# SANYO

**MODEL**
**AFT-1N**

## All-transistor Radio

## *Service Manual*


## SPECIFICATIONS

**FREQUENCY RANGE**
FM ; 87 to 100 Mc/s
AM; 535 to 1605 Kc/s

**SENSITIVITY**
FM ; 10 uV at 30 dB quieting - 75 ohm input
AM; radiation sensitivity ; 180 uV/m, 10mW output

**S/N RATIO**
FM ; 60 dB at 1 mV input

**DISTORTION**
FM ; less than 2% at 100 uV input

**OUTPUT POWER**
200 mWatts undistorted

**FM DISCRIMINATOR P-P SEPARATION**
400 Kc/s

**POWER SUPPLY**
6 volts, DC (4 size C batteries) 24$\phi$ × 46mm

**TRANSISTORS**

| | | |
|---|---|---|
| 2SA76 | FM | RF. Amplifier |
| 2SA76 | FM | Mixer |
| 2SA76 | FM | Oscillator |
| 2SA93 | FM | 1st. I.F. Amplifier |
| 2SA93 | FM | 2nd. I.F. Amplifier |
| 2SA93 | FM | 3rd. I.F. Amplifier |
| 2SA93 | FM | Limiter |
| 2SB54 | FM | Matching |
| 2SA52 | AM | Convertor |
| 2SA49 | AM | 1st. I.F. Amplifier |
| 2SA53 | AM | 2nd. I.F. Amplifier |
| 2SB54 | AF | Amplifier |
| 2SB189 × 2 | | Power Amplifier (B class pushpull) |

**DIODES & THERMISTOR**

| | |
|---|---|
| 1N60 | FM Limiter |
| 1N60 × 2 | FM Detector |
| 1N60 | AM A. G. C. |
| 1N60 | AM Detector |
| D91A | Thermistor, For Temperature Compensation |

**CONTROLS**
Tuning (FM & AM)
Select (FM or AM)
Volume & Power (FM & AM)

**SPEAKER**
3.5 ″ Permanent Dynamic Speaker (90 m/m)

**ANTENNAS**
Built-in FM rod antenna, built-in AM ferrite antenna

**DIMENSIONS**

| | | |
|---|---|---|
| Width | 9-½″ | (242 m/m) |
| Depth | 2″ | ( 51 m/m) |
| Height | 4-½″ | (115 m/m) |

**WEIGHT**
Approximately 1270 grams (2.8 pounds) (without battery)

***SANYO ELECTRIC CO., LTD.***

| PART NO. | STOCK NO. | DESCRIPTION |
|---|---|---|

### TRANSISTOR

| | | |
|---|---|---|
| Tr 1 | 2SA76 | FM RF Amplifier |
| Tr 2 | 2SA76 | FM Mixer |
| Tr 3 | 2SA76 | FM Oscillator |
| Tr 4 | 2SA93 | FM 1st I. F. Amplifier |
| Tr 5 | 2SA93 | FM 2nd I. F. Amplifier |
| Tr 6 | 2SA93 | FM 3rd I. F. Amplifier |
| Tr 7 | 2SA93 | FM Limiter |
| Tr 8 | 2SB54 | FM Matching |
| Tr 9 | 2SA52 | AM Convertor |
| Tr 10 | 2SA49 | AM 1st I. F. Amplifier |
| Tr 11 | 2SA53 | AM 2nd I. F. Amplifier |
| Tr 12 | 2SB54 | AF Amplifier |
| Tr 13 | 2SB189 | Power Amplifier (B class pushpull) |
| Tr 14 | 2SB189 | Power Amplifier (B class pushpull) |

### DIODES AND THERMISTOR

| | | |
|---|---|---|
| D 1 | IN60 | FM Limiter |
| D 2, 3 | IN60 × 2 | FM Detector |
| D 4 | IN60 | AM A. G. C. |
| D 5 | IN60 | AM Detector |
| T H | D91A | Temperature Compensation |

### COILS

| | | |
|---|---|---|
| L 1, 2 | R-W2078 | FM antenna coil |
| L 3 | R-W4010a | RF Coil |
| L 4, 5 | R-W8026a | FM oscillator coil |
| L6, 7, 8 | R-W2080 | AM antenna coil |
| L 9, 10 | R-W8002 | AM oscillator coil |

### TRANSFORMERS

| | | |
|---|---|---|
| T 1 | R-W5T063 | 1st I. F. transformer FM |
| T 2, 3 | R-W5T064 | I. F. transformer 2nd and 3rd FM |
| T 4 | R-W5T065 | 4th I. F. transformer FM |
| T 5 | R-W5W001 | 5th I. F. transformer FM |
| T 6 | R-W5T008 | I. F. transformer 1st AM |
| T 7 | R-W5T009 | I. F. transformer 2nd AM |
| T 8 | R-W5T048 | I. F. transformer 3rd AM |
| T 9 | R-W6105 | Input transformer 5 K : 2K ohm |
| T 10 | R-W6106 | Output transformer 200 : 7 ohm |

| PART NO. | STOCK NO. | DESCRIPTION |
|---|---|---|

### CONTROLS

| | | |
|---|---|---|
| Cv 1, 4 | R-C1056 | Tuning capacitor |
| | R-S4121 | Slide switch |
| | R-C0012 | 4-block trimmer |
| | R-R11606a | Volume control with on-off switch |

### CABINET

| | | |
|---|---|---|
| | R-31358a | Cabinet |
| | R-31359a | Back cover |
| | R-31360 | Dial Plate |
| | R-23405 | Frame of front surface |
| | R-26264 | Panel . . . large |
| | R-26265 | Panel . . . small |
| | R-23367 | Positive terminal metal for battery |
| | R-24031b | Screw mtg. backcover to cabinet |
| | R-13004L | Lock washer for screw above |
| | R-23418 | Emblem " SANYO " |
| | R-34036 | Telescoping ant. mtg. base |
| | R-S8201 | Tuning knob |
| | R-35119 | Telescopic ant. holder |
| | R-25103 | Spring terminal for battery |
| | R-33224a | Volume control knob |
| | R-S8206 | Pointer |
| | R-11947 | Back screen |

### MISCELLANEOUS

| | | |
|---|---|---|
| | R-S2081 | Dual earphone jack |
| | R-S6075 | Earphone |
| | R-S8265 | Antenna lead with rubber cup |

Printed in Japan

# ALIGNMENT PROCEDURES

In aligning this combined AM/FM receiver, the two alignment processes are substancially independent of each other but it should be mentioned that alignment of AM section should be proceded with that of FM because of avoiding unfavourable result which may be caused by interferance between closely located parts.

## Alignment of FM section

Many excellent instruments are used to speed up and increase the efficiency of the process of aligning FM set as well as to obtain the superior performance of our product.

***Equipment required :***

An oscilloscope

A sweep marker generator for FM IF alignment or a sweep type signal generator and a marker generator.

A tuning wand

A network (as in Fig. 2)

A FM signal generator covering 87 to 100 Mc/s

A vacuum tube voltmeter

The method of connecting the apparatus for visual alignment of FM receivers is illustrated in Fig. 1. It is common that, in order to assist with the alignment, a small "pip" can be produced on the displayed curve by injecting a marker signal from an accurately calibrated signal generator to the receiver together with a sweep generator signal.

But in this case the sweep marker generator has a built-in marker generator which produces a signal of 10.7 Mc/s fixed and 10.7 Mc/s signal with the side marker signal of $\pm$200Kc/s separated from 10.7 Mc/s.

The marker signal with its output variable is injected in the sweep generator to the signal which has passed through the receiver and is picked up from the receiver.

## FM IF alignment

1. Connect the "hot" lead from the sweep marker generator through 0.01$\mu$F to FM antenna terminal and the ground lead to the earth terminal. Before this connection the dial should be set at the position of no interferance signal.

2. Connect the "Response from Receiver" cable from the generator in series with a network illustrated in Fig. 2 between test point "A" and earth.

3. Adjust the output of the sweep marker generator to a level just high enough to provide a sufficient scope pattern.

4. Adjust T1, T2, T3, T4 and the primary of T5, viewing a scope pattern, to obtain the response curve indicated as Fig. 5.

5. This adjustment is acomplished as following. First, tune T3, T4 and primary of T5, for maximum gain at the same time keeping the trace precisely centered on the 10.7Mc/s. Next adjust T1 and T2 to make the on-10.7Mc/s-centered pattern symmetrically-shaped and to obtain maximum gain at the same time locating the markers of plus and minus 200Kc/s symmetrically as to the 10.7Mc/s.
   This will complete the FM IF alignment.

6. In above procedures, the output of the sweep marker generator should be reduced to a level just high enough to provide a usable scope pattern in proportion to the gain increase of IF stages.

## FM detector alignment

1. Connect the sweep marker generator in the same way as IF alignment.

2. Connect the "Response from Receiver" cable directly to test point "B", without the network of Fig. 2, and lower lead to earth.

3. Detune the secondary of detector transformer by turning its core at maximum anticlockwise position and then you will have the scope pattern which is similar to the pattern seen in IF alignment except the reverse polarity.

4. This pattern should be symmetrical as to 10.7 Mc marker. If not symmetrical, readjust the primary of T5 a little bit for complete symmetry. When slight turn of the slug is not effective, realignment of IF stages should be necessary.

5. If the symmetric curve obtained, tune the slug of the secondary for having the 10.7 Mc marker located at the 0 level and obtaining "S"- shaped curve illustrated in Fig. 9.

6. Adjustment of detector stage is successfully completed if scope pattern as illustrated in Fig. 9, in which "S" curve and location of side markers of $\pm$200 kc are symmetrical viewed from the reference point of symmetry (10.7 mc), is obtained. In the case of unsymmetrical pattern, turn the slug of primary of T5 a little bit to make it symmetric. When slight turn of the slug is not effective, realignment of IF stages is required.

# Alignment for FM RF stages

***Preparation for alignment***

FM signal generator is used instead of a sweep marker generator and connected as in Fig. 4.

Use FM signal modurated at 400cps with deviation of ±22.5Kc/s, and the output cable from the generator should be terminated with dummy antenna of 75ohms so that output impedance seen from receiver is 75ohms. The signal developed across the dummy is applied to receiver.

Output power of receiver is comsumed with dummy load equivalent to impedance of speaker.

A desirable voltage range of vacuum tube volt meter is 1.5V because alignment conducted at a level of 50mW output power.

***FM RF alignment***

**1.** Set the volume control at position of medium volume and set the tuner dial at 87 Mc.

**2.** Set the generator frequency at 87 Mc. Adjust oscillator coil for maximum deflection of meter. If it is difficult to obtain optimum gain, slight adjustment of oscillator trimmer (Ct2) is paid.

**3.** Set the generator frequency and tuner dial at 100 Mc. Obtain maximum gain by adjustment of Osc. trimmer.

**4.** Again set tuner dial at 87 Mc and vary the generator frequency around 87 Mc to have maximum gain. When the tuning frequency is not 87 Mc, adjust Osc. coil to obtain optimum gain at 87 Mc of the generator frequency.

**5.** Repeat the entire process (steps 3 and 4) until no further adjustment is required at either end of the dial.

**6.** Set tuner dial at 108 Mc/s and vary the generator frequency around 108 Mc/s to be tuned in by the tuner. When the tuning generator frequency is not 108 Mc/s, adjust Osc. trimmer to obtain optimum gain at 108 Mc/s of generator frequency.

**7.** Repeat the entire process until no further adjustment is required at either point of the dial.

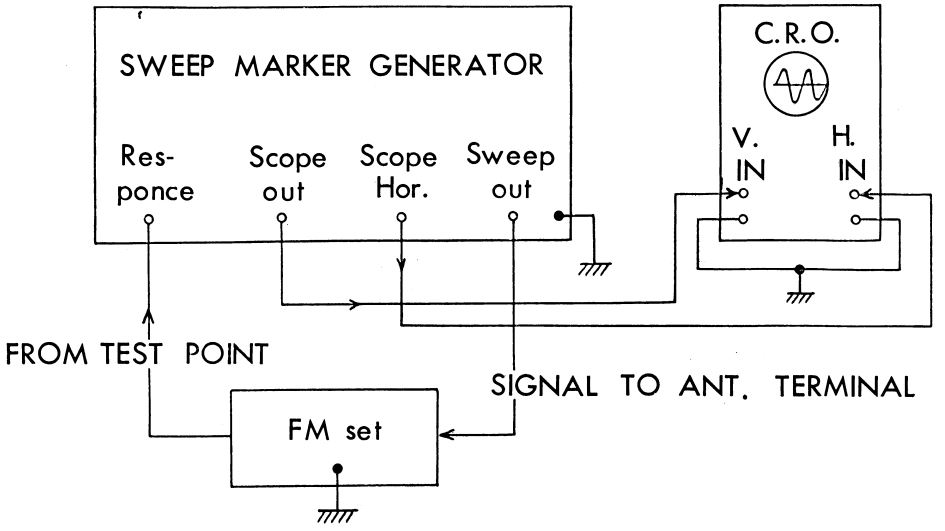



Fig. 1

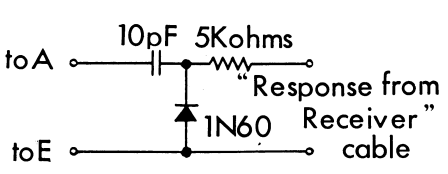
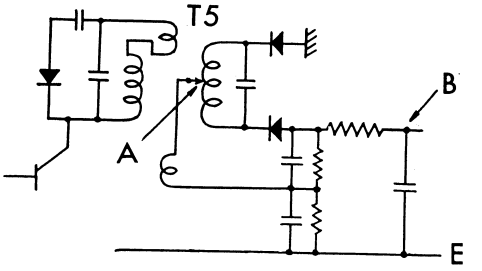



Fig. 2




Test points

Fig. 3

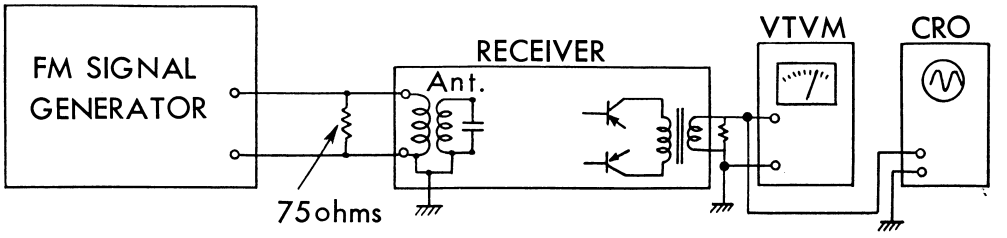



Fig. 4

## Tracking

**1.** Set the generator frequency at 100 Mc and the tuner will be tuned in the 100 Mc signal.

**2.** Adjust trimmer Ct1 for maximum gain. If the gain increases with approaching tuning wand to coil L3 for checking the tracking, readjust the trimmer for maximum meter reading.

**3.** Set the generator at 87 Mc and make the tuner tuned in the 87 Mc signal. Adjust the slug of L3 for maximum gain. If the gain increases at the time of approaching tuning wand to L3, readjust the slug of L3.

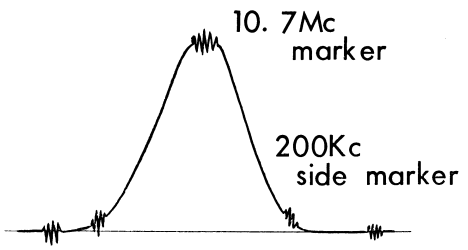
**4.** Arrange in the manner as step 1 and approach the wand to L3. If the gain increases, readjust the slug.

**5.** Arrange in the manner as step 3 and approach the wand to L3. If the gain increases, readjust the trimmer.

**6.** Repeat steps 4 and 5 until no further adjustment is required at either end of the dial. During this entire procedures, make certain that the generator output is to a level just high enough to produce usable meter deflection.

## Over all checking of alignments

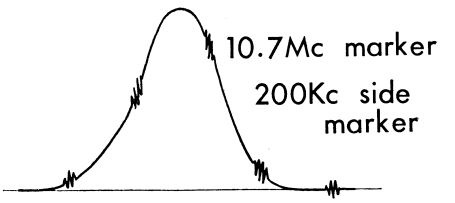
After adjustment of RF and IF stages finished, apply the signal of 90 Mc to the antenna terminal of tuner and have the receiver tuned in the signal accurately. Observe the waveform of output signal across the dummy load with 30 db level of the signal modulated at 400 cps, 75 Kc deviation to the Ant. If the precise waveform of 400 cps sinewave appeared on the scope, adjustment will be proved to be successfully completed, and if heavily distorted waveform, readjustment of IF and RF stages should be required. When the frequency of the signal generator is deviated at same distance away from the center tuning frequency of the tuner on either side, waveform and degree of distortion of both cases should be similar to each other. If not, readjustment of IF stages and discriminator should be necessary.




SCOPE PATTERN OF COMPLETE IF CHARACTERISTICS

Curve is symmetric. 10.7 Mc marker locates at center of curve. Symmetrical location of side markers.

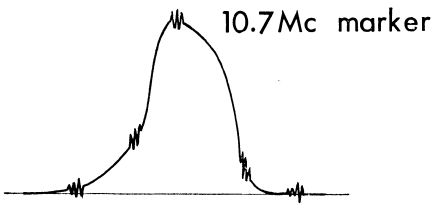
Fig. 5




UNCOMPLETE IF CHARACTERISTIC PATTERN

Symmetric curve, but offcentered 10.7 Mc marker.

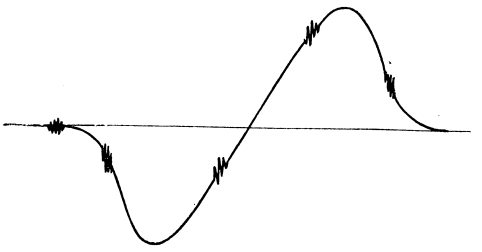
Fig. 6




UNCOMPLETE IF CHARACTERISTIC SCOPE PATTERN

10.7 Mc marker on center of curve, but unsymmetric curve.

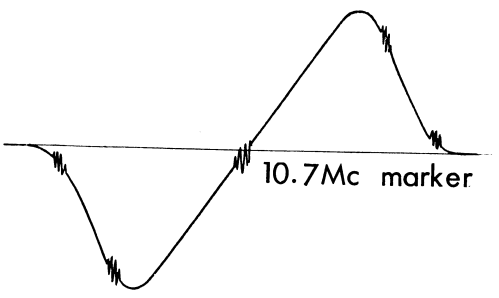
Fig. 7



UNCOMPLETE DETECTOR CHARACTERISTIC SCOPE PATTERN

Symmetric curve, but bad location of markers.

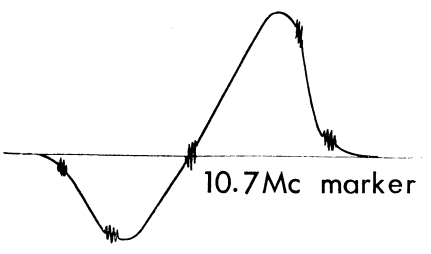
Fig. 8




COMPLETE DETECTOR CHARACTERISTIC SCOPE PATTERN

"S" curve and location of markers is symmetric in reference to 10.7 Mc marker.

Fig. 9




UNCOMPLETE DETECTOR CHARACTERISTIC SCOPE PATTERN

"S" curve is unsymmetric viewed from reference point of 10.7 Mc marker.

Fig. 10

# Alignment of AM section

Connect the VTVM (vacuum tube voltmeter) across the voice coil of speaker and set the volume control at maximum.

For all alignment operation, connect the low side of the signal generator to the receiver printed base and keep generator output as low as possible to avoid A. G. C. action.

| STEP | CONNECT HIGH SIDE OF SIGNAL GENERATOR TO- | SIGNAL GENERATOR OUTPUT FREQUENCY | DIAL SETTING OF SET | ADJUST FOR MAXIMUM OUTPUT |
|---|---|---|---|---|
| 1 | Connection lug of Cv3 in series with 0.1 uF. | 455 Kc/s | Quiet point near 540 Kc/s | IF transformer T6 T7 T8 |
| 2 | Short wire placed near antenna for signal radiation | 540 Kc/s | 540 Kc/s | OSC coil L10 |
| 3 | 〃 | 1600Kc/s | 1600Kc/s | OSC trimmer Ct4 |
| 4 | 〃 | Repeat steps 2 and 3. | | |
| 5 | 〃 | 600 Kc/s | 600 Kc/s | ANT coil L6 |
| 6 | 〃 | 1400 Kc/s | 1400 Kc/s | ANT trimmer Ct3 |
| 7 | 〃 | Repeat steps 5 and 6. | | |

# Service hints

**1.** When the radio receiver does not function, check batteries first. If the voltage of these is lower than 80%, replace these with new ones.

**2.** With reference to the transistor used in this set, note that the "base" is the signal input terminal (corresponding to signal grid of tubes) and the "collector" is the signal output terminal (corresponding to plate of tubes), and the "emitter" is the common terminal (corresponding to cathode of tubes).

**3.** Accordingly, defects can be traced in exactly the same way as in the case of a tube radio, using the signal generator.

**4.** High side of the signal generator shall be connected through a capacitor, so that the bias voltage will not be affected.

**5.** In order to protect transistors when tracing defects, avoid the followings :

i) Wrong polarity.

ii) Shortcircuiting with any conductor such as a screw driver.

iii) Checking circuit continuity with the receiver on.

iv) To use a soldering iron for long time when replacing a transistor or component parts.

**6.** Output circuit is of B class push-pull system. Note that the input signal increases the collector current in the B class push-pull system.

**7.** A. V. C. properly functions if emitter voltage of the Tr-10 (AM 1st IF Ampl. stage) goes down as input signal increases.

**8.** Local oscillator properly functions if distinct "click" is heard when lug of Osc. side is touched with a conductor such as a screw driver and, if only slight noise is heard, oscillation dose not functian.

**9.** Use Vacuum Tube Volt-Meter or high resistance Volt-Meter (1V/10kilo ohms or any value in the vicinity) to measure the voltage of transistor.

**10.** Readjustment shall be made when converter stage or IF amplifier stage is repaired with new parts, especially transistor.

**11.** Note that the unbalanced power Ampl. stage causes poor tone.

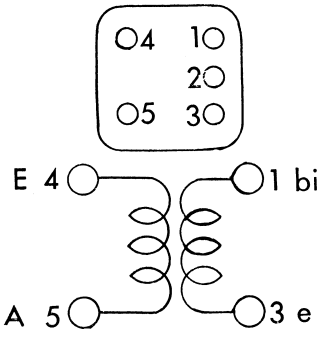
**12.** It happens to occur that an optimum S curve of discriminator can not be obtained with remarkable adjustment paid, although a symmetrical IF response curve centered on 10.7Mc is obtained. As its cause, unbalanced characteristic between two detector diodes is to blame.

**13.** As external case of IF transformer in and cap of transistor in FM section are grounded to earth, caution must be paied not to shortcircuit them with other parts.

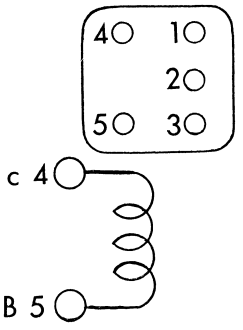
# MAIN PARTS TERMINAL INDENTIFICATION 1

1. FM

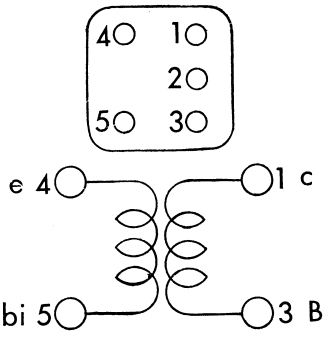
L1 L2 Ant. coil



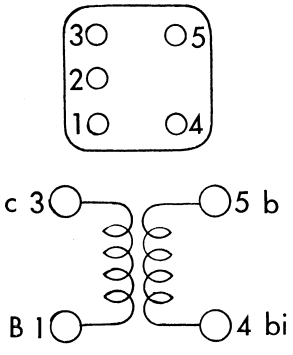

L3 RF coil



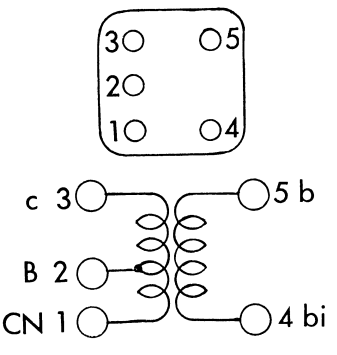

L4 L5 Osc. coil



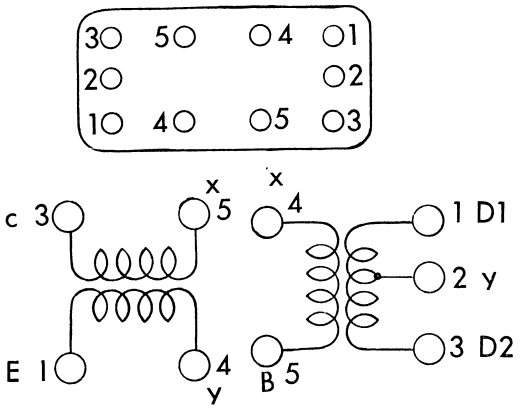

T1 lst IFT



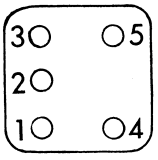

T2
T3 IFT
T4

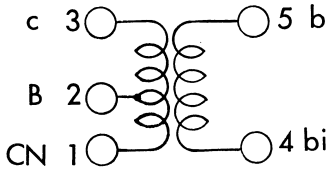



T5 Discriminator

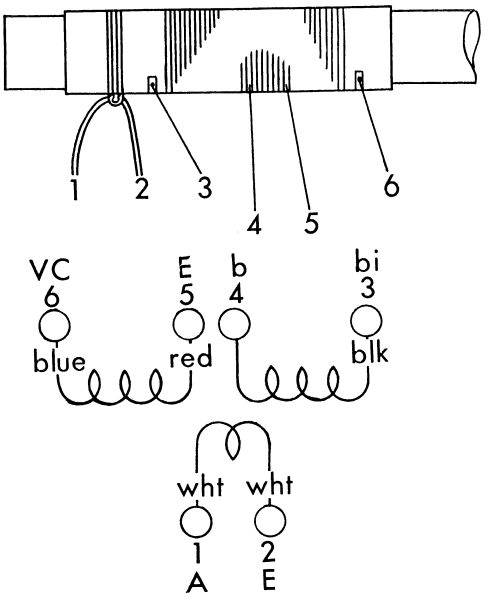



2. AM T6 T7 T8 IFT



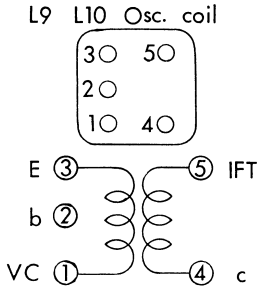




L6 L7 L8 Antenna coil

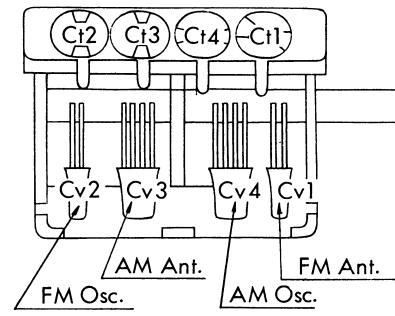


# MAIN PARTS TERMINAL INDENTIFICATION 2

L9 L10 Osc. coil



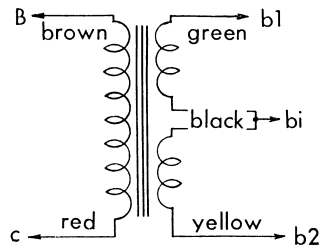

3. Variable capacitor & trimmer



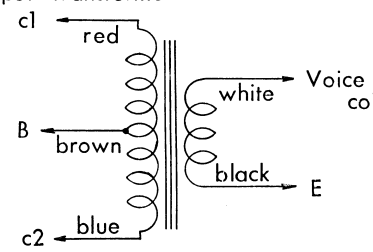

**ABBREVIATION**

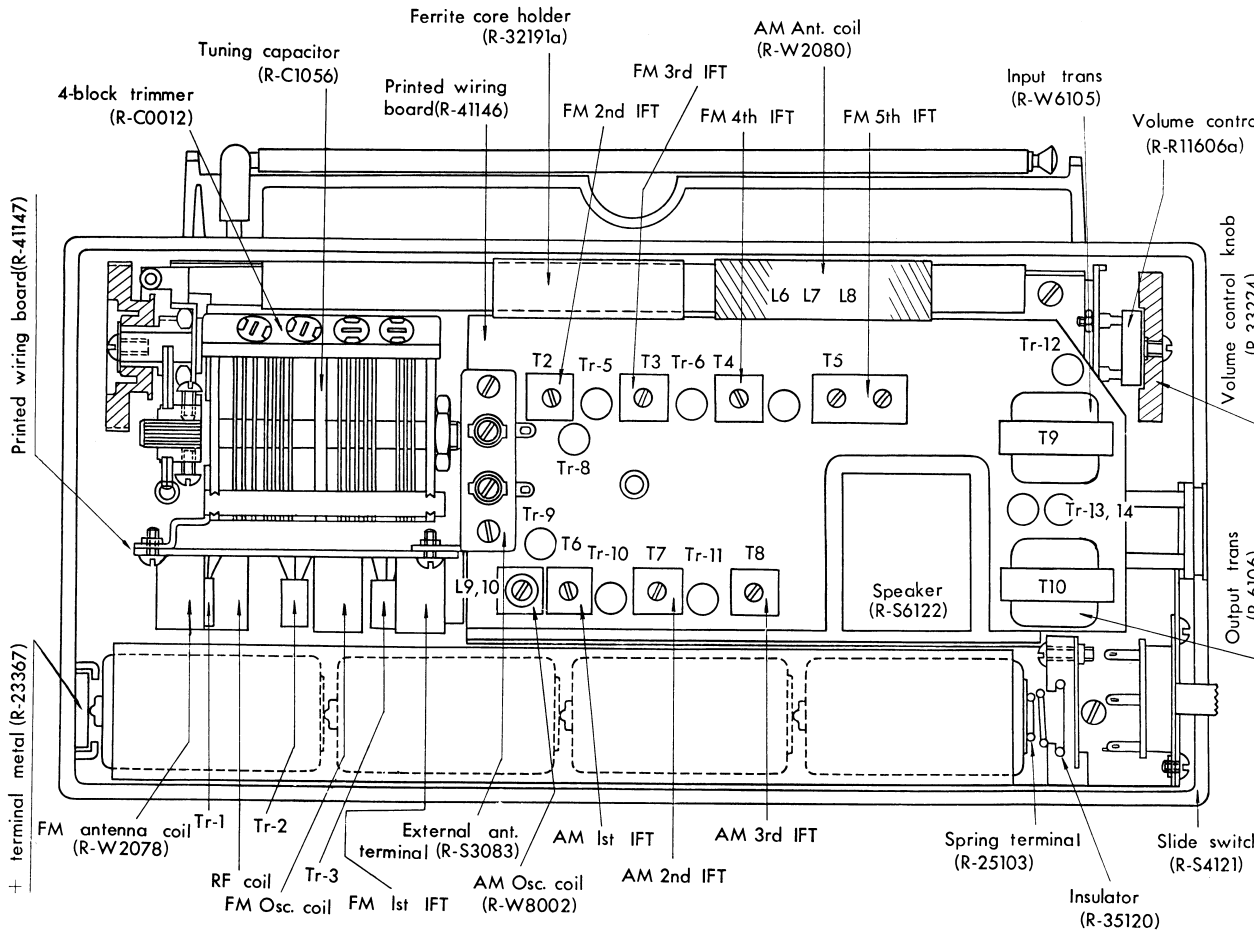
- **A :** antenna
- **B :** battery or B supply
- **C :** collector
- **E :** earth
- **NC :** neutralizing capacitor
- **b :** base
- **bi:** bias
- **e :** emitter
- **VC :** variable capacitor
- **D :** diode

4. Input transformer

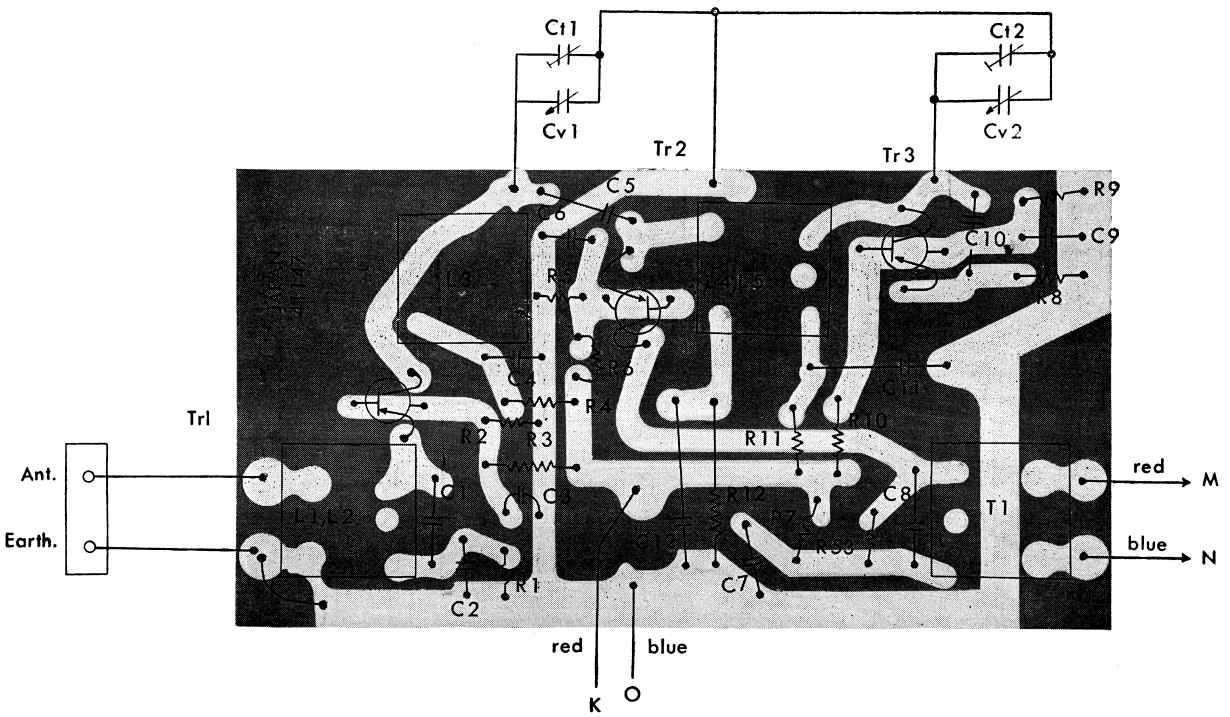



5. Output transformer

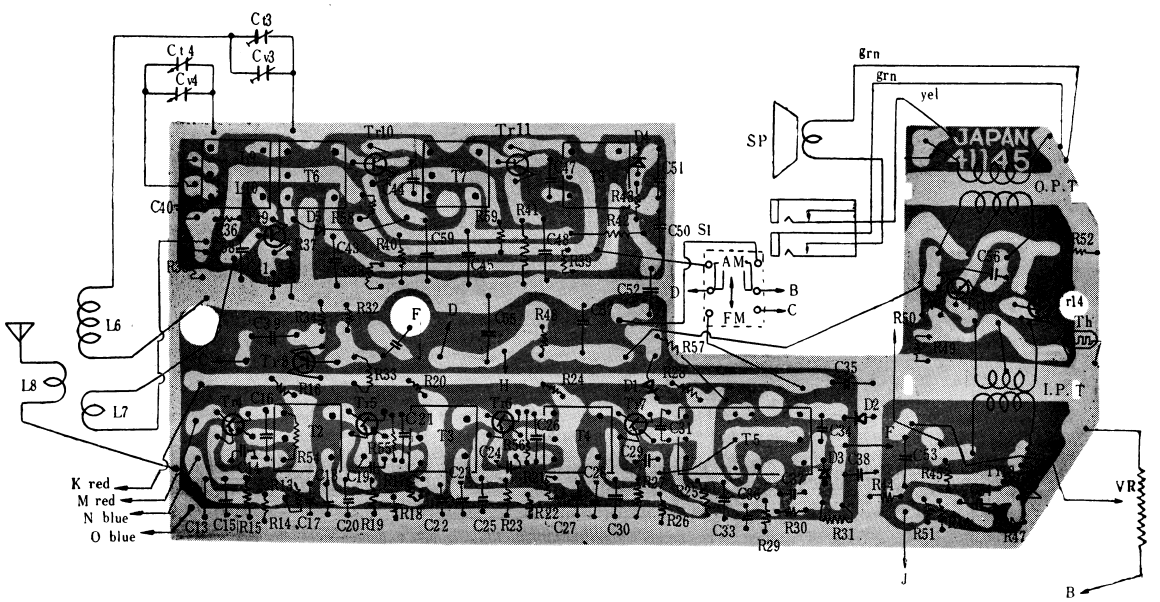


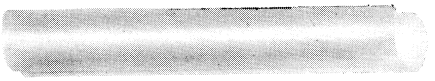
## INTER-PARTS WIRING ILLUSTRATION FM RF & CONVERTER STAGES




## INTER-PARTS WIRING ILLUSTRATION



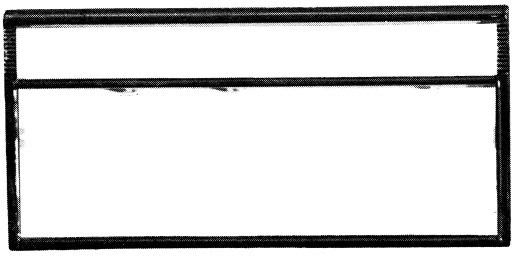
(R-35173)



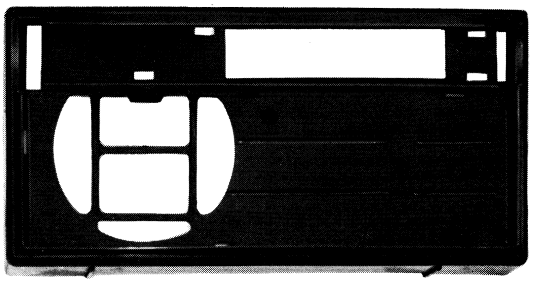
(R-S 2025 a)

(R-31360)

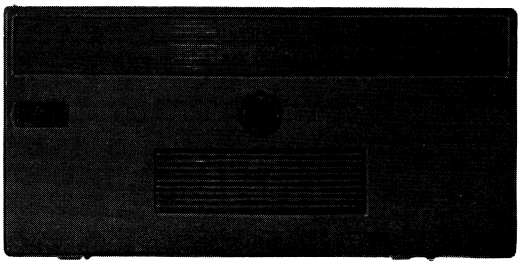

(R-23405)



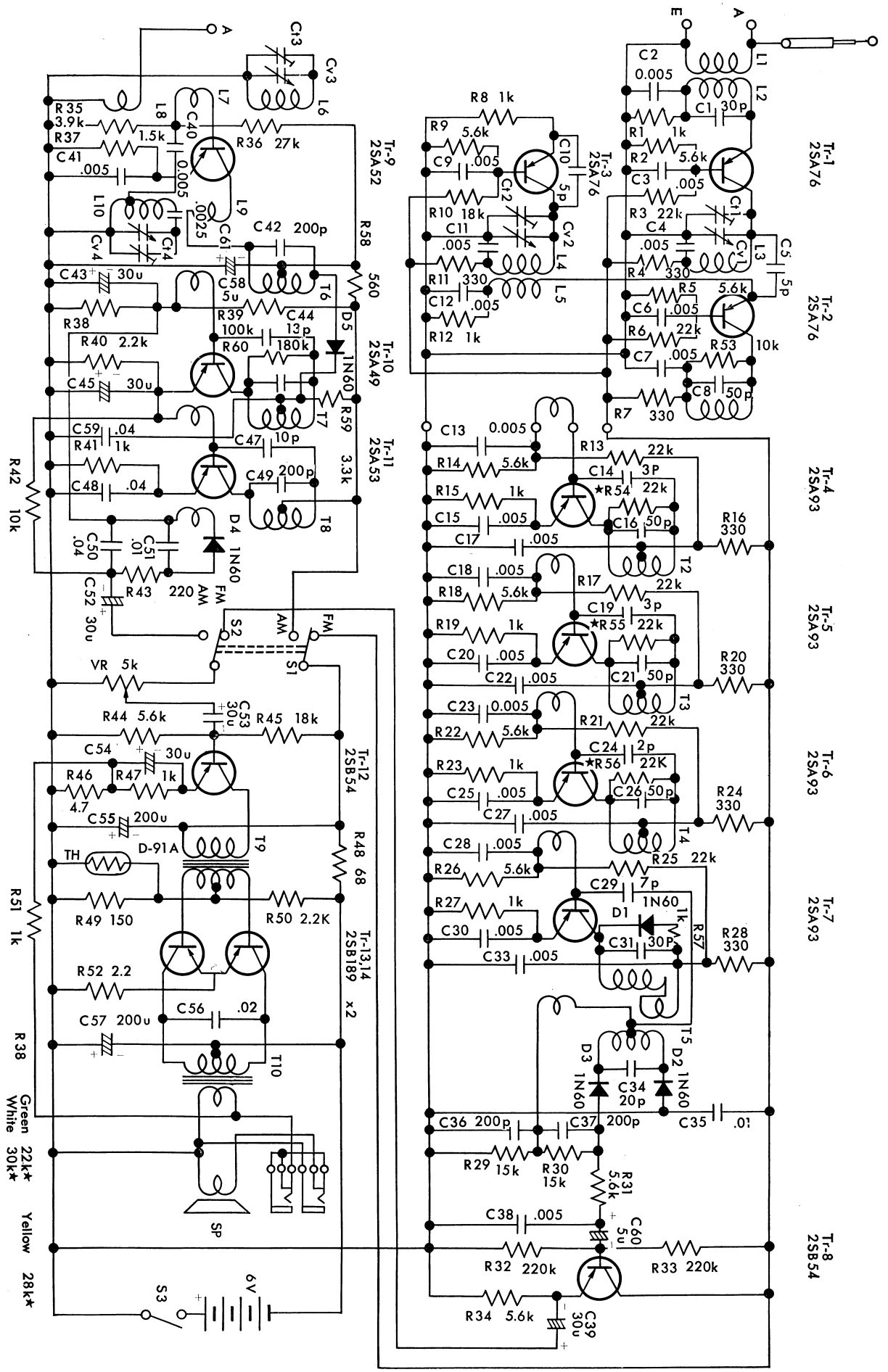
(R-31358 a)



(R-31359 a)



# MODEL AFT-IN CIRCUIT DIAGRAM



## FIXED RESISTORS

| PART NO. | STOCK NO. | DESCRIPTION | | | |
|---|---|---|---|---|---|
| R 1 | | Mold | 1K ohm | 10% | ½W |
| R 2 | | Mold | 5.6K ohm | 10% | ½W |
| R 3 | | Mold | 22K ohm | 10% | ½W |
| R 4 | | Mold | 330 ohm | 20% | ½W |
| R 5 | | Mold | 5.6K ohm | 10% | ½W |
| R 6 | | Mold | 22K ohm | 10% | ½W |
| R 7 | | Mold | 330 ohm | 20% | ½W |
| R 8 | | Mold | 1K ohm | 10% | ½W |
| R 9 | | Mold | 5.6K ohm | 10% | ½W |
| R 10 | | Mold | 18K ohm | 10% | ½W |
| R 11 | | Mold | 330 ohm | 20% | ½W |
| R 12 | | Mold | 1K ohm | 10% | ½W |
| R 13 | | Mold | 22K ohm | 10% | ½W |
| R 14 | | Mold | 5.6K ohm | 10% | ½W |
| R 15 | | Mold | 1K ohm | 10% | ½W |
| R 16 | | Mold | 330 ohm | 20% | ½W |
| R 17 | | Mold | 22K ohm | 10% | ½W |
| R 18 | | Mold | 5.6K ohm | 10% | ½W |
| R 19 | | Mold | 1K ohm | 10% | ½W |
| R 20 | | Mold | 330 ohm | 20% | ½W |
| R 21 | | Mold | 22K ohm | 10% | ½W |
| R 22 | | Mold | 5.6K ohm | 10% | ½W |
| R 23 | | Mold | 1K ohm | 10% | ½W |
| R 24 | | Mold | 330 ohm | 20% | ½W |
| R 25 | | Mold | 22K ohm | 10% | ½W |
| R 26 | | Mold | 5.6K ohm | 10% | ½W |
| R 27 | | Mold | 1K ohm | 10% | ½W |
| R 28 | | Mold | 330 ohm | 20% | ½W |
| R 29 | | Mold | 15K ohm | 10% | ½W |
| R 30 | | Mold | 15K ohm | 10% | ½W |
| R 31 | | Mold | 5.6K ohm | 10% | ½W |
| R 32 | | Mold | 220K ohm | 10% | ½W |
| R 33 | | Mold | 220K ohm | 10% | ½W |
| R 34 | | Mold | 5.6K ohm | 10% | ½W |
| R 35 | | Mold | 3.9K ohm | 10% | ½W |
| R 36 | | Mold | 27K ohm | 10% | ½W |
| R 37 | | Mold | 1.5K ohm | 10% | ½W |
| R 38 | | Carbon | 27K ohm | 5% | ¼W |
| R 39 | | Carbon | 100K ohm | 5% | ¼W |
| R 40 | | Mold | 2.2K ohm | 10% | ½W |
| R 41 | | Mold | 1K ohm | 10% | ½W |
| R 42 | | Mold | 10K ohm | 10% | ½W |
| R 43 | | Mold | 220 ohm | 20% | ½W |
| R 44 | | Mold | 5.6K ohm | 10% | ½W |
| R 45 | | Mold | 18K ohm | 10% | ½W |
| R 46 | | Mold | 4.7 ohm | 10% | ½W |
| R 47 | | Mold | 1K ohm | 10% | ½W |
| R 48 | | Mold | 68 ohm | 10% | ½W |
| R 49 | | Mold | 150 ohm | 10% | ½W |
| R 50 | | Mold | 2.2K ohm | 10% | ½W |
| R 51 | | Mold | 1K ohm | 10% | ½W |
| R 52 | | Mold | 2.2 ohm | 10% | ½W |
| R 53 | | Mold | 10K ohm | 10% | ½W |
| R 54 | | Mold | 22K ohm | 10% | ¼W |
| R 55 | | Mold | 22K ohm | 10% | ¼W |
| R 56 | | Mold | 22K ohm | 10% | ¼W |
| R 57 | | Mold | 1K ohm | 10% | ½W |
| R 58 | | Mold | 560 ohm | 10% | ½W |
| R 59 | | Mold | 3.3K ohm | 10% | ½W |
| R 60 | | Mold | 180K ohm | 10% | ¼W |

## CAPACITORS

| PART NO. | STOCK NO. | DESCRIPTION | | | |
|---|---|---|---|---|---|
| C 1 | | Ceramic | 30pF | ±10% | 500V |
| C 2 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 3 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 4 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 5 | | Ceramic | 5pF | ±0.5pF | 25V |
| C 6 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 7 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 8 | | Ceramic | 50pF | ±10% | 500V |
| C 9 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 10 | | Ceramic | 5pF | ±0.5pF | 25V |
| C 11 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 12 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 13 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 14 | | Ceramic | 3pF | ±0.5pF | 25V |
| C 15 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 16 | | Ceramic | 50pF | ±10% | 500V |
| C 17 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 18 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 19 | | Ceramic | 3pF | ±0.5pF | 25V |
| C 20 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 21 | | Ceramic | 50pF | ±10% | 500V |
| C 22 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 23 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 24 | | Ceramic | 2pF | ±0.5pF | 25V |
| C 25 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 26 | | Ceramic | 50pF | ±10% | 500V |
| C 27 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 28 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 29 | | Ceramic | 7pF | ±0.5pF | 25V |
| C 30 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 31 | | Ceramic | 30pF | ±10% | 500V |
| C 33 | | Ceramic | 0.005μF | +80-20% | 25V |
| C 34 | | Ceramic | 20pF | ±10% | 25V |
| C 35 | | Ceramic | 0.01μF | +80-20% | 25V |
| C 36 | | Ceramic | 200pF | ±20% | 500V |
| C 37 | | Ceramic | 200pF | ±20% | 500V |
| C 38 | | Mylar | 0.005μF | +30-20% | 100V |
| C 39 | | Electrol. | 30μF | | 6V |
| C 40 | | Mylar | 0.005μF | +30-20% | 100V |
| C 41 | | Mylar | 0.005μF | +30-20% | 100V |
| C 43 | | Electrol. | 30μF | | 6V |
| C 44 | | Ceramic | 13pF | ±10% | 25V |
| C 45 | | Electrol. | 30μF | | 6V |
| C 47 | | Ceramic | 10pF | ±1pF | 25V |
| C 48 | | Ceramic | 0.04μF | +80-20% | 25V |
| C 50 | | Mylar | 0.04μF | +30-20% | 100V |
| C 51 | | Mylar | 0.01μF | +30-20% | 100V |
| C 52 | | Electrol. | 30μF | | 6V |
| C 53 | | Electrol. | 30μF | | 6V |
| C 54 | | Electrol. | 30μF | | 3V |
| C 55 | | Electrol. | 200μF | | 6V |
| C 56 | | Mylar | 0.02μF | +30-20% | 100V |
| C 57 | | Electrol. | 200μF | | 6V |
| C 58 | | Electrol. | 5μF | | 6V |
| C 59 | | Ceramic | 0.04μF | +80-20% | 25V |
| C 60 | | Electrol. | 5μF | | 6V |
| C 61 | | Ceramic | 0.0025μF | ±10% | 100V |