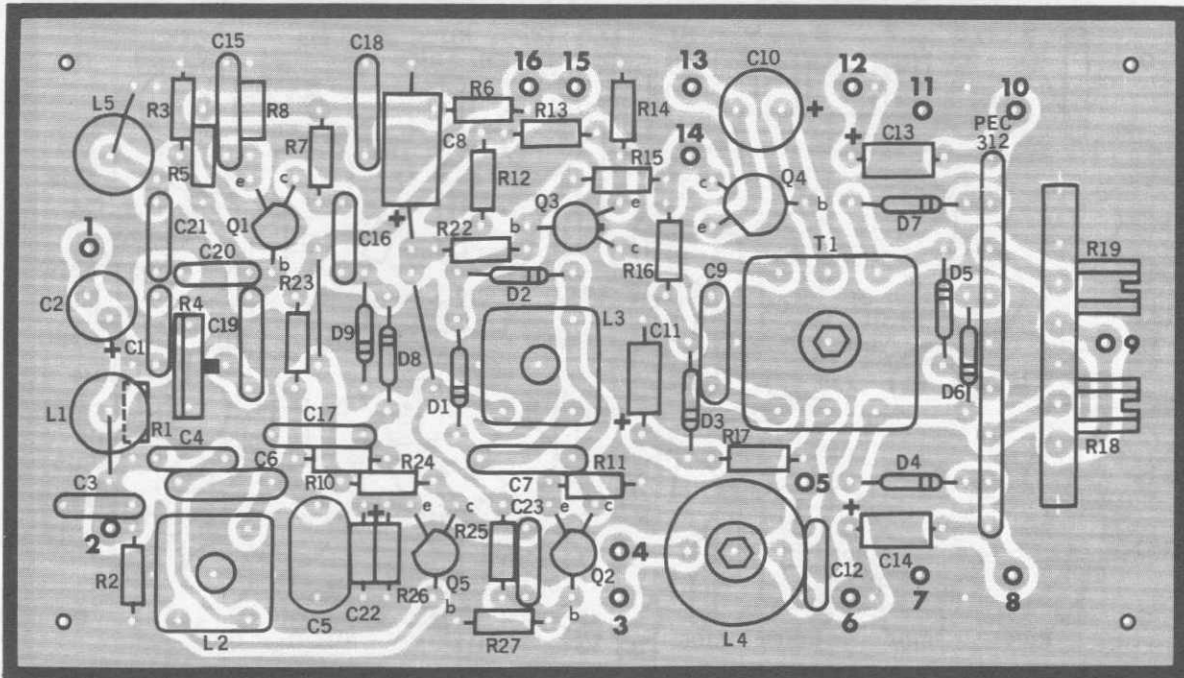


NOTES

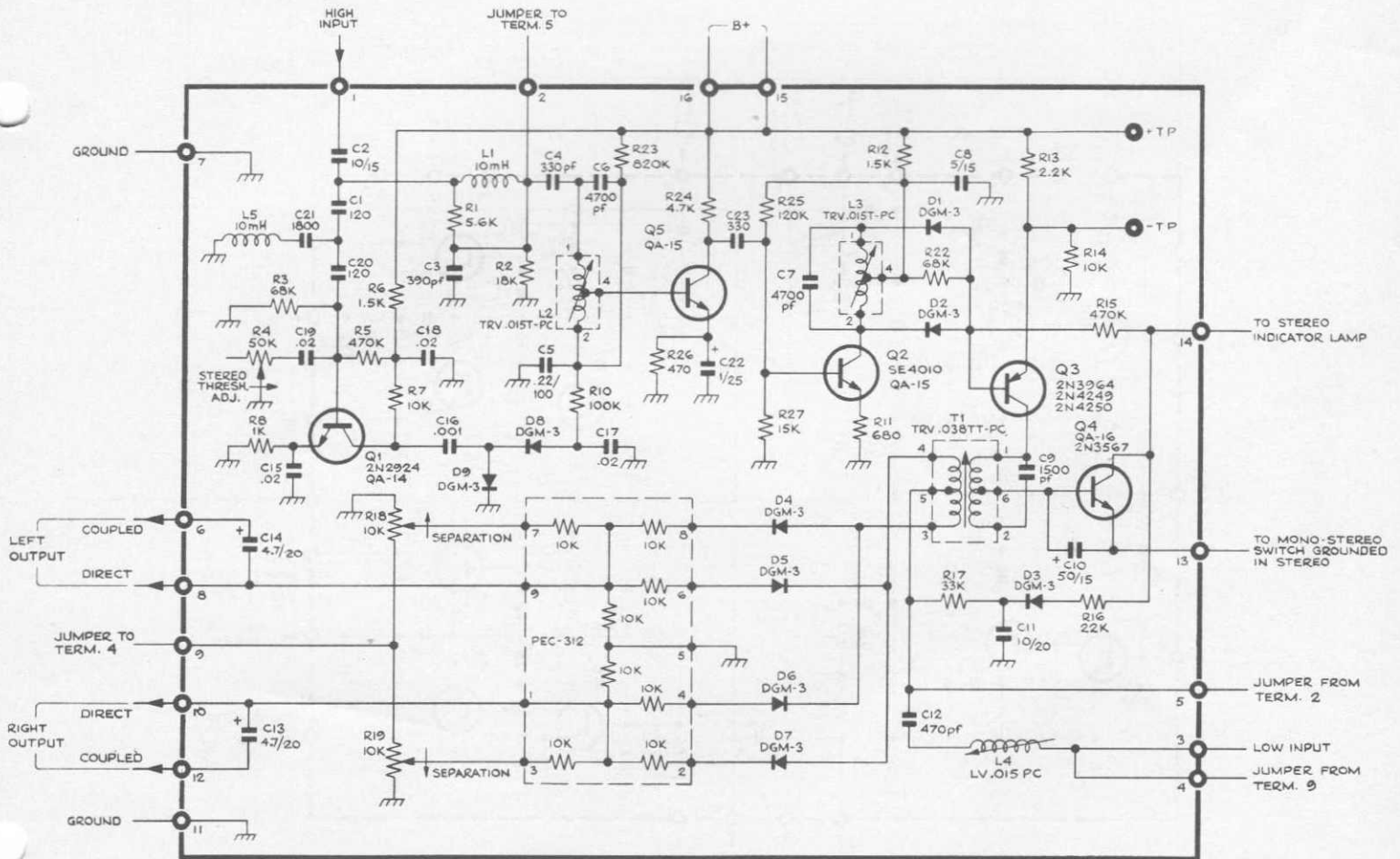
1. UNLESS OTHERWISE SPECIFIED: CAPACITANCE IN NFD'S, RESISTANCE IN OHMS $\pm 10\%$, RESISTORS $\frac{1}{4}$ WATT.
2. INDICATED SUPPLY VOLTAGES MAY VARY ABOVE OR BELOW NOMINAL VOLTAGE SHOWN FROM MODEL TO MODEL.
3. D.C. VOLTAGES $\pm 15\%$ MEASURED WITH 20K Ω /V VOM.
4. ARROW HEADS INDICATE MAIN SIGNAL PATH.

* EACH PAIR OF DS-1-1 DIODES, D2, D3 AND D102, D103 MAY BE REPLACED BY ONE DST-2

Q1- 2N2924 or QA-14 Q2-SE4010 or QA-15
Q3-2N3964, 2N4249 or 2N4250
Q4- QA-16 or 2N3567 Q5-QA-15

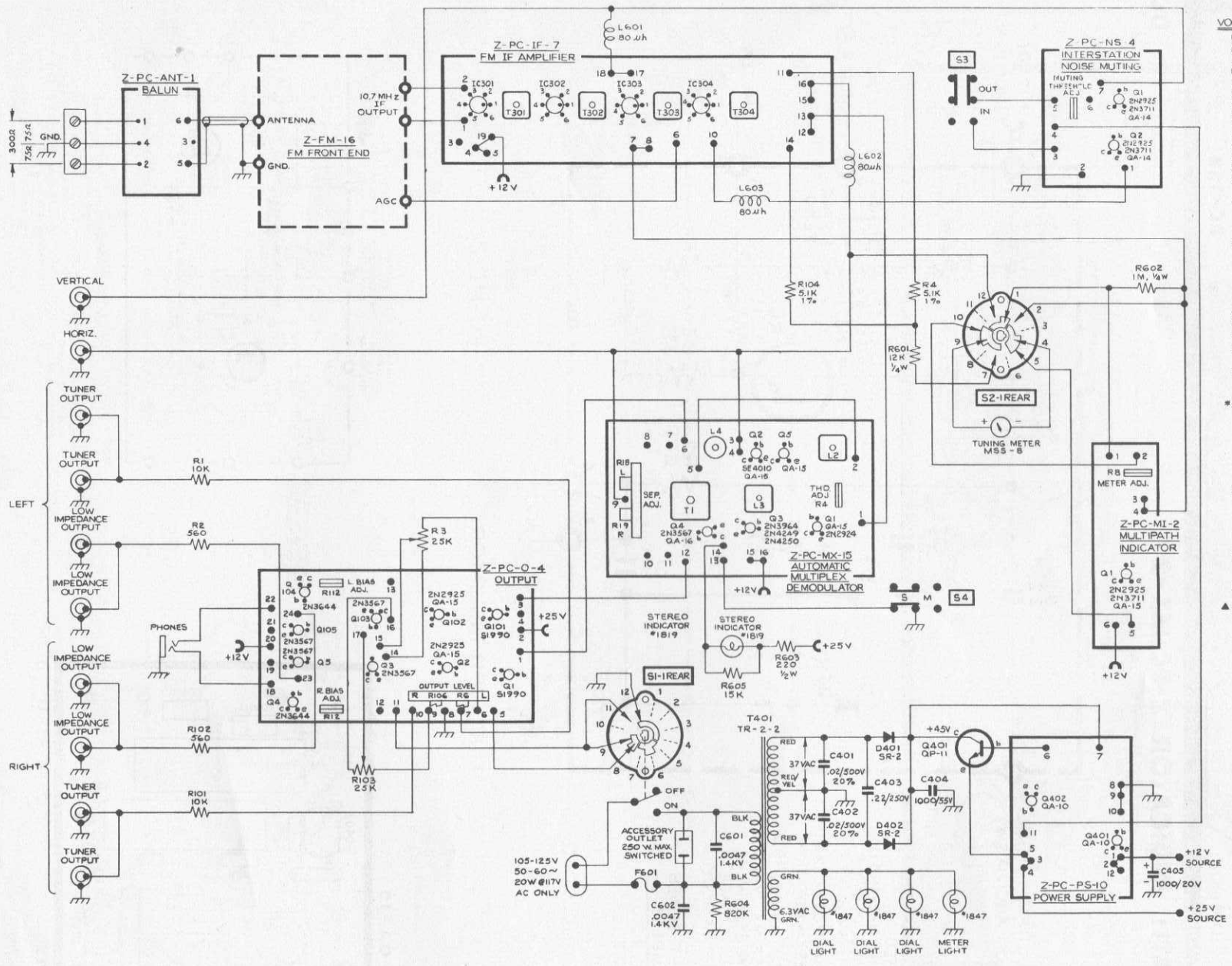


AUTOMATIC MULTIPLEX DEMODULATOR Z-PC-MX-15



AUTOMATIC MULTIPLEX DEMODULATOR Z-PC-MX-15

- NOTES:
1. UNLESS OTHERWISE SPECIFIED: RESISTANCE IN OHMS $\pm 10\%$, CAPACITANCE IN MFD'S, RESISTORS $1/4$ WATT.
 2. ARROWS ON POTENTIOMETERS INDICATE CW ROTATION.



VOLTAGES
UNLESS OTHERWISE SPECIFIED: ALL VOLTAGES POSITIVE DC±5% MEASURED WITH 20KΩ/V VOM AND I17 VAC LINE 300 Ω LOAD ON ANTENNA TERMINALS, TUNER OF STATION AND FUNCTION SWITCH IN NORMAL POSITION, SELECTOR SWITCH IN MONO MUTING OFF, METER SWITCH IN SIGNAL STRENGTH POSITION.

* VOLTAGES MEASURED UNDER SAME CONDITIONS AS ABOVE, ONLY MODE SWITCH IN MONO WITH "MUTING ON".

** VOLTAGES MEASURED UNDER SAME CONDITIONS AS ABOVE, ONLY MODE SWITCH IN "STEREO" AND "MUTING OFF" WITH STEREO SIGNAL FED INTO TUNER.

▲ VOLTAGES MEASURED UNDER SAME CONDITIONS AS ABOVE, ONLY WITH DC VTVM.

| Z-FM-16 | GATE | DRAIN | SOURCE |
|---------|-------|--------|--------|
| Q201 | 2.2 V | 10 V | 0 V |
| Q202 | 1 V | .75 V | 11.3 V |
| Q203 | 0 V | 11.3 V | 1.2 V |
| Q204 | e | b | c |
| | 3.6 V | 3.1 V | 11.0 V |

Z-PC-IF-7

| LEAD* | 1 | 2 | 3 | 4 | 5 | 6 |
|-------|------|--------|-------|-----|-------|--------|
| IC301 | 12 V | 11.6 V | 1.6 V | 0 V | 1.6 V | 11.5 V |
| IC302 | 12 V | 11.6 V | 1.6 V | 0 V | 1.6 V | 11.5 V |
| IC303 | 12 V | 11.6 V | 1.6 V | 0 V | 1.6 V | 11.5 V |
| IC304 | 11 V | 10.5 V | 1.5 V | 0 V | 1.5 V | 11 V |
| IC304 | .9 V | 1 V | 1 V | 0 V | 1 V | 11 V |

Z-PC-NS-4

| Q1 | a | b | c |
|----|-------|-------|------|
| Q1 | 1.1 V | .35 V | 27 V |
| Q2 | 0 V | .65 V | .3 V |

Z-PC-MI-2

| Q1 | Q2 | Q3 | Q4 | Q5 |
|----|-------|--------|--------|----|
| Q1 | 1.5 V | 2.1 V | 4.6 V | |
| Q2 | .5 V | 1.1 V | 6 V | |
| Q3 | .5 V | 1.1 V | 10.6 V | |
| Q4 | .7 V | 8 V | 9 V | |
| Q5 | .5 V | .7 V | 3 V | |
| Q1 | .5 V | 1.1 V | 7 V | |
| Q2 | .5 V | 1.1 V | 6 V | |
| Q3 | .3 V | 10.7 V | 9.8 V | |
| Q4 | .7 V | 0 V | 27 V | |
| Q5 | .5 V | 1.1 V | 10.6 V | |

Z-PC-O-4

| Q1, Q101 | Q2 | Q3, Q103 | Q4, Q104 | Q5, Q105 |
|----------|-------|----------|----------|----------|
| Q1, Q101 | 6.5 V | 6 V | 1.5 V | |
| Q2 | .9 V | 1.5 V | 11.4 V | |
| Q3, Q103 | .8 V | 1.5 V | 6.5 V | |
| Q4, Q104 | 7 V | 6.5 V | 0 V | |
| Q5, Q105 | 7 V | 7.6 V | 12 V | |

Z-PC-PS-10

| Q401 | Q402 | | |
|------|--------|--------|------|
| Q401 | 12.5 V | 13 V | 20 V |
| Q402 | 13 V | 13.5 V | 27 V |

POWER TRANSISTOR

| Q401 | Q402 | | |
|------|------|--------|------|
| Q401 | 28 V | 27.5 V | 43 V |

▲ AGC VOLTAGE (Z-PC-IF-7)
TERM. 6 - .5V TO -1.0V
TERM. 15 - 2V TO -2.5V
1,000 μV SIGNAL FED TO ANTENNA TERMINALS WITH UNIT OPERATING.

- NOTES:**
- UNLESS OTHERWISE SPECIFIED: RESISTANCE IN OHMS ±10%. RESISTORS 1/2 WATT. CAPACITANCE IN MFD'S.
 - ROTARY SWITCHES SHOWN IN FULL CCW POSITION AS VIEWED FROM THE FRONT.
 - ARROW-HEADS INDICATE MAIN SIGNAL PATH.
 - ARROW ON POTENTIOMETER INDICATE'S CW ROTATION.
 - SI-FUNCTION SWITCH (SRW-44-11)
POSITION FUNCTION
1 OFF
2 NORMAL
3 SUB CH FILTER
4 NOISE FILTER
 - SI-METER SWITCH (SRW-33-7)
1 SIGNAL STRENGTH
2 MULTIPATH
3 CENTER TUNING
 - SWITCH FUNCTION
S1 FUNCTION
S2 METER
S3 MUTING
S4 MODE
 - FUSE F601 — .5 AMP 510-BLO

HIGHEST SERIES NUMBERS

| R4 | R104 | C405 | R605 |
|----|------|------|------|
| | | D401 | C602 |
| | | T401 | L603 |
| | | | F601 |