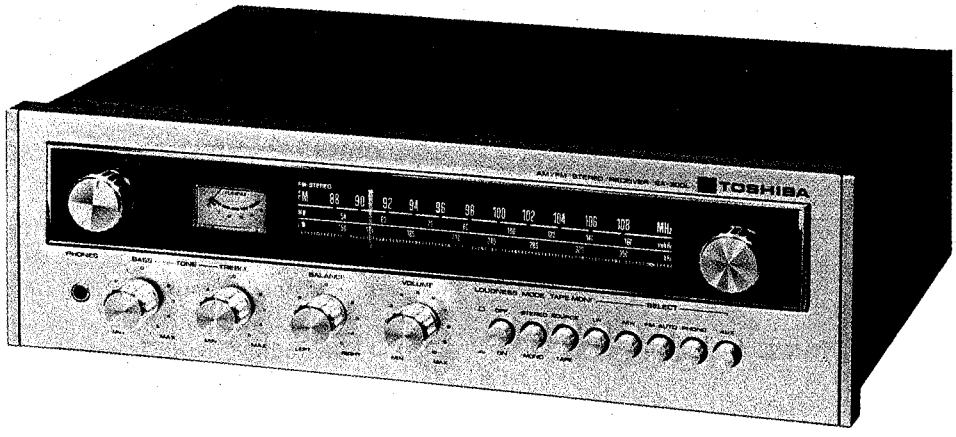
# TOSHIBA AM/FM STEREO RECEIVER
# SERVICE DATA MODEL SA-300L

FILE NO. 173-011

SUPPLEMENT A




## 1. SPECIFICATIONS

### FM TUNER SECTION

| | |
|---|---|
| **Frequency range:** | 88–108 MHz |
| **Antenna input impedance:** | 300 ohm (balanced)<br>75 ohm (unbalanced) |
| **Usable sensitivity:** | 2.5μV |
| **Harmonic distortion:** | mono 0.4% (400 Hz 100%)<br>stereo 1.0% (400 Hz 100%) |
| **Signal-to-noise ratio:** | better than 60 dB |
| **Stereo separation:** | better than 35 dB |
| **Capture ratio:** | better than 3 dB |
| **Image rejection ratio:** | better than 50 dB |
| **AM suppression ratio:** | better than 45 dB |
| **Frequency response:** | 20 Hz–15 kHz -3 dB |

### AM TUNER SECTION

| | |
|---|---|
| **Frequency range:** | LW 145–360 kHz<br>MW 530–1605 kHz |
| **Usable sensitivity:** | LW 54 dB (S/N 20 dB)<br>MW 48 dB (S/N 20 dB) |
| **Distortion factor:** | LW 1%<br>MW 1% |
| **Image rejection ratio:** | LW better than 35 dB<br>MW better than 35 dB |
| **IF rejection ratio:** | LW better than 27 dB<br>MW better than 30 dB |
| **Signal-to-noise ratio:** | LW better than 45 dB<br>MW better than 45 dB |
| **Selectivity:** | LW 35 dB (10 kHz)<br>MW 35 dB (10 kHz) |

### AUDIO SECTION

| | |
|---|---|
| **Total IHF music power:**<br>(0.8% distortion) | 44 Watts (8 ohm)<br>43 Watts (4 ohm) |
| **R.M.S. continuous power:**<br>(0.8% distortion at 1 kHz) | 14W x 2 (8 ohm) each channel driven<br>12W x 2 (4 ohm) each channel driven<br>12W x 2 (8 ohm) both channel driven |
| **Harmonic distortion:** | 0.8% (at 14W output) |
| **Inter modulation distortion:** | 0.8% |
| **Frequency response:** | 20 Hz–50 kHz + 1 -3 dB |
| **IHF power bandwidth:** | 15 Hz–25 kHz |
| **Input sensitivity and impedance:** | PHONO 3.0 mV (47k ohm)<br>AUX 150 mV (50k ohm)<br>TAPE PLAY 250 mV (50k ohm) |
| **Recording output level:** | TAPE REC 250 mV (50k ohm)<br>DIN 30 mV |
| **Signal-to-noise ratio:** | PHONO 65 dB<br>AUX 75 dB |
| **Residual noise:** | 1.0 mV |
| **Speaker impedance:** | 4–16 ohm (A or B)<br>8–16 ohm (A + B) |
| **Tone control:** | bass (100 Hz) ±10 dB<br>treble (10 kHz) ±10 dB |
| **Damping factor:** | 20 (8 ohm) |
| **Power source:** | 100V/120V/220V/240V, 50 Hz/60 Hz |
| **Power consumption:** | 70W |
| **Dimensions:** | 15-3/4" (W) x 11-3/8" (D) x 4-1/2" (H)<br>(400 x 290 x 115 m/m) |
| **Weight:** | 15.6 lbs |

**TOKYO SHIBAURA ELECTRIC CO., LTD.**

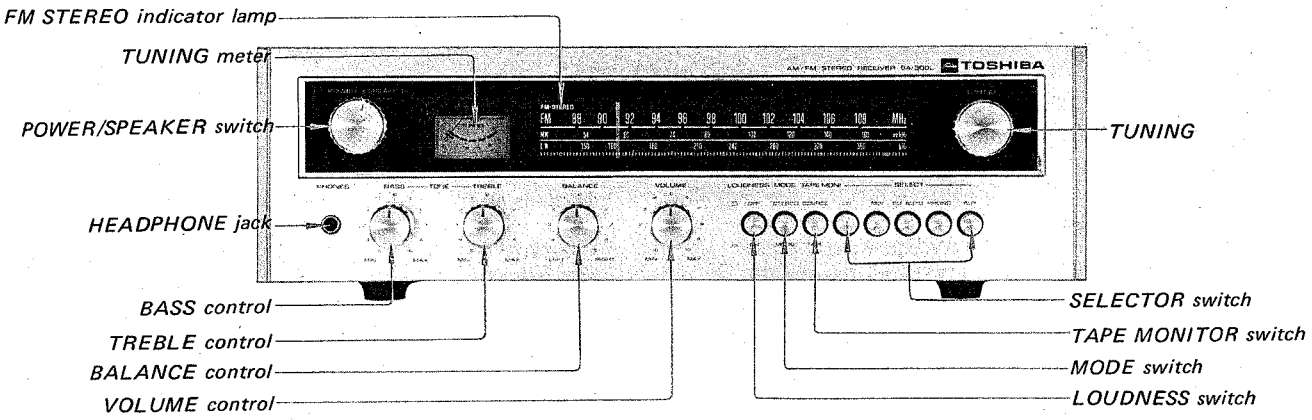
2-1, 5-CHOME, GINZA, CHUO-KU, TOKYO, JAPAN

# TABLE OF CONTENTS

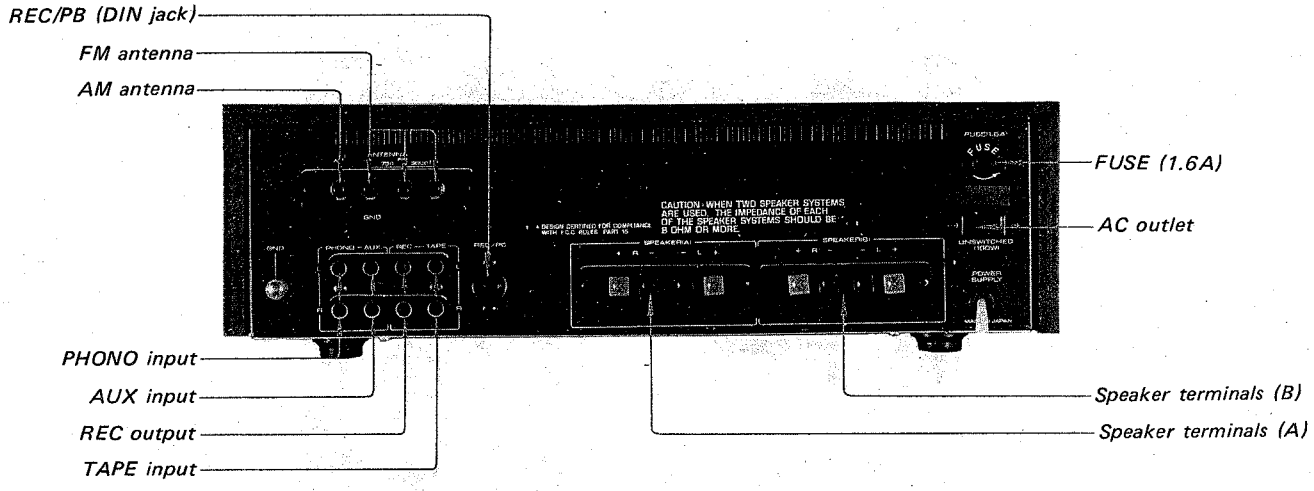

| | | Page |
|---|---|---|
| 1. | SPECIFICATIONS | 1 |
| 2. | OPERATING CONTROLS | |
| | 2-1. Front View | 2 |
| | 2-2. Rear View | 3 |
| 3. | PARTS LOCATION | |
| | 3-1. Chassis Top View | 3 |
| | 3-2. Chassis Bottom View | 4 |
| 4. | DISASSEMBLY INSTRUCTION | |
| | 4-1. Cabinet Removal | 4 |
| | 4-2. Bottom Cover Removal | 5 |
| 5. | DIAL CORD STRINGING | 5 |
| 6. | LEVEL DIAGRAM | 6 |
| 7. | SEMICONDUCTOR BASE DIAGRAM | 6 |
| 8. | CIRCUIT ADJUSTMENTS | |
| | 8-1. AM Adjustments | 7 |
| | 8-2. FM Adjustments | 8 |
| | 8-3. FM MPX Adjustments | 9 |
| | 8-4. Audio Adjustments | 10 |
| 9. | TROUBLE SHOOTING HINTS | 11 |
| 10. | BLOCK DIAGRAM | 12 |
| 11. | CIRCUIT SCHEMATIC AND MOUNTING DIAGRAMS | |
| | 11-1. Integrated Circuit | 14 |
| | 11-2. Circuit Schematic General | 15~16 |
| | 11-3. Tuner Circuit Board Mounting Diagram | 17~20 |
| | 11-4. Audio Circuit Board Mounting Diagram | 21 |
| 12. | PACKING | 22 |
| 13. | EXPLODED VIEW | 23~24 |
| 14. | PARTS LIST | 25~27 |


## 2. OPERATING CONTROLS

### 2-1. FRONT VIEW

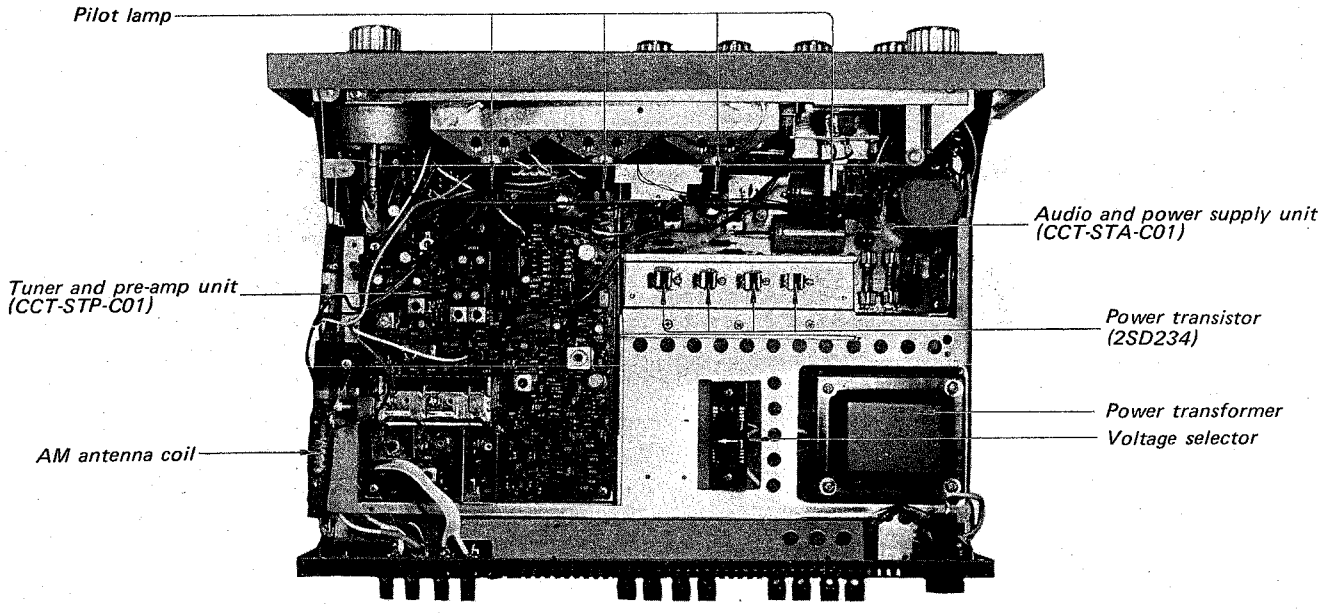


### 2-2. REAR VIEW

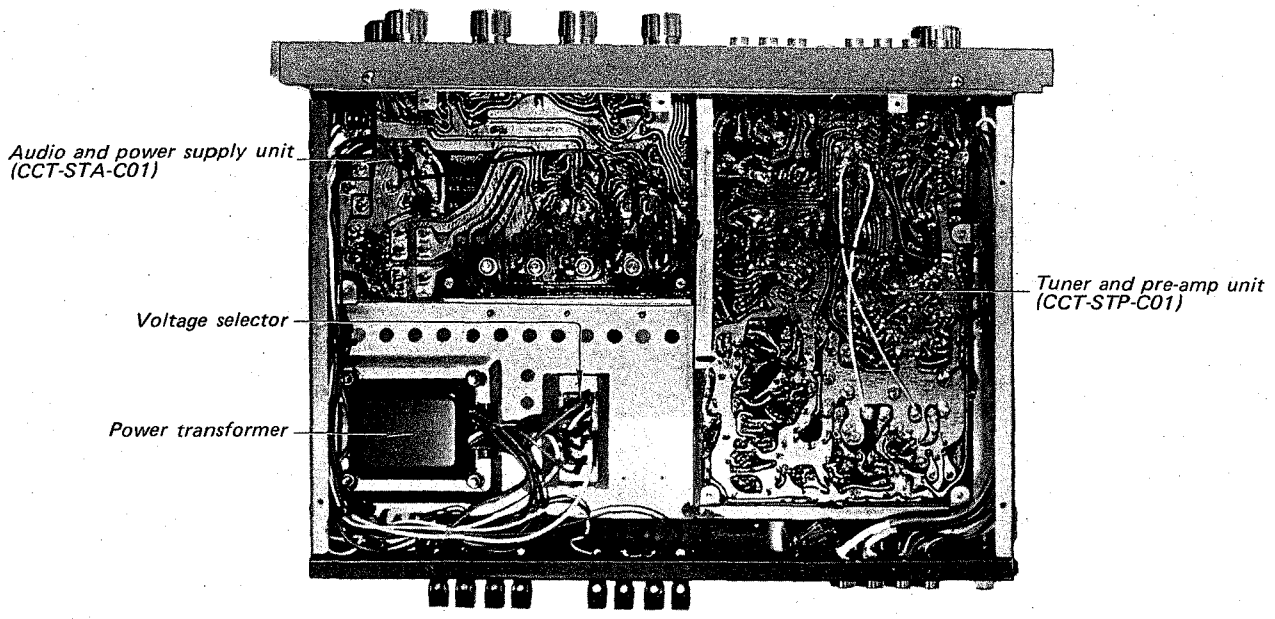



## 3. PARTS LOCATION

### 3-1. CHASSIS TOP VIEW



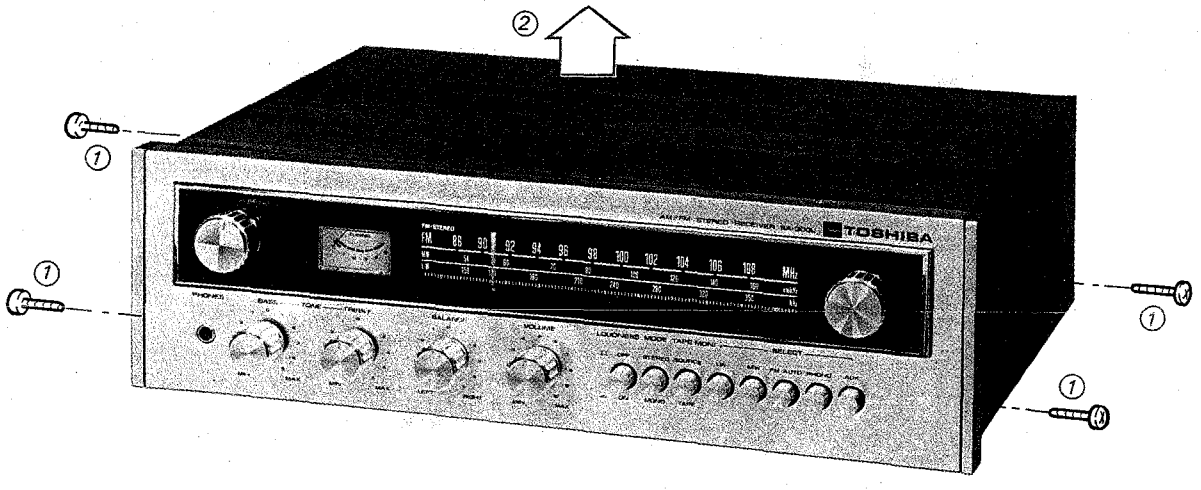
### 3-2. CHASSIS BOTTOM VIEW




## 4. DISASSEMBLY INSTRUCTION

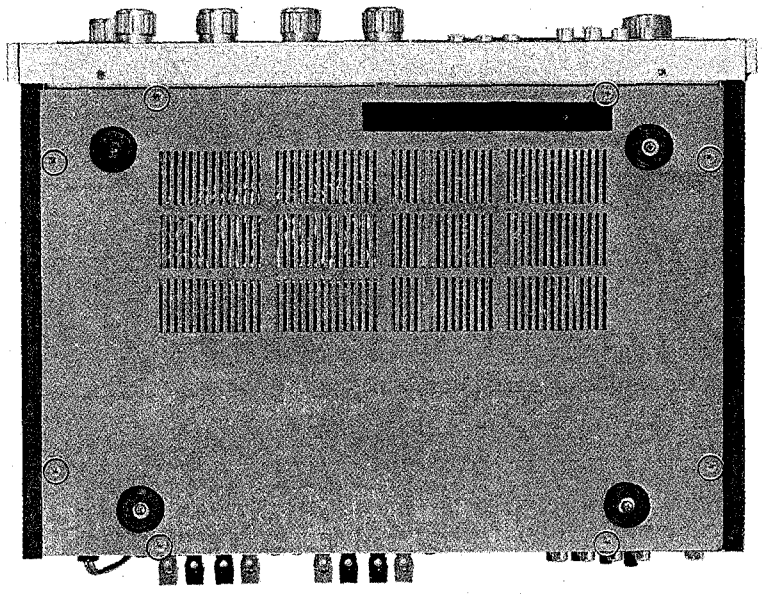
### 4-1. CABINET REMOVAL

1. Remove the four screws ( ① ).
2. Pull out the cabinet ( ② ).

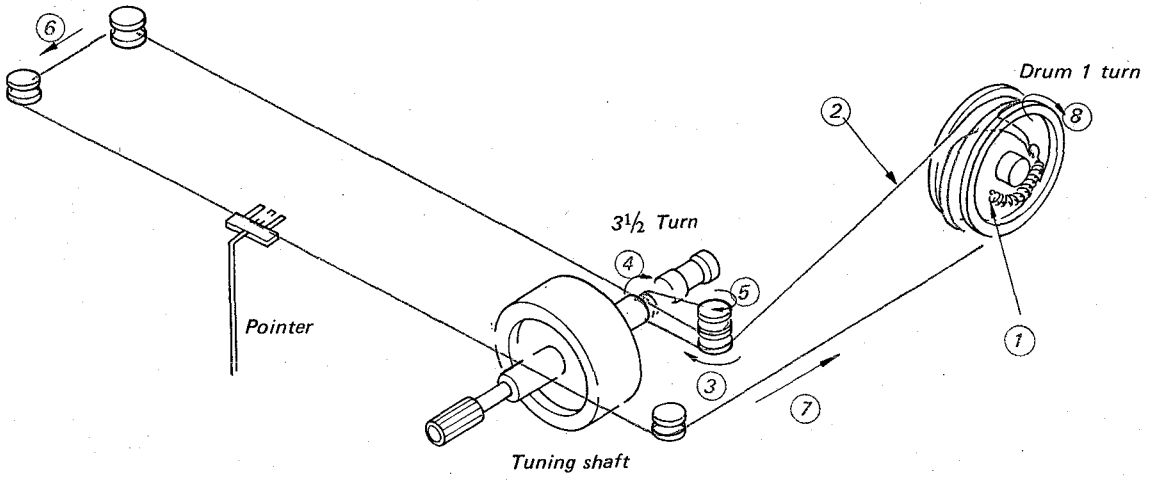


### 4-2. BOTTOM COVER REMOVAL

1. Remove the eight screws.
2. Remove the back cover.



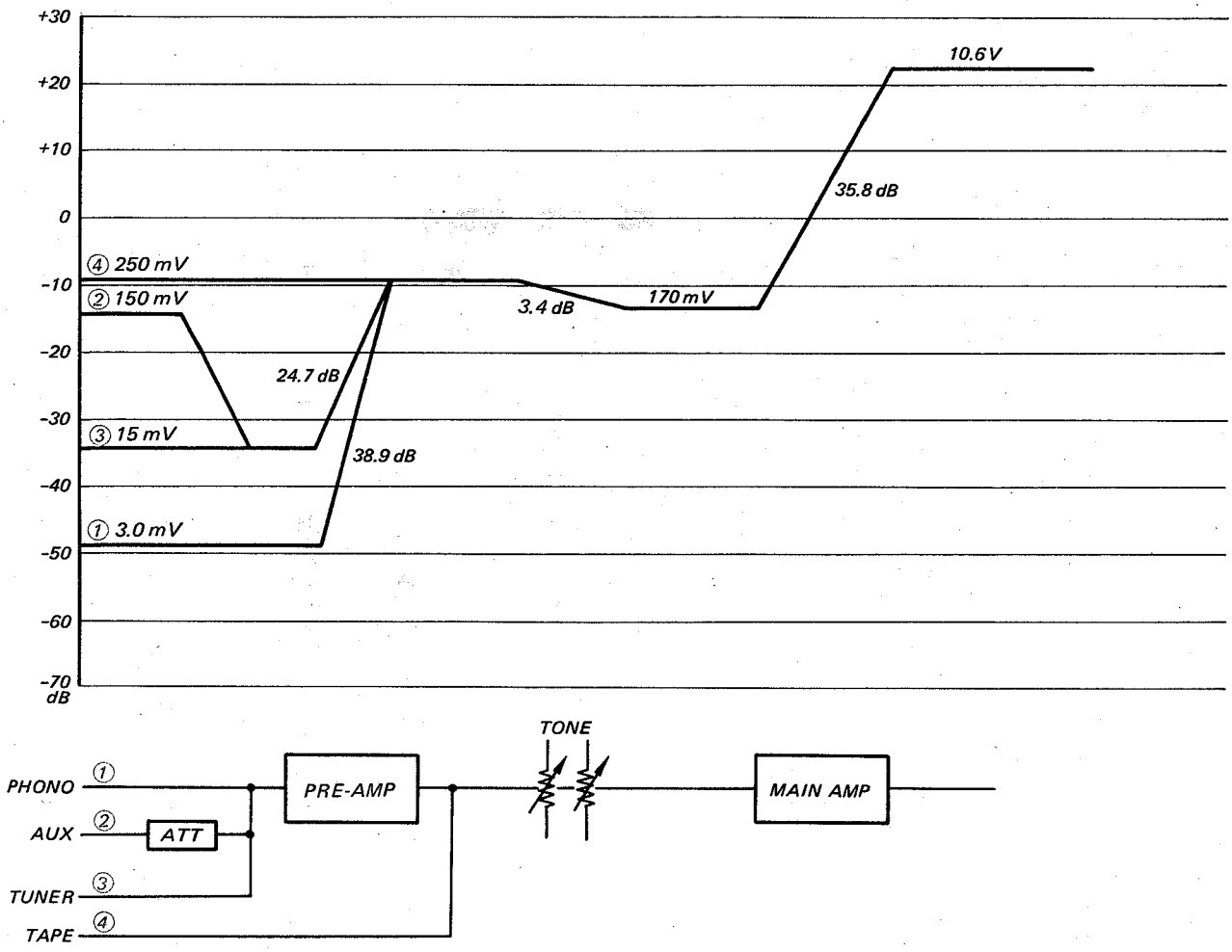
## 5. DIAL CORD STRINGING




### DIAL STRINGING BLOCK DIAGRAM

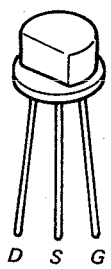
Load the dial cord as shown in the figure above. Get the cord through the eyelet as shown right. Give tension on the dial cord by tension-spring action.
Then squash the eyelet and fix it by the aid of a small amount cement not to loosen the cord.

## 6. LEVEL DIAGRAM



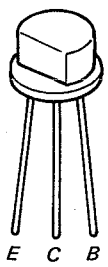

## 7. SEMICONDUCTOR BASE DIAGRAM

**2SK19**



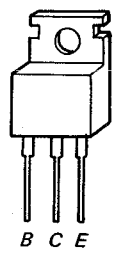

D Drain
S Source
G Gate

**2SC373 2SC380A 2SC372**
**2SC941 2SC732 2SC734**




E Emitter
C Collector
B Base

**2SD234**



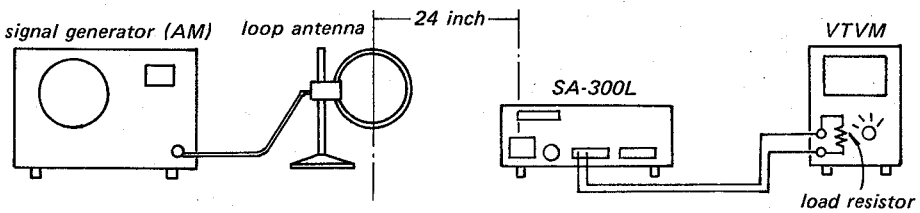

E Emitter
E Collector
B Base

# 8. CIRCUIT ADJUSTMENTS

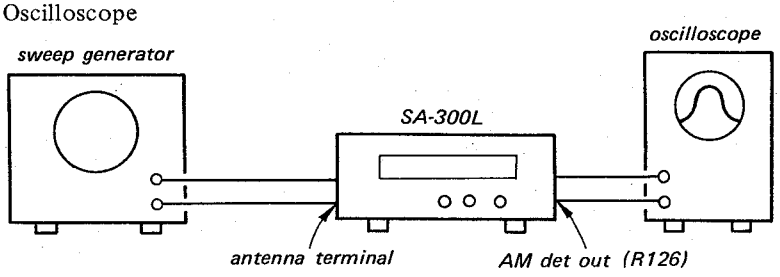
## 8-1. AM ADJUSTMENTS

**Equipments**

1. Signal generator
2. Sweep generator
3. Test loop antenna
4. Dummy load (8 ohm)
5. VTVM
6. Adjusting screw driver
7. Adjusting driver (use to antenna core)
8. Oscilloscope




*Frequency coverage and tracking adjustment test set-up*




*IF adjustment test set-up*

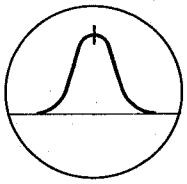


*Fig. 8.*

| Step | Adjustment | Remarks |
|---|---|---|
| IF Response | IT-04, IT-07, IT-08 IF Transformer | Adjust for scope pattern with specified marker (455 kHz) as illustrated in Fig. 8. |

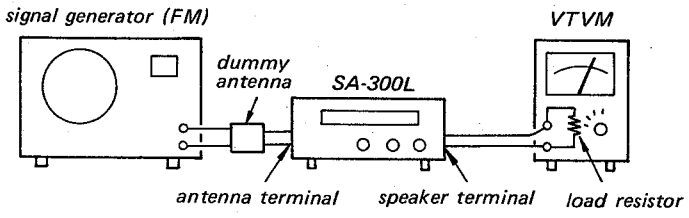
| Step | Adjusting circuit | Connections | | SG frequency | Position of tuning dial | Adjustment | VTVM |
|---|---|---|---|---|---|---|---|
| | | Input | Output | | | | |
| 1 | MW OSC (Frequency Coverage) | Connect Signal generator to test loop | Connect VTVM to SP terminal | 540 kHz (400 Hz 30% MOD) | Set the tuning gang at 540 kHz | 1T-06 | Maximum |
| 2 | | | | 1600 kHz (400 Hz 30% MOD) | Set the tuning gang at 1600 kHz | VC02-a | |
| Repeat Step 1 and 2 | | | | | | | |
| 3 | MW ANT (Tracking) | Connect Signal generator to test loop | Connect VTVM to SP terminal | 600 kHz (400 Hz 30% MOD) | Tune to 600 kHz signal | L001 (MW) | Maximum |
| 4 | | | | 1400 kHz (400 Hz 30% MOD) | Tune to 1400 kHz signal | VC03-a | Maximum |
| Repeat Step 3 and 4 | | | | | | | |
| 5 | LW OSC (Frequency Coverage) | Connect Signal generator to test loop | Connect VTVM to SP terminal | 150 kHz (400 Hz 30% MOD) | Set the tuning gang at 150 kHz | 1T-05 | Maximum |
| 6 | | | | 360 kHz (400 Hz 30% MOD) | Set the tuning gang at 360 kHz | VC02-b | Maximum |
| Repeat Step 5 and 6 | | | | | | | |
| 7 | LW ANT (Tracking) | Connect Signal generator to test loop | Connect VTVM to SP terminal | 150 kHz (400 Hz 30% MOD) | Tune to 150 kHz signal | L001 (LW) | Maximum |
| 8 | | | | 360 kHz (400 Hz 30% MOD) | Tune to 360 kHz signal | VC03-b | Maximum |
| Repeat Step 7 and 8 | | | | | | | |

**Note:** Male adjustment of the AM tuner section with the minimum input signal possible to the set.

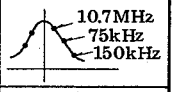
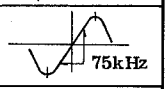
## 8-2. FM ADJUSTMENTS

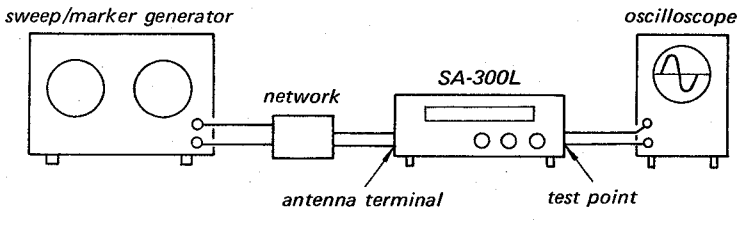
### Test Equipments/Tools Required

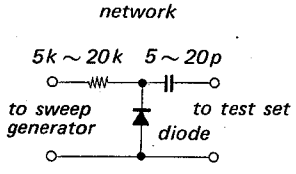
1. Sweep marker generator
2. Signal generator (FM)
3. Oscilloscope
4. VTVM
5. FM dummy antenna (300 ohms)
6. Dummy load resistor
7. Network
8. Adjusting driver
9. Adjusting bar




*FM Frequency coverage and tracking adjustment test set-up*

| Step | Adjusting circuit | Connections | | SG frequency | Position of tuning dial | Adjustment | VTVM |
|---|---|---|---|---|---|---|---|
| | | Input | Output | | | | |
| 1 | IF | Connect sweep generator to FM ANT terminal | Connect oscilloscope to across R43 (FM DET OUT) | 10.7 MHz | Near max. capacity of VC. at position with no unrequired signal | 1T01 1T03 |   |
| 2 | Radio Det. | | Connect oscilloscope to across R43 (FM DET OUT) | | | 1T03 (secondary) |   |
| 3 | OSC (Frequency coverage) | Connect to FM signal generator to FM ANT terminal | Connect VTVM to SP terminal | 87.5 MHz (400 Hz 30% MOD) | Low end of dial scale | L04 | Maximum |
| 4 | | | | 108 MHz (400 Hz 30% MOD) | Set the tuning gang at 108 MHz | FM OSC Trimmer | |
| Repeat Step 3 and 4 | | | | | | | |
| 5 | RF | Connect FM signal generator to FM ANT terminal | Connect VTVM to SP terminal | 88 MHz (400 Hz 30% MOD) | Tune to 88 Hz signal | L02 | Maximum |
| 6 | | | | 108 MHz (400 Hz 30% MOD) | Tune to 108 MHz signal | FM ANT RF Trimmer | |
| Repeat Step 5 and 6 | | | | | | | |




*FM IF adjustment test set-up*

**CAUTION:**

When realigning the FM receiving frequency, the lowest side of the frequency range must not be below 87.5 MHz in order to comply with FTZ regulations in west germany.

## 8-3. FM MPX ADJUSTMENTS

### Test Equipments/Tools Required

1. Signal generator (FM)
2. Dummy antenna (300 ohms)
3. Stereo modulator
4. Oscilloscope
5. VTVM
6. CR oscillator
7. Dummy load resistor
8. Adjusting driver
9. Multimeter

| Step | Adjusting circuit | Connections | | Position of tuning dial | Adjustment | VTVM |
|---|---|---|---|---|---|---|
| | | Input | Output | | | |
| 1 | Dabuler & 19 kHz pilot signal | Connect FM stereo SG. to FM ANT. terminal. (see Fig. 7-3-1) 19 kHz signal ON. Sub channel signal ON. add 100 Hz signal from left CH. | Connect VTVM to right SP terminal | 98 MHz | T02<br>T03 | Maximum |
| 2 | FM stereo signal separation | Connect FM SG to FM ANT terminal | Connect Multimeter to across R71 | | IT02 | Multimeter's DC Voltage Maximum |
| 3 | | Connect FM stereo SG. to FM ANT terminal. (see Fig. 7-3-1) 19 kHz signal ON. Main channel, sub channel signal ON. add 1000 Hz signal from left CH. | Connect VTVM to right SP terminal | | T02<br>T03<br>VR01 | Minimum |
| 4 | | Connect FM stereo SG. to FM ANT terminal. (see Fig. 7-3-1) 19 kHz signal ON. Main channel, sub channel signal ON. add 1000 Hz signal from right CH. | Connect VTVM to left SP terminal | | T02<br>T03<br>VR01 | Minimum |
| Repeat Step 2 and 3 | | | | | | |

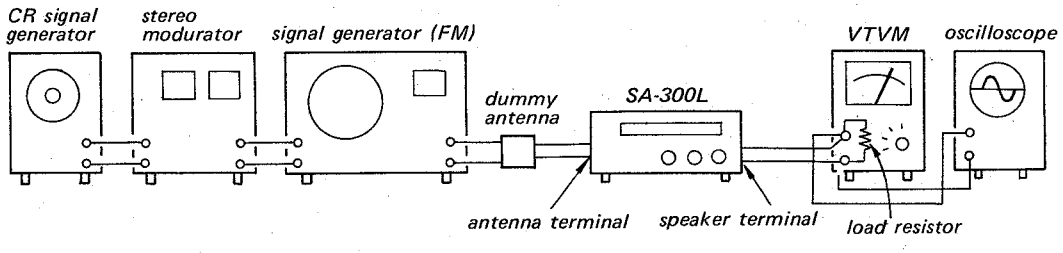



*Fig. 8-3-1.*
*FM MPX adjustment test set-up*

## 8-4. AUDIO ADJUSTMENTS

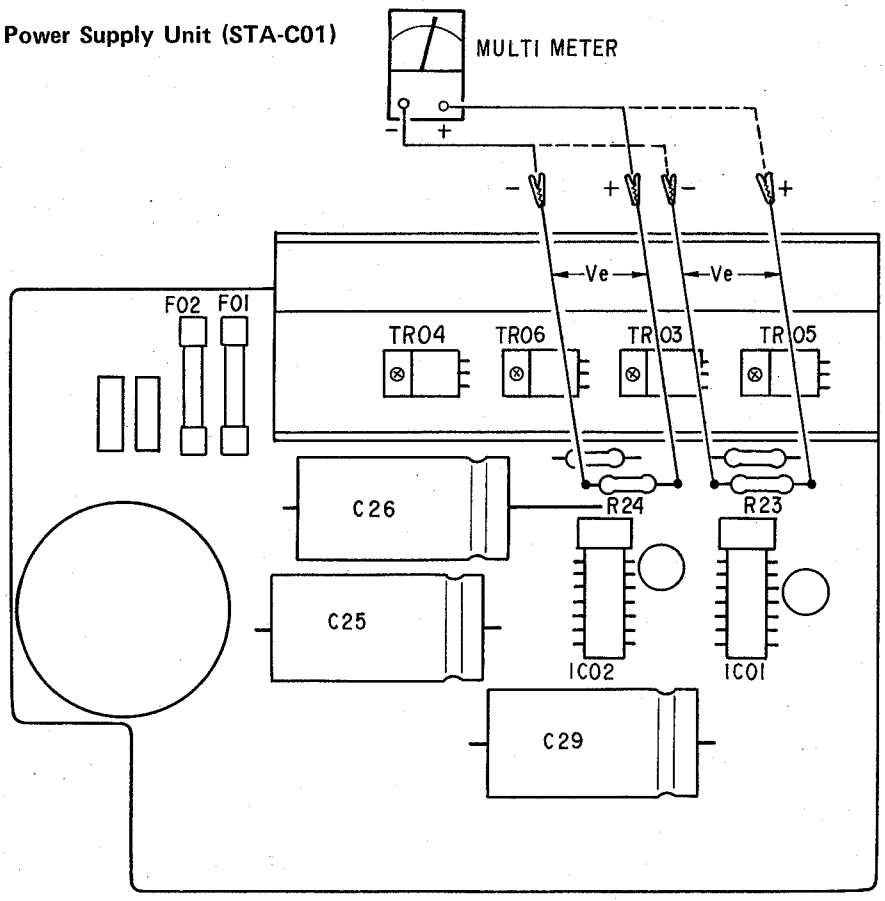
**Test Equipments Required**

1. Multi meter

**CAUTION:**

Never short-circuit the speaker terminal. When a strong input is fed to the speaker or the speaker terminal is short-circuited, the output circuit is protected against the possible damage through the protection fuse (F01, F02). When the protection circuit worked, change the attached 1.5A Fuse ( Ⓐ TLC Special Fuse) after taking away the mistake.

**Audio and Power Supply Unit (STA-C01)**




**Power Amprifier IC Idle Adjustment**

| Adjustment | Remarks |
|---|---|
| L ch : R36 | Adjust for Ve = 0.02 ~ 0.0025 Volts R23, R24 |
| R ch : R37 | Same as above |

Adjust R36 (R37) so that the multimeter indicates as shown in table.

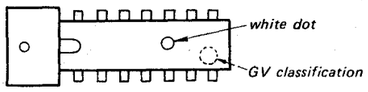
**Note:** Select the resistor either 15 k ohms or other value.

## 9. TROUBLE SHOOTING HINTS

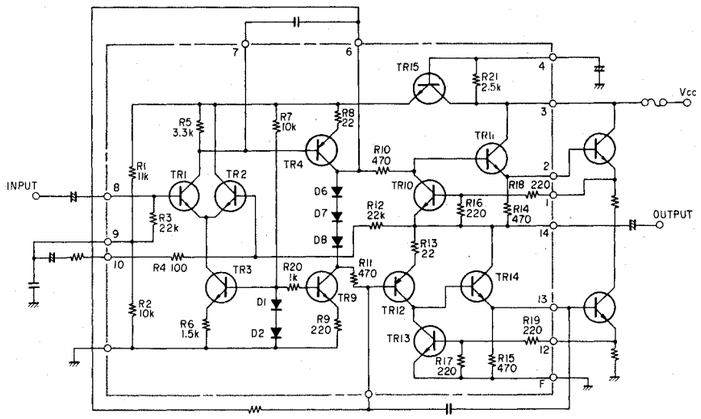
Model SA-300L uses the current limiter circuit for a momentary overload and the fuse for a continuous overload.

The current limiter circuit contained in the driver stage IC limits the transistor current to 2.8 A peak-to-peak for protecting the power transistors and the IC from surge current that is caused by a momentary overleveled input and short circuit of speaker terminals.

The special time-lag fuse (1.5 A, 125 V class A) to with stand heavy surges protects the unit from continuous over-current.




TA-7109P-JA or TA-7109AP-JA




7109P-JA having voltage ratings of 50 V is selected for use. It is marked with a white identification dot as shown.

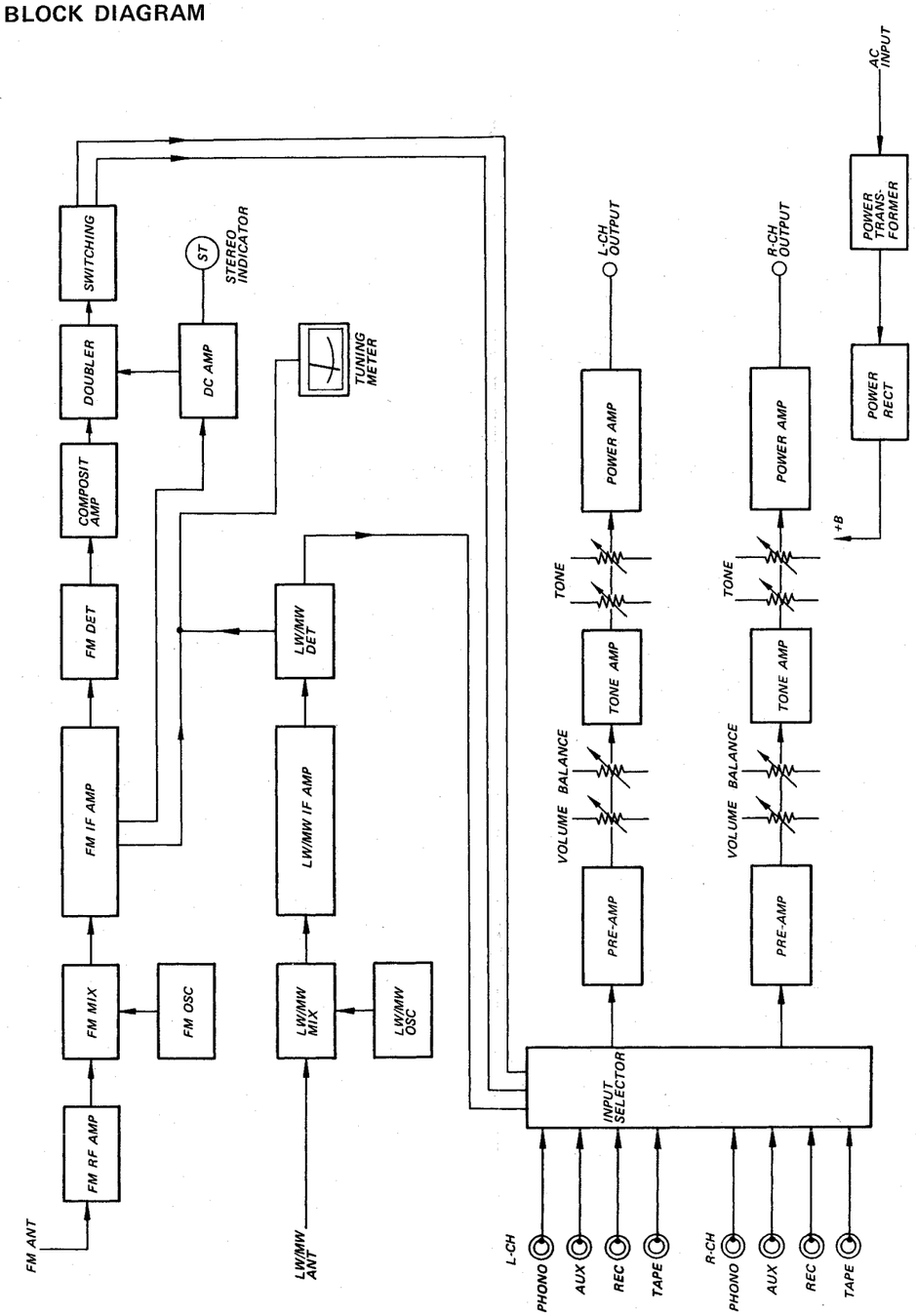
GV classification of the IC is as follows:

A: 34.5 to 36.5 dB
B: 35.5 to 37.5 dB
C: 36.5 to 38.5 dB

For replacement of the IC, use one whose GV classification is the same as the IC of the other channel.



## 10. BLOCK DIAGRAM



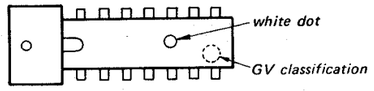
## MEMO

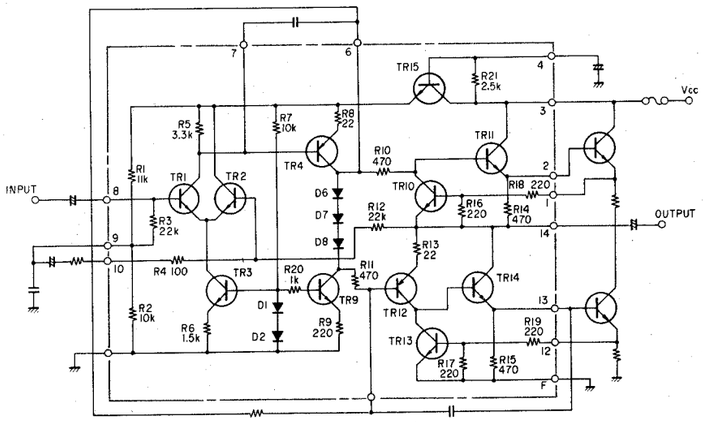


# 11. CIRCUIT SCHEMATIC AND MOUNTING DIAGRAMS

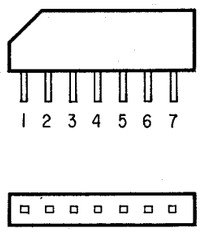
## 11-1. INTEGRATED CIRCUIT

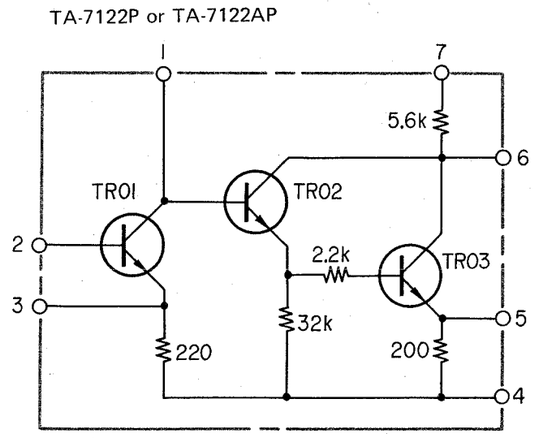
TA-7109P-JA or TA-7109AP-JA



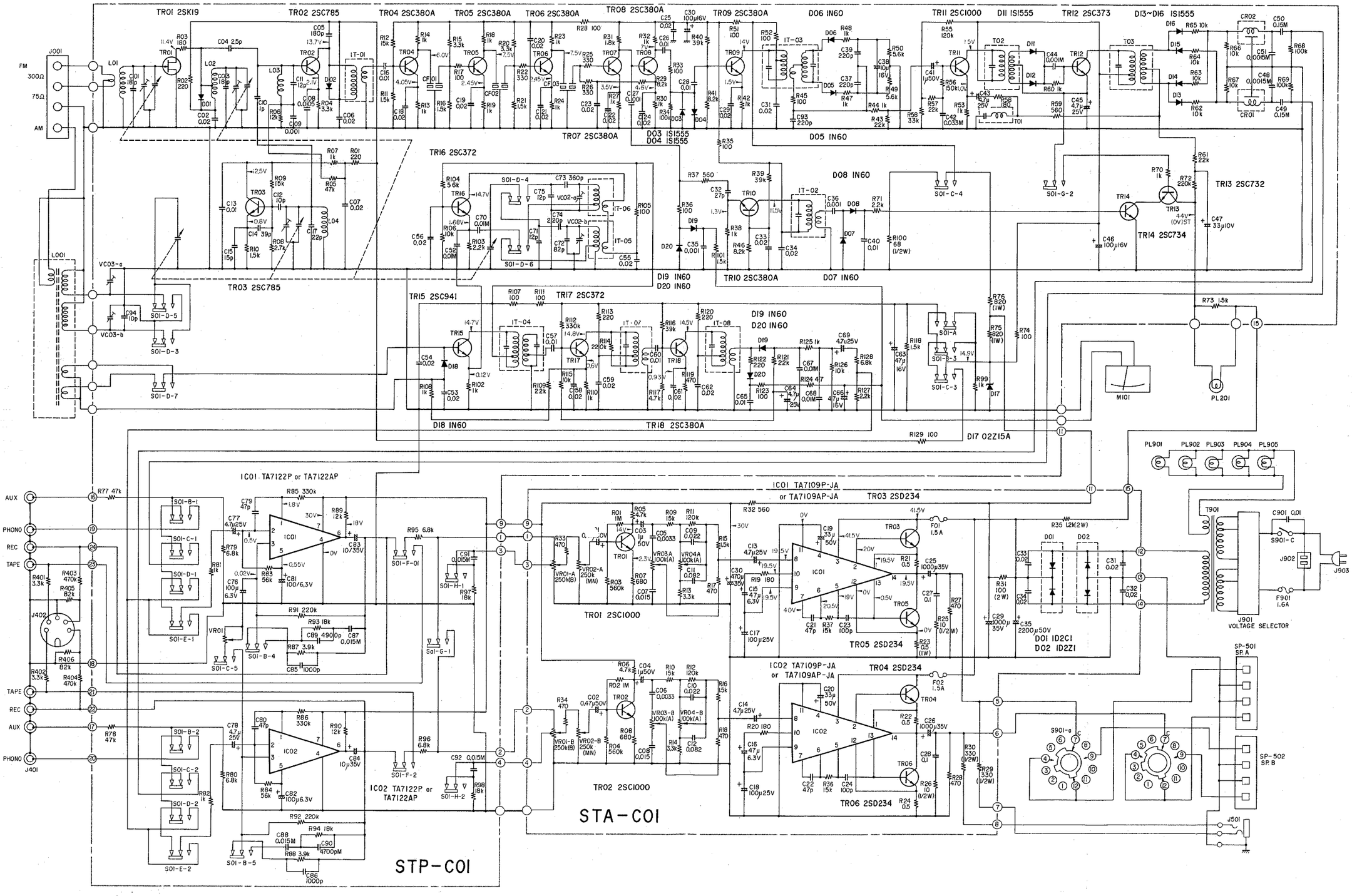




TA-7122P or TA-7122AP

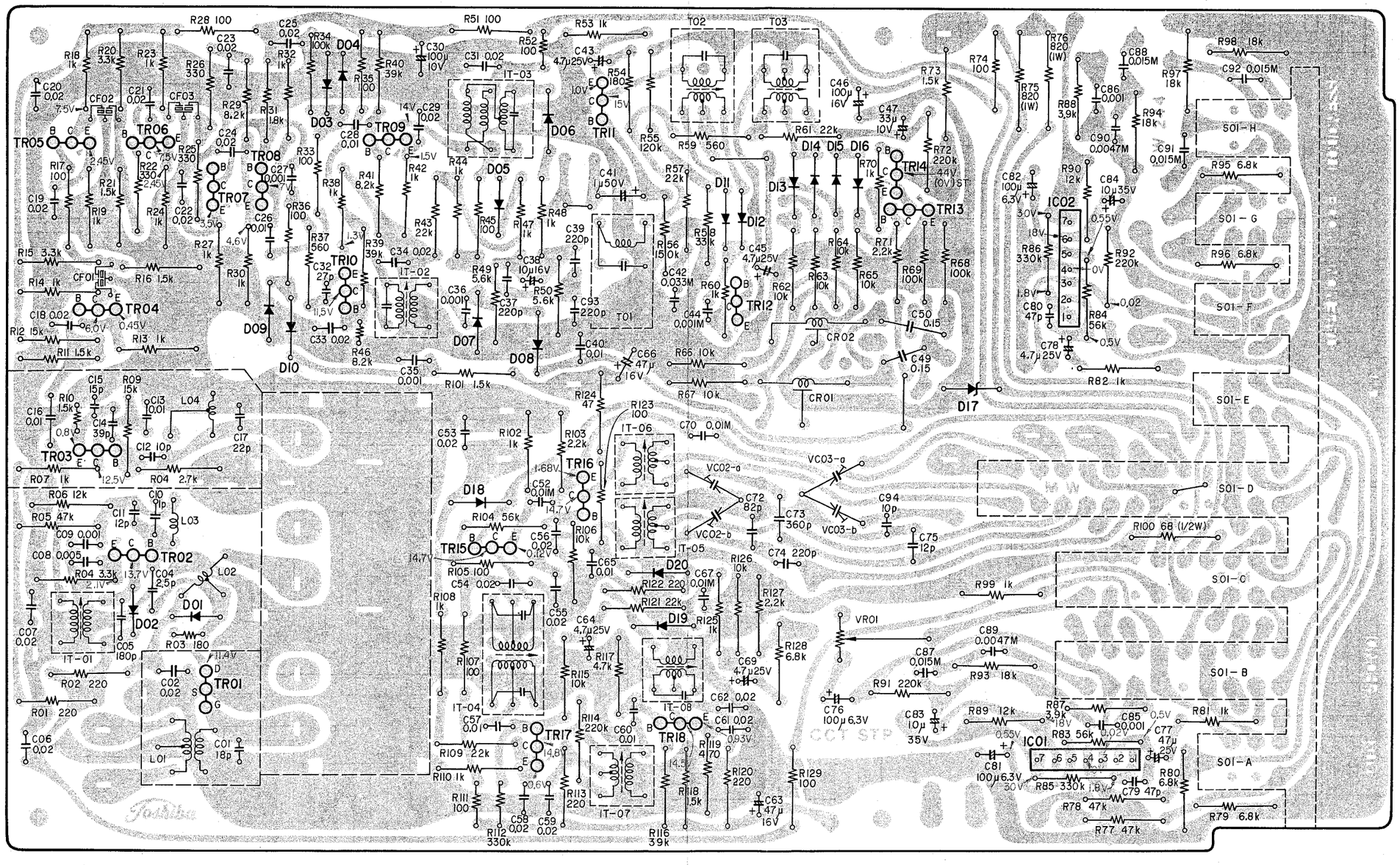


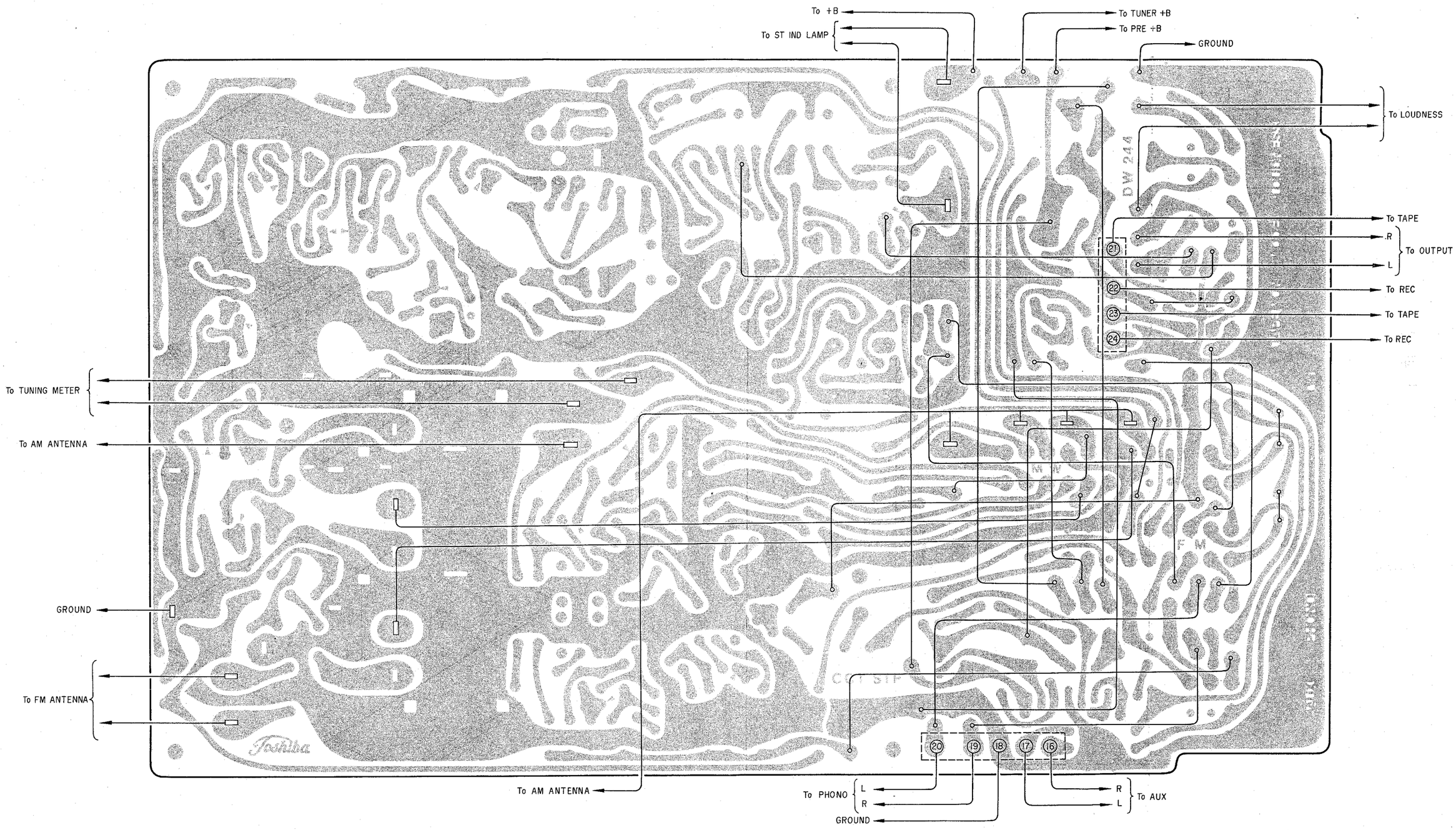



## 11-2. CIRCUIT SCHEMATIC GENERAL

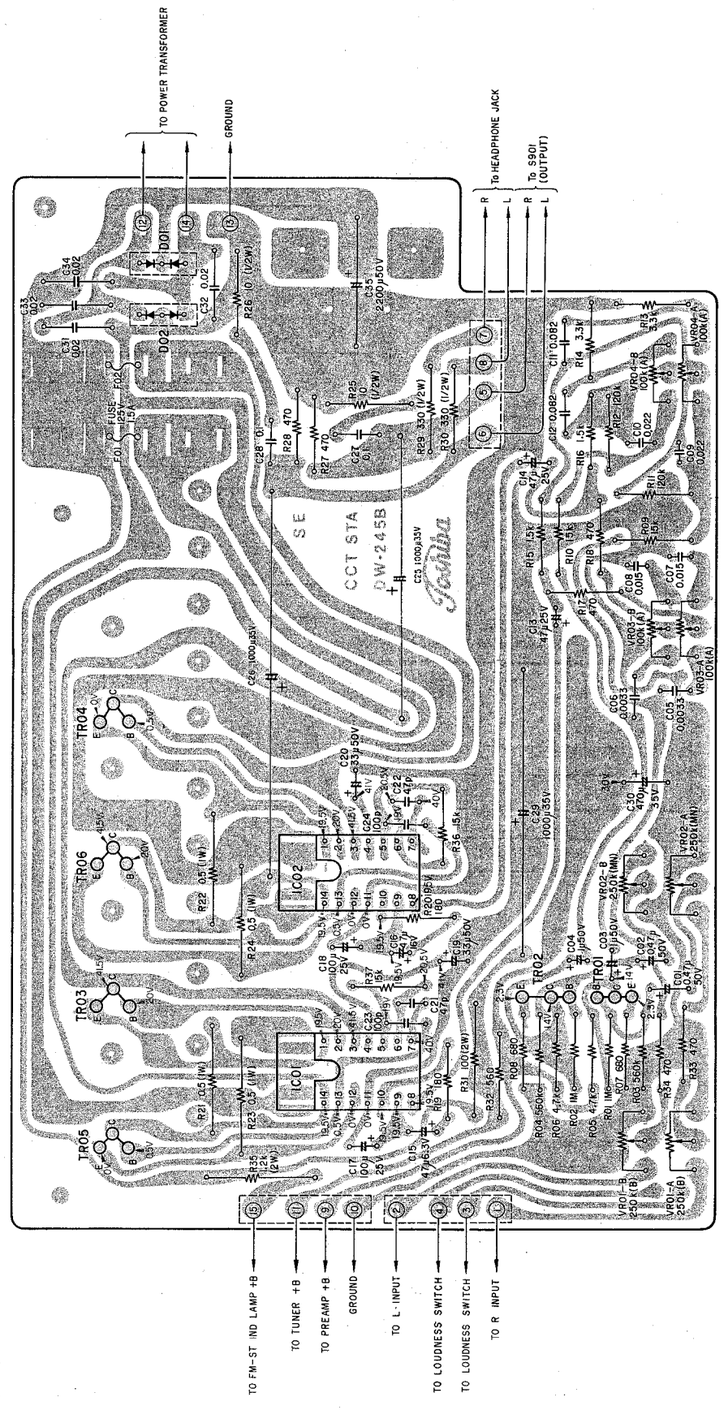


## 11-3. TUNER CIRCUIT BOARD MOUNTING DIAGRAM



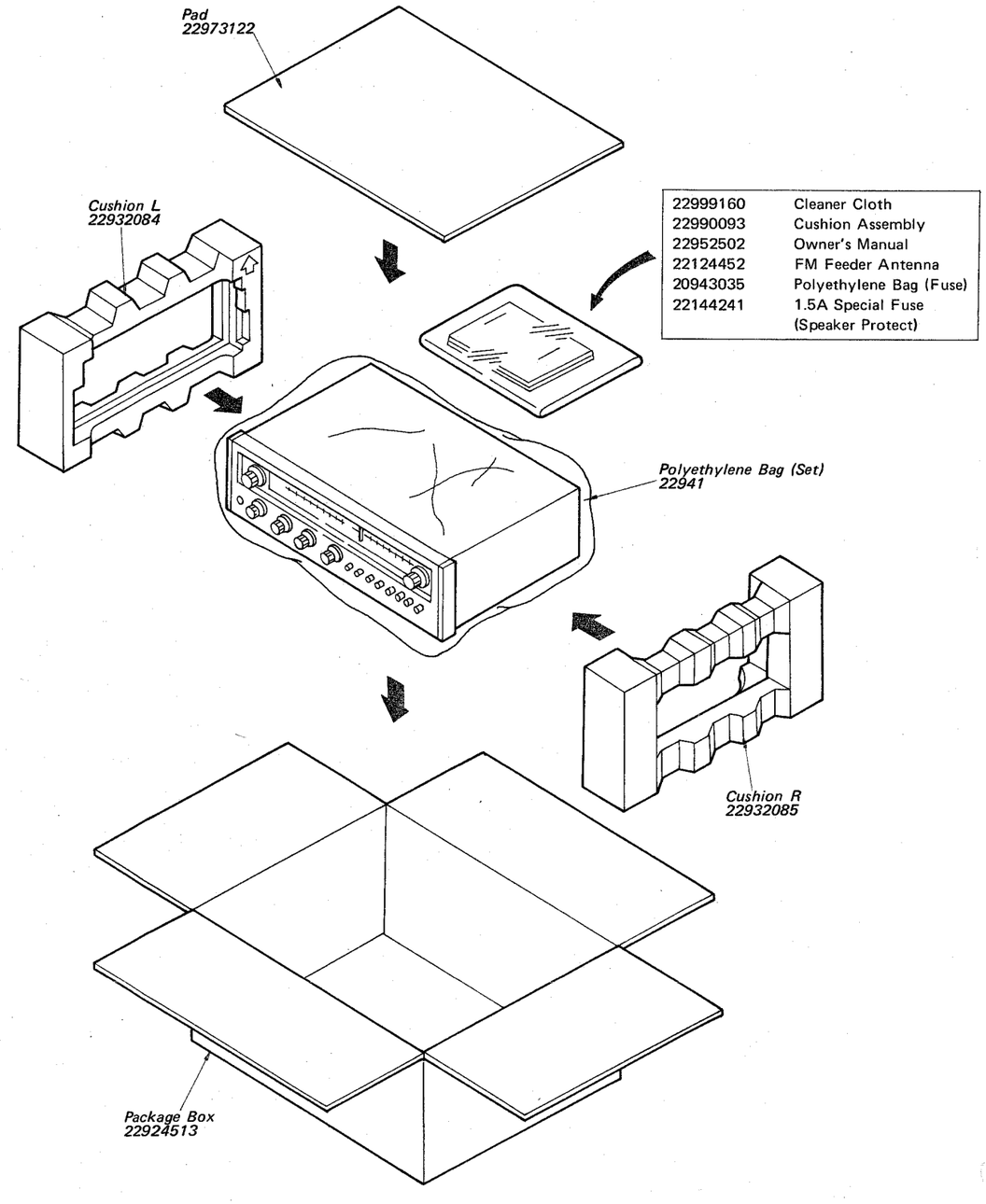

To +B
To ST IND LAMP
To TUNER +B
To PRE +B
GROUND
To LOUDNESS
To TAPE
R
L
To OUTPUT
To REC
To TAPE
To REC
To TUNING METER
To AM ANTENNA
GROUND
To FM ANTENNA
To AM ANTENNA
To PHONO
L
R
GROUND
R
L
To AUX
21
22
23
24
20
19
18
17
16
DW 244
AM
FM
Toshiba

## 11-4. AUDIO CIRCUIT BOARD MOUNTING DIAGRAM



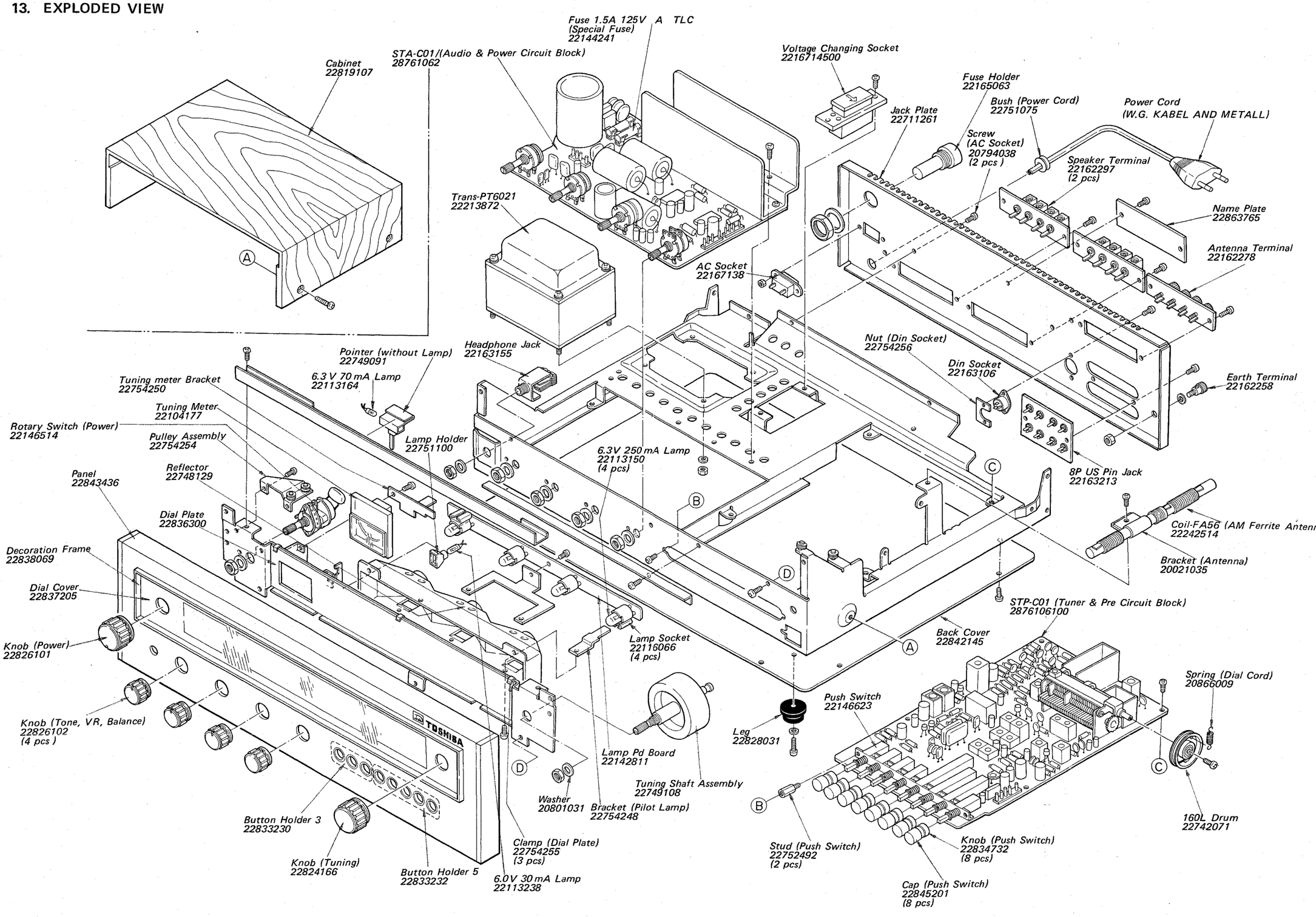



## 12. PACKING




| | |
|---|---|
| 22999160 | Cleaner Cloth |
| 22990093 | Cushion Assembly |
| 22952502 | Owner's Manual |
| 22124452 | FM Feeder Antenna |
| 20943035 | Polyethylene Bag (Fuse) |
| 22144241 | 1.5A Special Fuse (Speaker Protect) |

## 13. EXPLODED VIEW



## 14. PARTS LIST

| SYMBOL No. | PART No. | DESCRIPTION |
|---|---|---|
| **TUNER AND PRE AMP UNIT (CCT-STP-C01)** | | |
| **RESISTORS** | | |
| R01, 02 | 22544221 | 220ohm K 1/8W RD |
| R03 | 22544181 | 180ohm K 1/8W RD |
| R04 | 22544332 | 3.3kohm K 1/8W RD |
| R05 | 22544473 | 47kohm K 1/8W RD |
| R06 | 22544123 | 12kohm K 1/8W RD |
| R07 | 22544102 | 1kohm K 1/8W RD |
| R08 | 22544272 | 2.7kohm K 1/8W RD |
| R09 | 22544153 | 15kohm K 1/8W RD |
| R10, 11 | 22544152 | 1.5kohm K 1/8W RD |
| R12 | 22544153 | 15kohm K 1/8W RD |
| R13, 14 | 22544102 | 1kohm K 1/8W RD |
| R15 | 22544332 | 3.3kohm K 1/8W RD |
| R16 | 22544152 | 1.5kohm K 1/8W RD |
| R17 | 22544101 | 100ohm K 1/8W RD |
| R18, 19 | 22544102 | 1kohm K 1/8W RD |
| R20 | 22544332 | 3.3kohm K 1/8W RD |
| R21 | 22544152 | 1.5kohm K 1/8W RD |
| R22 | 22544331 | 330ohm K 1/8W RD |
| R23, 24 | 22544102 | 1kohm K 1/8W RD |
| R25, 26 | 22544331 | 330ohm K 1/8W RD |
| R27 | 22544102 | 1kohm K 1/8W RD |
| R28 | 22544101 | 100ohm K 1/8W RD |
| R29 | 22544822 | 8.2kohm K 1/8W RD |
| R30 | 22544102 | 1kohm K 1/8W RD |
| R31 | 22544182 | 1.8kohm K 1/8W RD |
| R32 | 22544102 | 1kohm K 1/8W RD |
| R33 | 22544101 | 100ohm K 1/8W RD |
| R34 | 22544104 | 100kohm K 1/8W RD |
| R35, 36 | 22544101 | 100ohm K 1/8W RD |
| R37 | 22544561 | 560ohm K 1/8W RD |
| R38 | 22544102 | 1kohm K 1/8W RD |
| R39, 40 | 22544393 | 39kohm K 1/8W RD |
| R41 | 22544822 | 8.2kohm K 1/8W RD |
| R42 | 22544102 | 1kohm K 1/8W RD |
| R43 | 22544223 | 22kohm K 1/8W RD |
| R44 | 22544102 | 1kohm K 1/8W RD |
| R45 | 22544101 | 100ohm K 1/8W RD |
| R46 | 22544822 | 8.2kohm K 1/8W RD |
| R47, 48 | 22544102 | 1kohm K 1/8W RD |
| R49, 50 | 22544562 | 5.6kohm K 1/8W RD |
| R51, 52 | 22544101 | 100ohm K 1/8W RD |
| R53 | 22544102 | 1kohm K 1/8W RD |
| R54 | 22544181 | 180ohm K 1/8W RD |
| R55 | 22544124 | 120kohm K 1/8W RD |
| R56 | 22544154 | 150kohm K 1/8W RD |
| R57 | 22544223 | 22kohm K 1/8W RD |
| R58 | 22544333 | 33kohm K 1/8W RD |
| R59 | 22544561 | 560ohm K 1/8W RD |
| R60 | 22544102 | 1kohm K 1/8W RD |
| R61 | 22544223 | 22kohm K 1/8W RD |
| R62,63,64 R65,66,67 | 22544103 | 10kohm K 1/8W RD |
| R68, 69 | 22544104 | 100kohm K 1/8W RD |
| R70 | 22544102 | 1kohm K 1/8W RD |
| R71 | 22544222 | 2.2kohm K 1/8W RD |
| R72 | 22544224 | 220kohm K 1/8W RD |
| R73 | 22544152 | 1.5kohm K 1/8W RD |
| R74 | 22544101 | 100ohm K 1/8W RD |
| R75, 76 | 22570017 | 820ohm K 1W RS |
| R77, 78 | 22544473 | 47kohm K 1/8W RD |
| R79, 80 | 22544682 | 6.8kohm K 1/8W RD |
| R81, 82 | 22544102 | 1kohm K 1/8W RD |
| R83, 84 | 22544563 | 56kohm K 1/8W RD |
| R85, 86 | 22544334 | 330kohm K 1/8W RD |
| R87, 88 | 22544392 | 3.9kohm K 1/8W RD |
| R89, 90 | 22544123 | 12kohm K 1/8W RD |
| R91, 92 | 22544224 | 220kohm K 1/8W RD |
| R93, 94 | 22544183 | 18kohm K 1/8W RD |
| R95, 96 | 22544682 | 6.8kohm K 1/8W RD |
| R97, 98 | 22544183 | 18kohm K 1/8W RD |
| R99 | 22544102 | 1kohm K 1/8W RD |
| R100 | 22563681 | 680ohm K 1/2W RC |
| R101 | 22544152 | 1.5kohm K 1/8W RD |
| R102 | 22544102 | 1kohm K 1/8W RD |
| R103 | 22544222 | 2.2kohm K 1/8W RD |
| R104 | 22544563 | 56kohm K 1/8W RD |
| R105 | 22544101 | 100ohm K 1/8W RD |
| R106 | 22544103 | 10kohm K 1/8W RD |
| R107 | 22544101 | 100ohm K 1/8W RD |
| R108 | 22544102 | 1kohm K 1/8W RD |
| R109 | 22544223 | 22kohm K 1/8W RD |
| R110 | 22544102 | 1kohm K 1/8W RD |
| R111 | 22544101 | 100ohm K 1/8W RD |
| R112 | 22544334 | 330kohm K 1/8W RD |
| R113 | 22544221 | 220ohm K 1/8W RD |
| R114 | 22544224 | 220kohm K 1/8W RD |
| R115 | 22544103 | 10kohm K 1/8W RD |
| R116 | 22544393 | 39kohm K 1/8W RD |
| R117 | 22544472 | 4.7kohm K 1/8W RD |
| R118 | 22544152 | 1.5kohm K 1/8W RD |
| R119 | 22544471 | 470ohm K 1/8W RD |
| R120 | 22544221 | 220ohm K 1/8W RD |
| R121 | 22544223 | 22kohm K 1/8W RD |
| R122 | 22544221 | 220ohm K 1/8W RD |
| R123 | 22544101 | 100ohm K 1/8W RD |
| R124 | 22544470 | 47ohm K 1/8W RD |
| R125 | 22544102 | 1kohm K 1/8W RD |



| SYMBOL No. | PART No. | DESCRIPTION |
|---|---|---|
| R126 | 22544103 | 10kohm K 1/8W RD |
| R127 | 22544222 | 2.2kohm K 1/8W RD |
| R128 | 22544682 | 6.8kohm K 1/8W RD |
| R129 | 22544101 | 100ohm K 1/8W RD |
| **CAPACITORS** | | |
| C01 | 22360146 | 18pF 50V J CC (RH) |
| C02 | 22342223 | 0.02μF Z CK |
| C03 | 22360146 | 18pF 50V J CC (RH) |
| C04 | 22361259 | 2.5pF 50V CC (SL) |
| C05 | 22360242 | 180pF 50V |
| C06, 07 | 22342223 | 0.02μF Z CK |
| C08 | 22342472 | 0.0047μF Z CK |
| C09 | 22341102 | 0.001μF P CK |
| C10 | 22361109 | 1pF 50V CC (SL) |
| C11 | 22362120 | 12pF 50V K CC (SL) |
| C12 | 22360131 | 10pF 50V J CC (CH) |
| C13 | 22342103 | 0.01μF Z CK |
| C14 | 22360137 | 39pF 50V J CC (CH) |
| C15 | 22360132 | 15pF 50V J CC (CH) |
| C16 | 22342103 | 0.01μF Z CK |
| C17 | 22360141 | 22pF 50V J CC (PH) |
| C18,19,20,21 C22,23,24,25 | 22342223 | 0.02μF Z CK |
| C26 | 22342103 | 0.01μF Z CK |
| C27 | 22341102 | 0.001μF P CK |
| C28 | 22342103 | 0.01μF Z CK |
| C29 | 22342223 | 0.02μF Z CK |
| C30 | 22445101 | 100μF 16WV CE |
| C31 | 22342223 | 0.02μF Z CK |
| C32 | 22362270 | 27pF 50V K CC (SL) |
| C33, 34 | 22342223 | 0.02μF Z CK |
| C35, 36 | 22341102 | 0.001μF P CK |
| C37 | 22343221 | 220pF 50V CK |
| C38 | 22445100 | 10μF 16WV CE |
| C39 | 22343221 | 220pF 50V CK |
| C40 | 22342103 | 0.01μF Z CK |
| C41 | 22448109 | 1μF 50WV CE |
| C42 | 22373333 | 0.033μF 50V M MY |
| C43 | 22446479 | 4.7μF 25WV CE |
| C44 | 22373102 | 0.001μF 50V M MY |
| C45 | 22446479 | 4.7μF 25WV CE |
| C46 | 22445101 | 100μF 16WV CE |
| C47 | 22443330 | 33μF 10WV CE |
| C48 | 22373152 | 0.0015μF 50V M MY |
| C49, 50 | 22373154 | 0.15μF 50V M MY |
| C51 | 22373152 | 0.0015μF 50V M MY |
| C52 | 22373103 | 0.01μF 50V M MY |
| C53,54,55,56 | 22342223 | 0.02μF Z CK |
| C57 | 22342103 | 0.01μF Z CK |
| C58, 59 | 22342223 | 0.02μF Z CK |
| C60 | 22342103 | 0.01μF Z CK |
| C61, 62 | 22342223 | 0.02μF Z CK |
| C63 | 22445470 | 47μF 16WV CE |
| C64 | 22446479 | 4.7μF 25WV CE |
| C65 | 22342103 | 0.01μF Z CK |
| C66 | 22445470 | 47μF 16WV CE |
| C67, 68 | 22373103 | 0.01μF 50V M MY |
| C69 | 22446479 | 4.7μF 25WV CE |
| C70 | 22373103 | 0.01μF 50V M MY |
| C71 | 22362120 | 12pF 50V K CC (SL) |
| C72 | 22362820 | 82pF 50V K CC (SL) |
| C73 | 22381361 | 360pF 50V J PE |
| C74 | 22381221 | 220pF 50V J PE |
| C75 | 22362120 | 12pF 50V K CC (SL) |
| C76 | 22442101 | 100μF 6.3WV CE |
| C77, 78 | 22446479 | 4.7μF 25WV CE |
| C79, 80 | 22362470 | 47pF 50V K CC (SL) |
| C81, 82 | 22442101 | 100μF 6.3WV CE |
| C83, 84 | 22447100 | 10μF 35WV CE |
| C85, 86 | 22341102 | 0.001μF P CK |
| C87, 88 | 22373153 | 0.015μF 50V M MY |
| C89, 90 | 22373472 | 0.0047μF 50V M MY |
| C91, 92 | 22373153 | 0.015μF 50V M MY |
| C93 | 22343221 | 220pF 50V CK |
| C94 | 22362100 | 10pF 50V K CC (SL) |
| C95 | 22361309 | 3pF 50V CC (SL) |
| VR01 | 22658179 | 5kohm B FM-ST Separation Control |
| VC01 | 22307354 | Variable Capacitor |
| VC02, 03 | 22309114 | Trimmer Capacitor |
| S01 | 22146623 | Push Switch |
| L01 | 22292037 | COIL-RT81T FM ANT |
| L02 | 22292043 | COIL-RT81T FM RF |
| L03 | 22291049 | RF-COIL-RC-408 |
| L04 | 22295016 | COIL-RT8057 FM OSC |
| CF01,02,03 | 22153024 | Ceremic Filter 10.7MHz |
| IT01 | 22265655 | IFT-IT6478 FM IFT |
| IT02 | 22265654 | IFT-IT6479 FM |
| IT03 | 22267306 | IFT-IT8475 Discre Trans |
| IT04 | 22264643 | IFT1106B AM IFT |
| IT05 | 22205029 | COIL-RT74 LW OSC |
| IT06 | 22245232 | COIL-RT7288 MW OSC |
| IT07 | 22264626 | IFT-IT5477 AM IFT |
| IT08 | 22266308 | IFT-IT5476 AM IFT |
| T01 | 22212028 | COIL-ST1112 19kHz Trap |
| T02 | 22212041 | COIL-ST31 19kHz |
| T03 | 22212042 | COIL-ST32 38kHz |
| CR01, 02 | 22134065 | CR-T-01 38kHz Trap |
| TR01 | | 2SK19-GR |

| SYMBOL No. | PART No. | DESCRIPTION |
|---|---|---|
| TR02, 03 | | 2SC785-O |
| TR04~10 | | 2SC380A-O |
| TR11 | | 2SC1000-GR |
| TR12 | | 2SC373 |
| TR13 | | 2SC732-GR |
| TR14 | | 2SC734-GR |
| TR15 | | 2SC941-Y |
| TR16, 17 | | 2SC372-O |
| TR18 | | 2SC380A-O |
| D01,02,03,04 | | 1S1555V |
| D05, 06 | | 1N60-MPX |
| D07,08,09,10 | | 1N60 |
| D11,12,13,14 | | |
| D15, 16 | | 1S1555V |
| D17 | | 02Z15A |
| D18 | | 1N60 |
| D19 | | 1N60-MPX |
| D20 | | 1N60 |
| IC01, 02 | | TA7122P or TA7122AP |

**AUDIO AND POWER SUPPLY UNIT (CCT-STA-C01)**

**RESISTORS**

| | | |
|---|---|---|
| R01, 02 | 22544105 | 1Mohm K 1/8W RD |
| R03, 04 | 22544564 | 560kohm K 1/8W RD |
| R05, 06 | 22544472 | 4.7kohm K 1/8W RD |
| R07, 08 | 22544681 | 680ohm K 1/8W RD |
| R09, 10 | 22544153 | 15kohm K 1/8W RD |
| R11, 12 | 22544124 | 120kohm K 1/8W RD |
| R13, 14 | 22544332 | 3.3kohm K 1/8W RD |
| R15, 16 | 22544152 | 1.5kohm K 1/8W RD |
| R17, 18 | 22544471 | 470ohm K 1/8W RD |
| R19, 20 | 22544181 | 180ohm K 1/8W RD |
| R21,22,23,24 | 22570031 | 0.5ohm K 1W RS |
| R25, 26 | 22563100 | 10ohm K 1/2W RC |
| R27, 28 | 22544471 | 470ohm K 1/8W RD |
| R29, 30 | 22563331 | 330ohm K 1/2W RC |
| R31 | 22570021 | 100ohm K 2W RS |
| R32 | 22544561 | 560ohm K 1/8W RD |
| R33, 34 | 22544471 | 470ohm K 1/8W RD |
| R35 | 22570075 | 1.2kohm K 2W RS |
| R36, 37 | 22544153 | 15kohm K 1/8W RD |
| C01, 02 | 22558478 | 0.47μF 50WV CE |
| C03, 04 | 22448109 | 1μF 50WV CE |
| C05, 06 | 22373332 | 0.0033μF 50V M MY |
| C07, 08 | 22373153 | 0.015μF 50V M MY |
| C09, 10 | 22373223 | 0.022μF 50V M MY |
| C11, 12 | 22373823 | 0.082μF 50V M MY |
| C13, 14 | 22446479 | 4.7μF 25WV CE |
| C15, 16 | 22442470 | 47μF 6.3WV CE |
| C17, 18 | 22446101 | 100μF 25WV CE |
| C19, 20 | 22448330 | 33μF 50WV CE |

| SYMBOL No. | PART No. | DESCRIPTION |
|---|---|---|
| C21, 22 | 22362470 | 47pF 50V K CC (SL) |
| C23, 24 | 22343101 | 100pF 50V CK |
| C25, 26 | 22457102 | 1000μF 35WV CE |
| C27, 28 | 22373104 | 0.1μF 50V M MY |
| C29 | 22457102 | 1000μF 35WV CE |
| C30 | 22447471 | 470μF 35WV CE |
| C31~34 | 22340032 | 0.02μF AC500V Z CK |
| C35 | 22430028 | 2200μF 50WV CE |
| VR01 | 22650420 | 250kohm B (Volume) |
| VR02 | 22650418 | 250kohm MN (Balance) |
| VR03, 04 | 22650419 | 100kohm A (Treble, Bass) |
| F01, 02 | 22144172 | Fuse 1.25A 125V |
| Tr01, 02 | | 2SC1000-BL |
| Tr03~06 | | 2SD234-Y |
| D01 | | 1D2C1 |
| D02 | | 1D2Z1 |
| IC01, 02 | | TA7109P-JA or TA7109AP-JA |
| | | AC-55B Accesory of Transistor |

**ELECTRICAL PARTS**

| | | |
|---|---|---|
| T901 | 22213872 | TRANS-PT6021 Power Trans |
| S901 | 22146514 | Rotary Switch Power |
| STP-C01 S01 | 22146623 | Push Switch |
| STA-C01 F01, 02 | 22144241 | Fuse 1.5A 125V ( A TLC Special Fuse) |
| F901 | 22144175 | Fuse 1.6A 250V |
| | 22165048 | Fuse Holder |
| | 22165063 | Fuse Holder |
| M101 | 22104177 | Tuning Meter |
| PL905 | 22113164 | 6.3V 70mA Lamp Pointer |
| PL201 | 22113238 | 6.0V 30mA Lamp Stereo Indicator |
| PL901~904 | 22113150 | 6.3V 250mA Lamp Dial 3 Tuning Meter 1 |
| | 22116066 | Lamp Socket |
| | 22142811 | Lamp PC Board |
| J901 | 22167145 | Voltage Changing Socket |
| J501 | 22163155 | Headphone Jack |
| | 22162258 | Earth Terminal |
| J001 | 22162278 | Antenna Terminal |
| SP501, 502 | 22162294 | Speaker Terminal |
| J401 | 22163213 | 8P US Pin Jack |
| J402 | 22167131 | DIN Socket |
| J902 | 22167138 | AC Socket |
| | 22168062 | Feeder Cable |
| J903 | 22176286 | Power Cord (W.G. KABEL und METALL) |
| | 22167411 | 5P-SOCKET |
| | 22167410 | 4P-SOCKET |
| L001 | 22242514 | COIL-FA56 AM Ferrit Antenna |