

# 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)

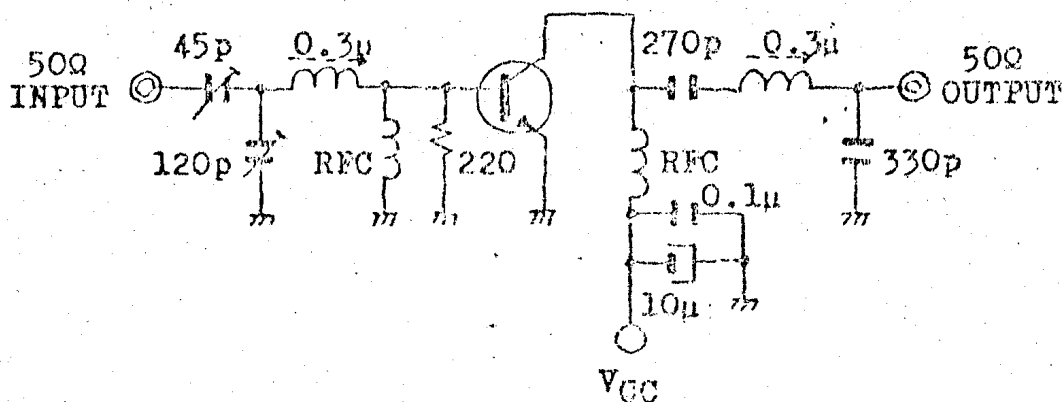
## 5. Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Collector - Base Voltage	$V_{CB0}$	45	V
Collector-Emmitter 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	$^\circ\text{C}$

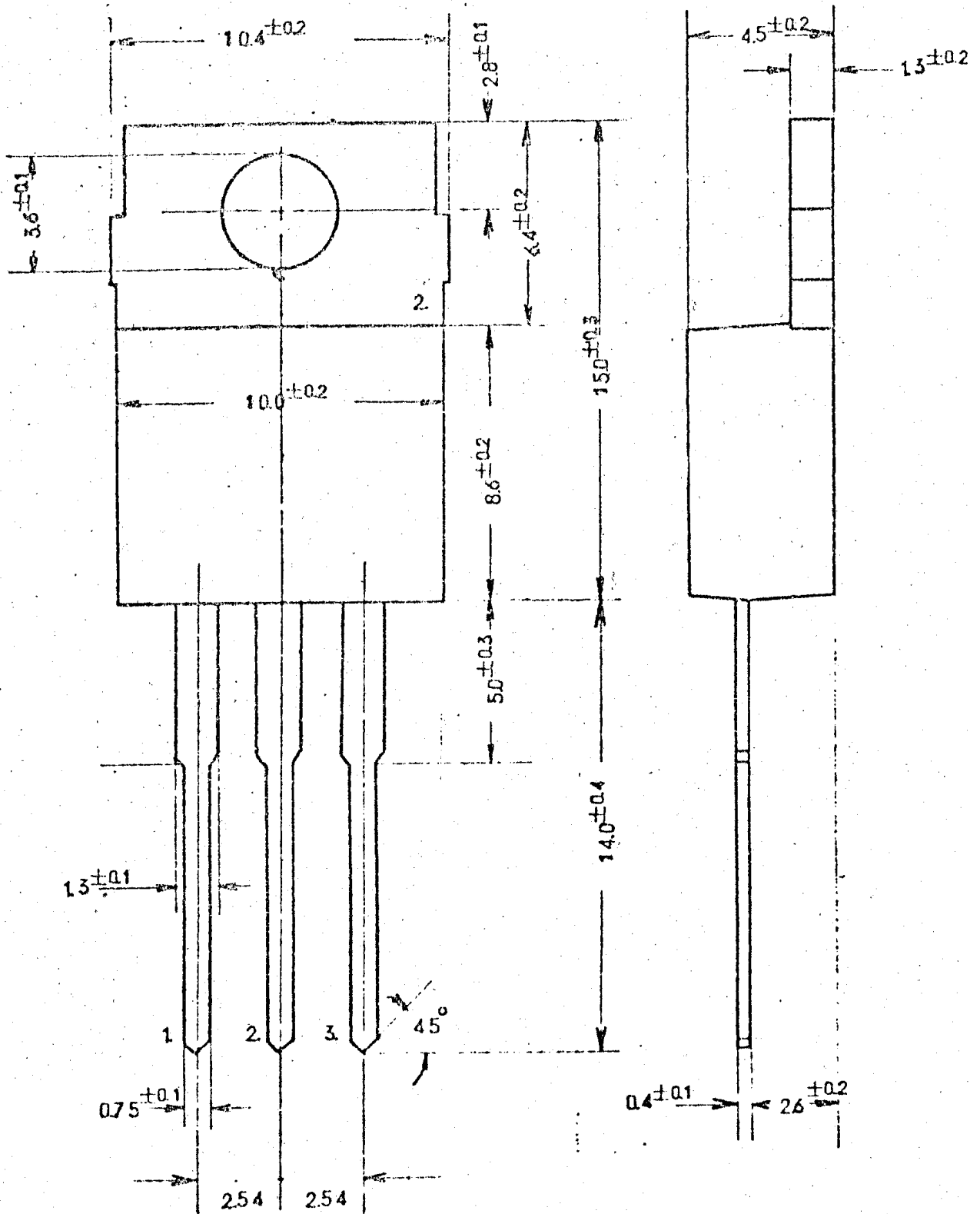
6. Electrical Characteristics ( $T_a=25^\circ\text{C}$ )

Characteristic		Conditions	Min.	Typ.	Max.	Unit
Collector Cut off Current	$I_{CES}$	$V_{CE}=40\text{ V}$ $R_{BE}=0$			2	$\mu\text{A}$
Emitter Cut off Current	$I_{EBO}$	$V_{EB}=4\text{ V}$			2	$\mu\text{A}$
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	$\eta_C$	See Fig.1	60			%
Input Impedance	$Z_{in}$	$V_{CC}=12\text{V}$		25 -j2.0		$\Omega$
Output Impedance	$Z_{out}$	$f=27\text{MHz}$ $P_o=15\text{W}$		5.1 -j2.8		$\Omega$

Fig.1 Test Circuit



# DIMENSIONAL OUTLINE



Dimensions in millimeters

Lead  $\#1$  - Base

Lead  $\#2$  - Collector (Flange)

Lead  $\#3$  - Emitter