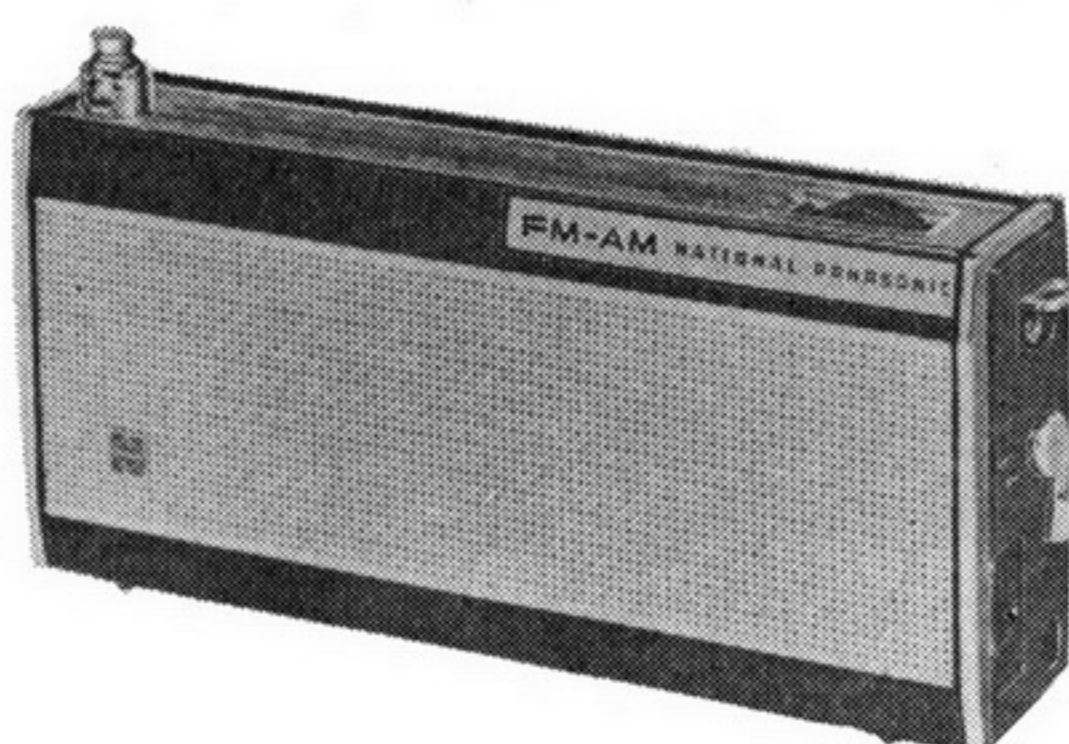


NATIONAL PANASONIC

RADIO SERVICE MANUAL



MODEL RF-820L FM-AM 8-TRANSISTOR PORTABLE RADIO

SPECIFICATIONS

Frequency Range :	FM 87 ~ 108MC (3.5 ~ 2.8m)
	LW 150 ~ 300KC (2000 ~ 1000m)
	MW 520 ~ 1610KC (577 ~ 186m)
Intermediate Frequency :	FM 10.7MC
	AM 455KC
Transistors :	2SA71 (OC171) FM RF Amplifier
	2SA241 FM Converter
	2SA70 (OC170) FM 1st IF Amp. & AM Conv.
	2SA70 (OC170) FM 2nd IF & AM IF Amp.
	2SB173 (OC71) 1st AF Amplifier
	2SB175 (OC75) 2nd AF Amplifier
	2SB176 } (OC76) } Power Output
	2SB176 } (OC76) }
Diodes :	O A 70 FM Limiter
	O A 70 AM Detector & AGC
	O A 70 } FM Detector
	O A 70 }
Sensitivity :	FM 5 μ V/ 30db Quieting
	3 μ V/ For 50mW Output
	LW 300 μ V/m For 50mW Output
	MW 100 μ V/m For 50mW Output
Power Output :	220mW undistorted
	350mW maximum
Batteries :	Four "AA" size flashlight batteries
Speaker :	10cm \times 6.5cm (4" \times 2 $\frac{1}{2}$ ") oval
	PM dynamic speaker
Cabinet Dimensions :	210 (w) \times 98 (h) \times 45 (d) mm
	(8 $\frac{1}{4}$ " \times 3 $\frac{7}{8}$ " \times 1 $\frac{25}{32}$ ")
Weight :	700gs. (1 lb. 7 ozs.) with batteries

MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.

Kadoma, Osaka, Japan

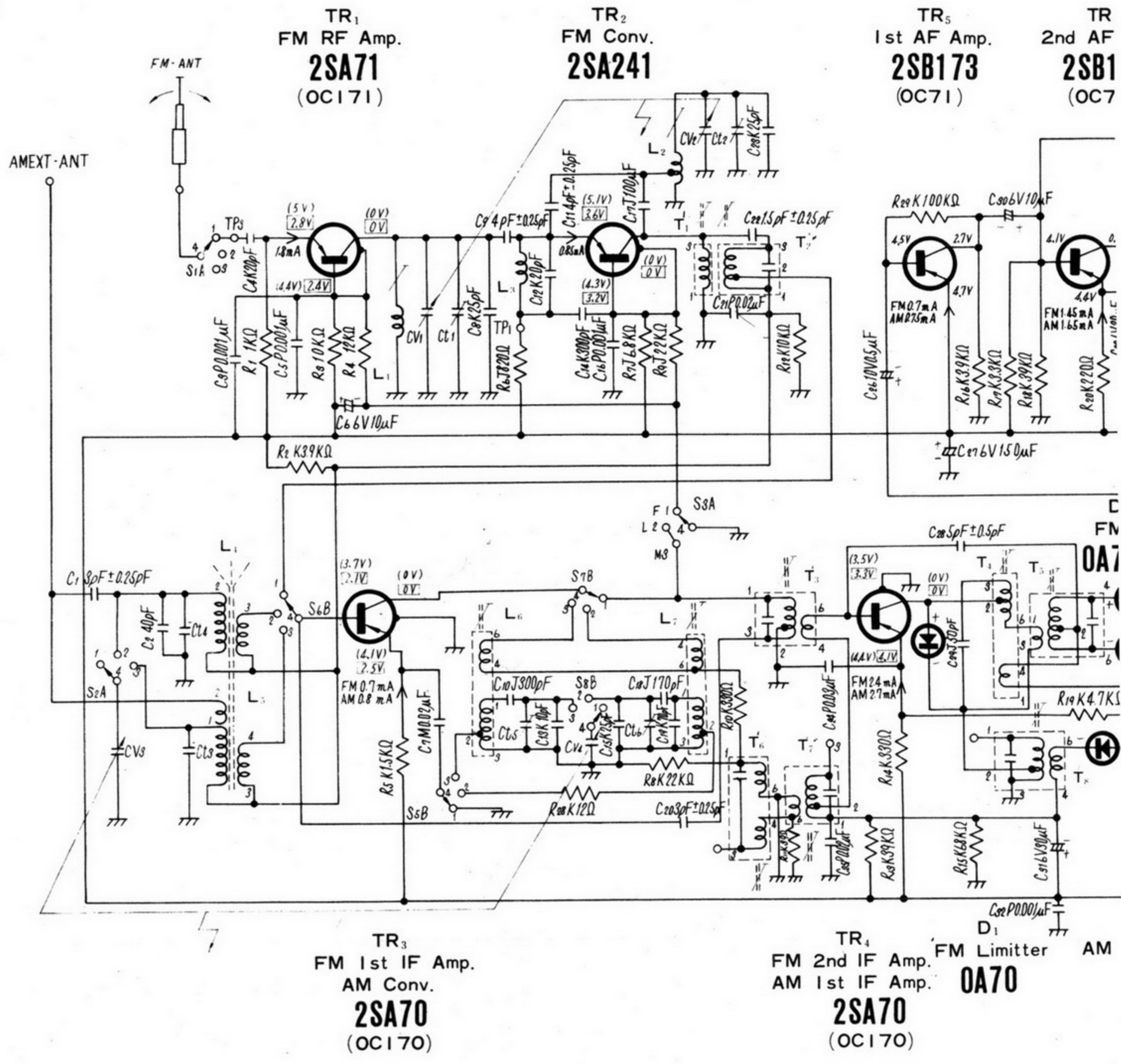
Export Division

MATSUSHITA ELECTRIC TRADING CO., LTD.

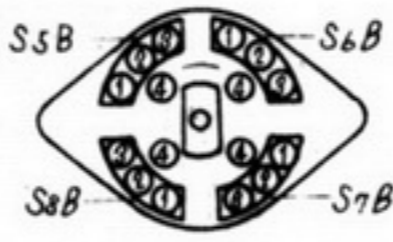
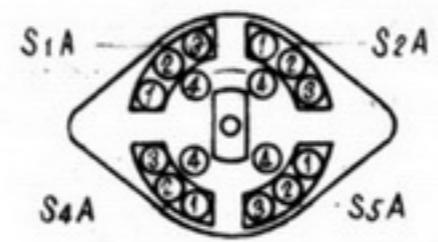
P. O. Box Osaka Central 288, Osaka

P. O. Box Tokyo Central 264, Tokyo

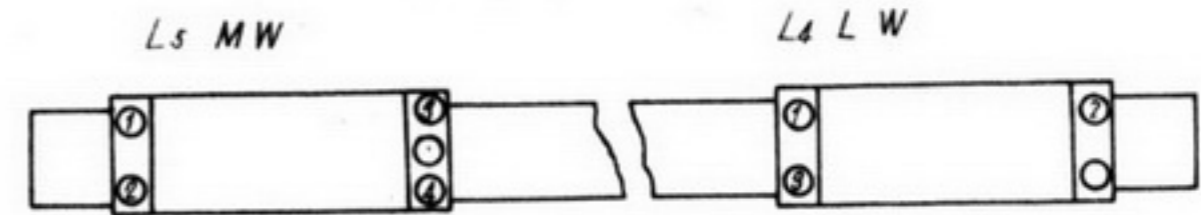
SCHEMATIC DIAGRAM



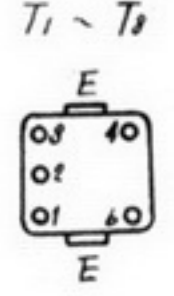
C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
R	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32



Band Selector Switch



MW, LW Antenna coil



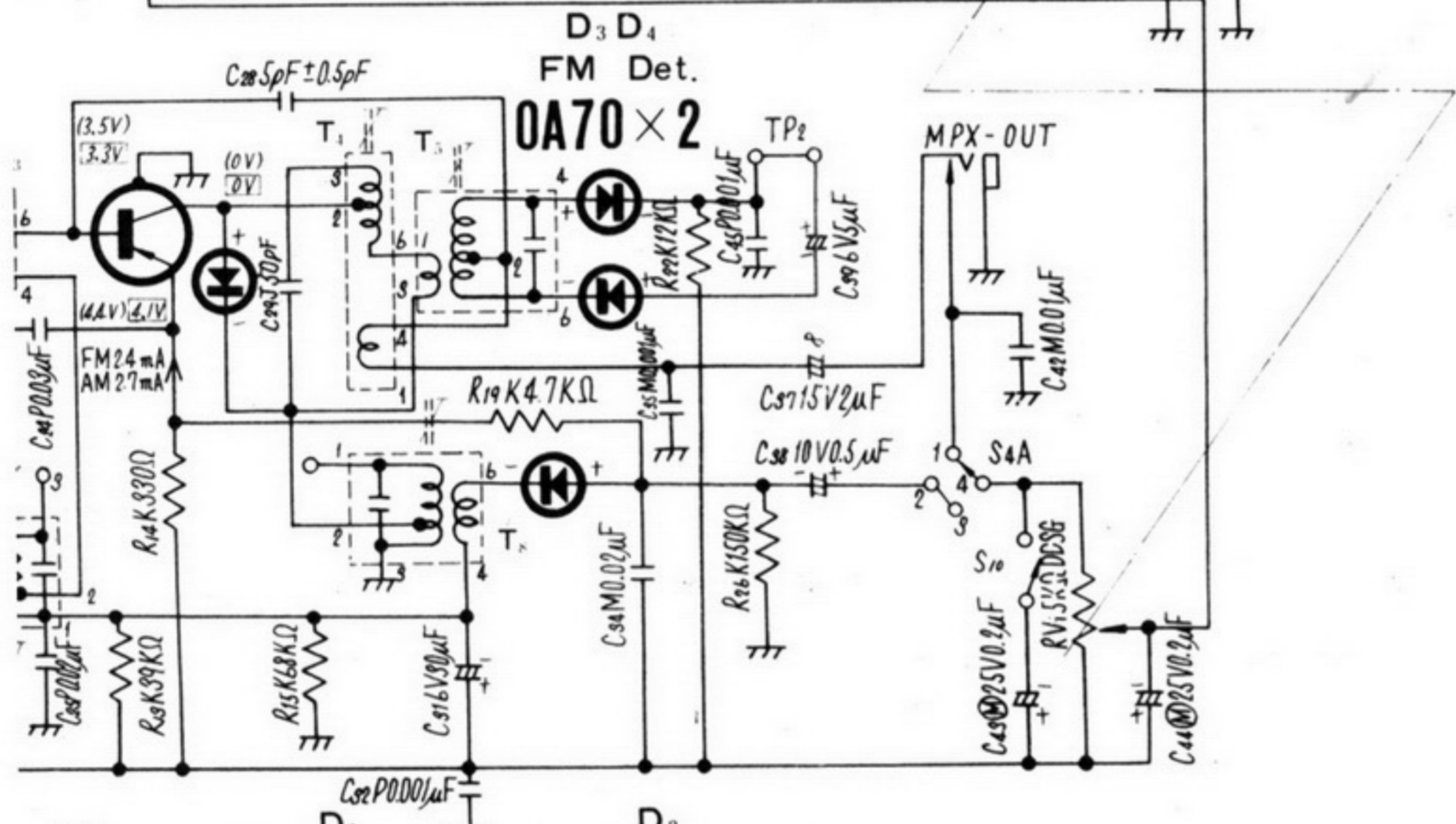
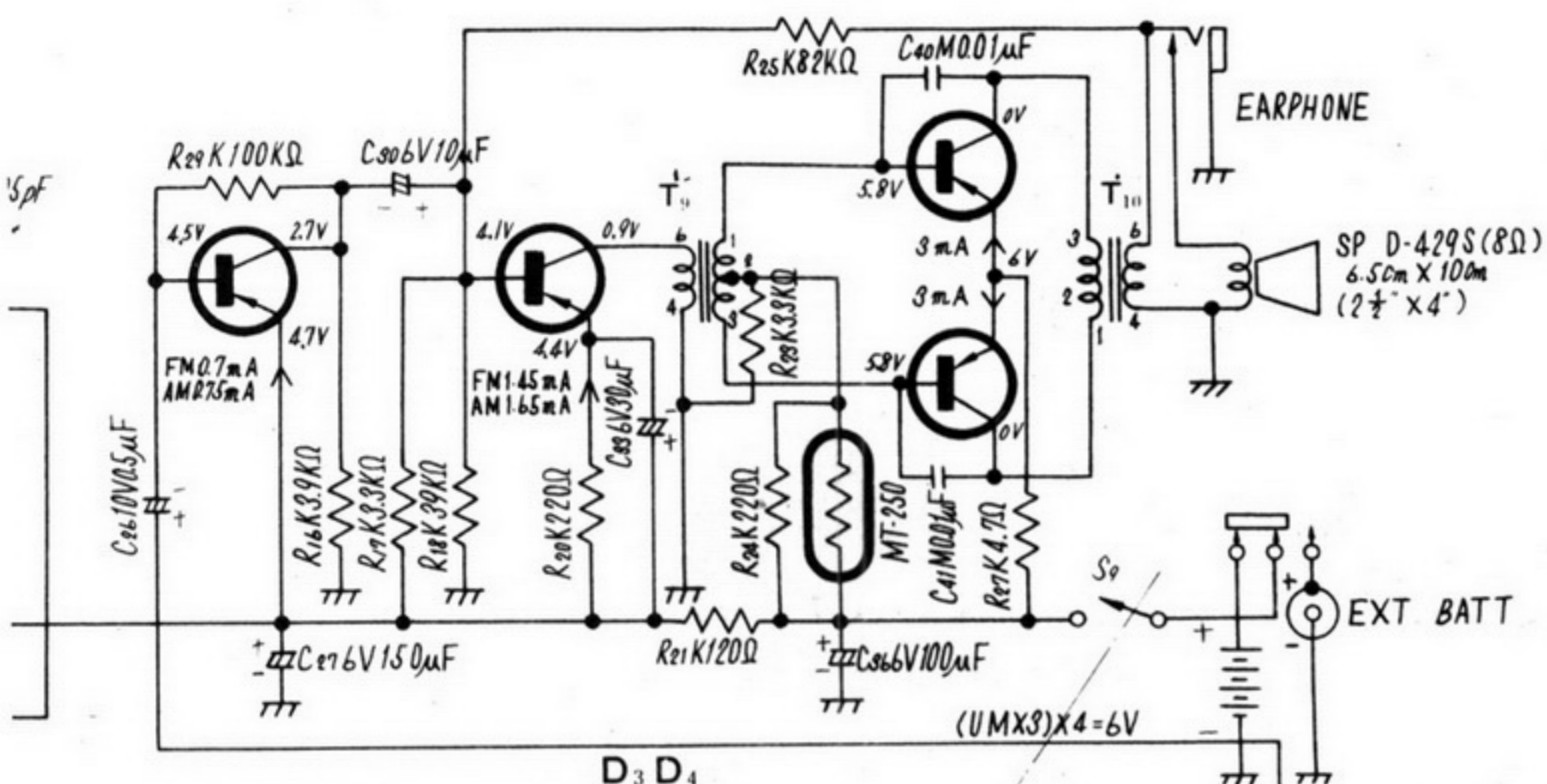
IFT IP

Notes:

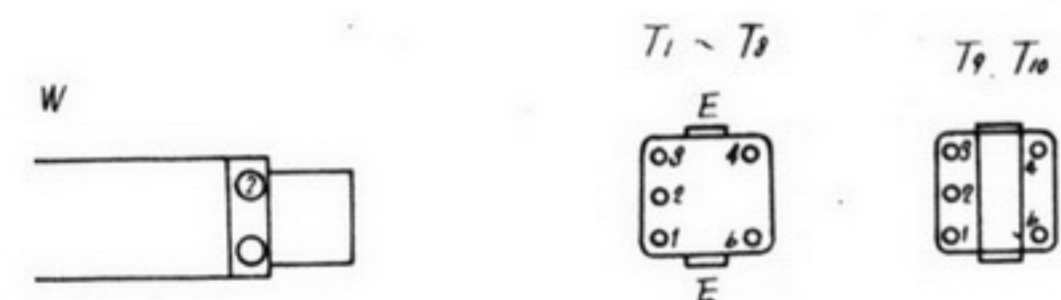
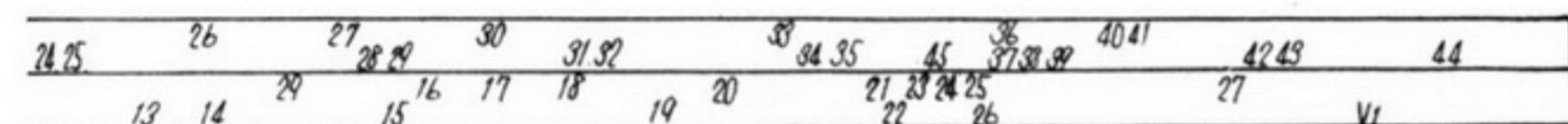
1. S₁ ~ S₈ : Band selector switch in "FM" position
2. S₉ : Power source switch in "OFF" position
3. S₁₀ : Tone selector switch in "H" position
4. Voltage measurements are under no signal with a 10K Ω /Volt voltmeter and are positive to ground.
5. The capital letters (M, K, J, P) in the circles indicate FM position () indicate AM position.

DIAGRAM

TR₅ 1st AF Amp. **2SB173** (OC71)
 TR₆ 2nd AF Amp. **2SB175** (OC75)
 TR₇ TR₈ Output **2SB176 × 2** (OC76)



TR₄ 2nd IF Amp. **2SA70** (OC170)
 FM Limiter **OA70**
 D₁ AM Det. & AGC **OA70**
 D₂



IFT IPT & OPT

and selector switch in "FM" position.
 power source switch in "OFF" position.
 one selector switch in "H" position.
 measurements are under no signal conditions taken
 Ω/Volt voltmeter and are positive with respect
 ...FM position ().....AM position
 letters (M, K, J, P) in the circuit diagram show

allowable deviation of resistors and capacitors as follows.
 M.....±20% K.....±10% J.....±5% P.....+100%
 - 0%

- 6. PF = Pico farad = mmf
- μF = micro farad = MF
- 6. Battery current No signal FM 15~25mA
 AM 12~22mA
 Maximum output FM, AM~90120mA