

SONY®

SEMICONDUCTORS

2SC1817

[TENTATIVE]

RF POWER TRANSISTOR

2SC1817 is designed for HF and VHF Power Amplifier Applications. Most useful for 12-Watt SSB Citizens Band Transceiver Output Stage.

1. Features

- High Output Power
- Good Linearity
- Large Surge Capability
- High Reliability

15 W min. $\left(\begin{array}{l} f = 27 \text{ MHz} \\ V_{CC} = 12 \text{ V} \\ P_i = 1.0 \text{ W} \end{array} \right)$

2. Construction

NPN SEP type Silicon Transistor

3. Application

HF and VHF Power Amplifier

4. Outline

TO-220 (JEDEC)

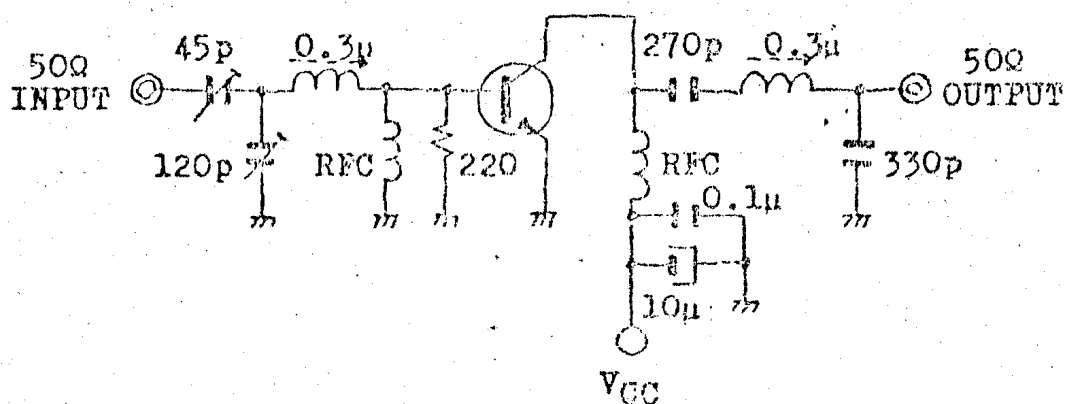
5. Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Collector - Base Voltage	V_{CB0}	45	V
Collector-Emitter Voltage	V_{CE0}	20	V
Emitter - Base Voltage	V_{EB0}	4	V
Collector Current	I_C	8	A(Pulse)
Collector Current	I_C	5	A
Collector Power Dissipation	P_C	25	W($T_c = 25^\circ\text{C}$)
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-50 +150	$^\circ\text{C}$

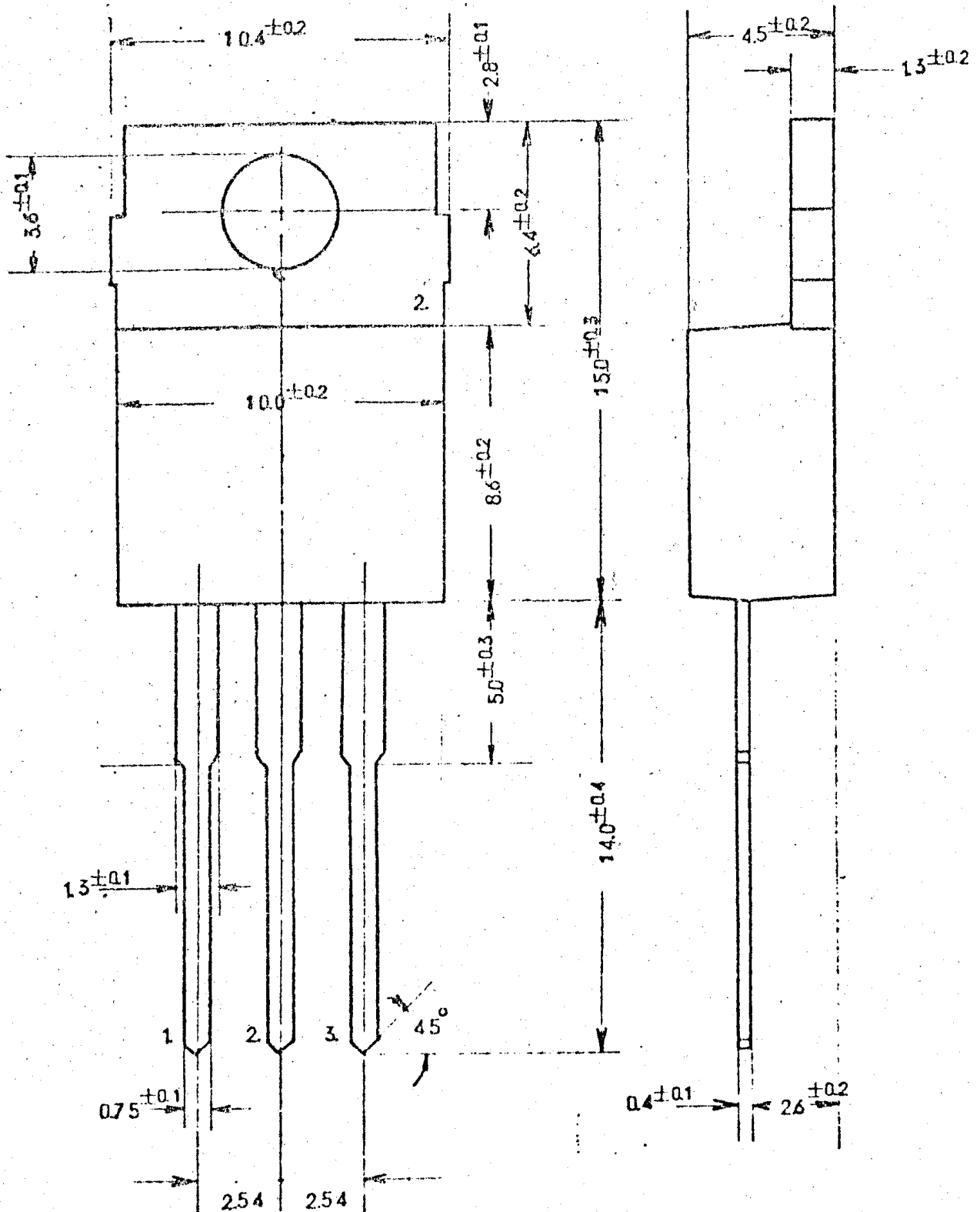
6. Electrical Characteristics ($T_a=25^\circ\text{C}$)

Characteristic		Conditions	Min.	Typ.	Max.	Unit
Collector Cut off Current	I_{CES}	$V_{CE}=40\text{ V}$ $R_{BE}=0$			2	μA
Emitter Cut off Current	I_{EBO}	$V_{EB}=4\text{ V}$			2	μA
Collector-Base Voltage	V_{CBO}	$I_C=0.1\text{mA}$	45			V
Collector-Emitter Voltage	V_{CEO}	$I_C=10\text{mA}$	20			V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=2\text{ A}$		0.2	0.35	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_B=0.2\text{A}$		0.9	1.0	V
DC Current Gain	h_{FE}	$V_{CE}=2\text{V}$ $I_C=0.1\text{A}$	25		140	
Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0$ $f=1\text{ MHz}$		80	100	pF
Gain Bandwidth Product	f_T	$V_{CE}=10\text{V}$ $I_E=-1\text{A}$	150	250		MHz
Output Power	P_O	$V_{CC}=12\text{V}$ $f=27\text{MHz}$ $P_i=1.0\text{W}$	15	20		W
Collector Efficiency	η_C	See Fig.1	60			%
Input Impedance	Z_{in}	$V_{CC}=12\text{V}$		25 -j2.0		Ω
Output Impedance	Z_{out}	$f=27\text{MHz}$ $P_o=15\text{W}$		5.1 -j2.8		Ω

Fig.1 Test Circuit



DIMENSIONAL OUTLINE



Dimensions in millimeters

Lead A1 - Base

Lead A2 - Collector(Flange)

Lead A3 - Emitter