

SONY®

SEMICONDUCTORS

2SC2020

[TENTATIVE]

RF POWER TRANSISTOR

2SC2020 is designed for HF and VHF Power Amplifier Applications. Most useful for 12-Watt SSB Citizens Band Transceiver Output Stage.

1. Features

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

14 dB min.

$\left(\begin{array}{l} f=27\text{MHz} \\ V_{CC}=12\text{V} \\ P_O=5\text{W} \end{array} \right)$

2. Construction

NPN SEP type Silicon Transistor

3. Application

HF and VHF Power Amplifier

4. Outline

TO-220 (JEDEC)

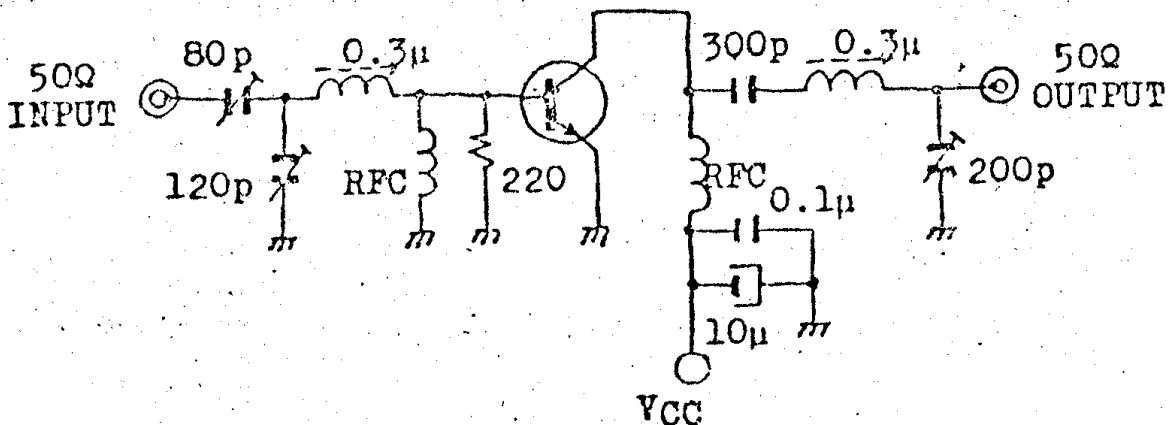
5. Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

Collector - Base Voltage	V_{CBO}	45	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter - Base Voltage	V_{EBO}	4	V
Collector Current	I_C	3	A (Pulse)
Collector Current	I_C	2	A
Collector Power Dissipation	P_C	12	W ($T_c=25^\circ\text{C}$)
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-50 +150	$^\circ\text{C}$

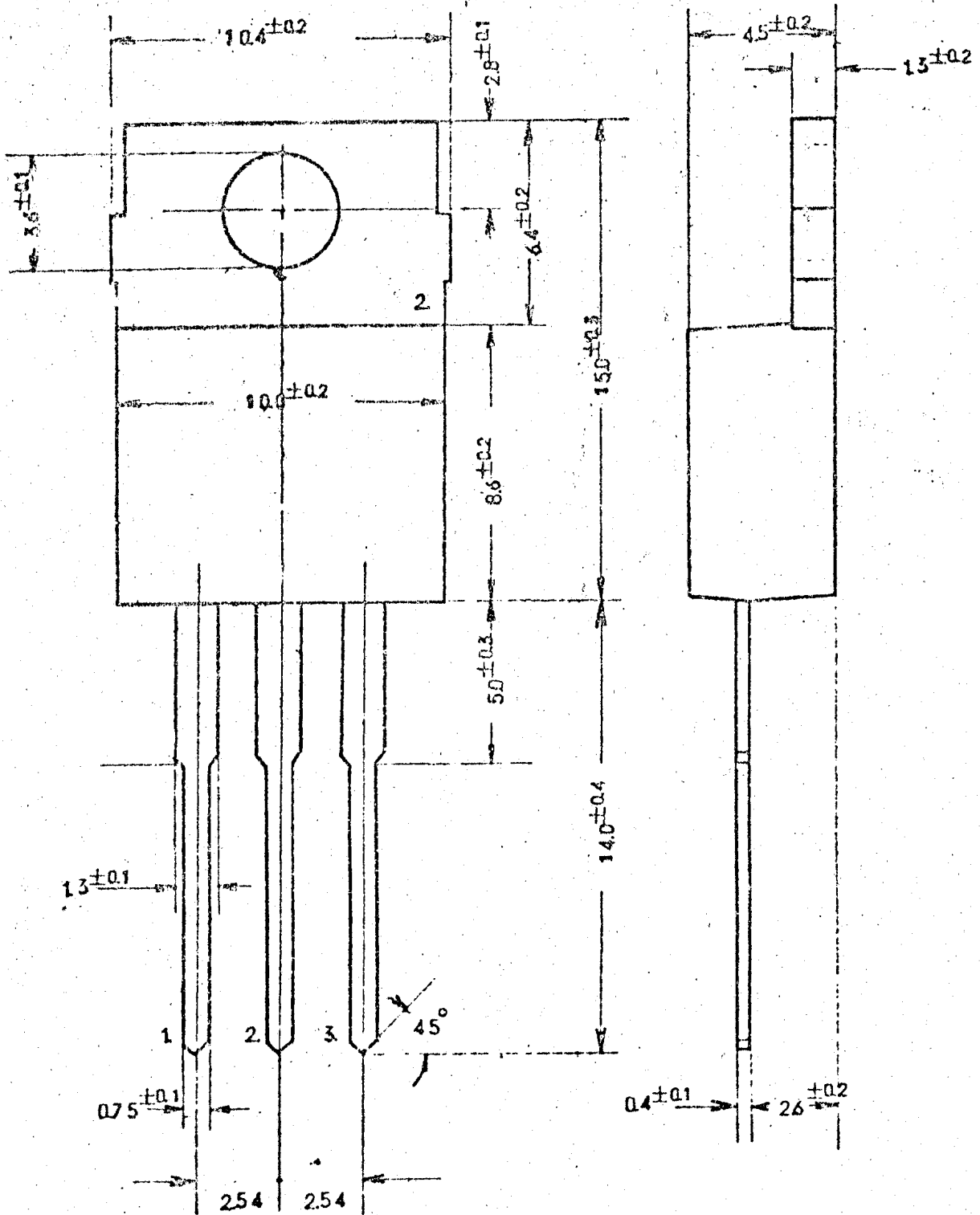
6. Electrical Characteristics (Ta=25°C)

Characteristic		Conditions	Min.	Typ.	Max.	Unit
Collector Cut off Current	ICES	VCE=40V RBE=0			2	μA
Emitter Cut off Current	IEBO	VEB= 4V			2	μA
Collector-Base Voltage	VCBO	IC=0.1mA	45			V
Collector-Emitter Voltage	VCEO	IC=10mA	20			V
Collector-Emitter Saturation Voltage	VCE(SAT)	IC= 1A IB=0.1A		0.2	0.5	V
Base-Emitter Saturation Voltage	VBE(SAT)			0.9	1.0	V
DC Current Gain	hFE	VCE=2V IC=0.1A	30		150	
Output Capacitance	Cob	VCB=10V, IE=0 f=1MHz		20	30	pF
Gain Bandwidth Product	fT	VCE=2V IE=-0.1A	150	270		MHz
Output Power	PO	VCC=12V f=27MHz	5	7		W
Collector Efficiency	ηC	Pi=0.2W See Fig.1	60			%
Input Impedance	Zin	VCC=12V, f=27MHz		6.2 -j9.1		Ω
Output Impedance	Zout	Po=5W		15 -j14.9		Ω

Fig.1 Test Circuit



DIMENSIONAL OUTLINE



Dimensions in millimeters

Lead K1 - Base

Lead K2 - Collector(Flange)

Lead K3 - Emitter