

DESCRIPTION

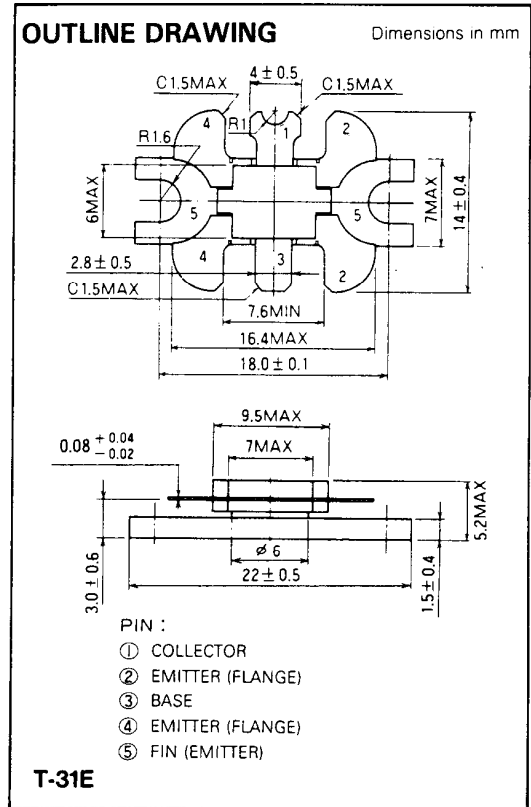
2SC3103 is a silicon NPN epitaxial planar type transistor specifically designed for UHF power amplifier applications.

FEATURES

- High power gain: $G_{pe} \geq 6.7\text{dB}$
@ $V_{CC} = 7.2\text{V}$, $f = 520\text{MHz}$, $P_{in} = 0.6\text{W}$.
- Emitter ballasted construction.
- High ruggedness: Ability to withstand more than 20:1 load VSWR when operated at $V_{CC} = 9\text{V}$, $f = 520\text{MHz}$, $P_o = 2.8\text{W}$
- Flange type ceramic package
- $Z_{in} = 1.8 - j1.9 \Omega$, $Z_{out} = 6.0 - j3.0 \Omega$ @ $V_{CC} = 7.2\text{V}$, $f = 520\text{MHz}$, $P_o = 2.8\text{W}$.

APPLICATION

For drive stage of 5W power amplifiers and output stage of up to 2W power amplifiers in UHF band portable type radio sets.



ABSOLUTE MAXIMUM RATINGS ($T_C = 25^\circ\text{C}$)

Symbol	Parameter	Conditions	Ratings	Unit
V_{CBO}	Collector to base voltage		20	V
V_{EBO}	Emitter to base voltage		3.5	V
V_{CEO}	Collector to emitter voltage	$R_{BE} = \infty$	9	V
I_C	Collector current		1.5	A
P_C	Collector dissipation	$T_C = 25^\circ\text{C}$	10	W
T_J	Junction temperature		175	$^\circ\text{C}$
T_{stg}	Storage temperature		-55 to 175	$^\circ\text{C}$
R_{th-c}	Thermal resistance	Junction to case	15	$^\circ\text{C/W}$

Note. Above parameters are guaranteed independently.

ELECTRICAL CHARACTERISTICS ($T_C = 25^\circ\text{C}$)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$V_{(BR)EBO}$	Emitter to base breakdown voltage	$I_E = 1\text{mA}$, $I_C = 0$	3.5			V
$V_{(BR)CBO}$	Collector to base breakdown voltage	$I_C = 10\text{mA}$, $I_E = 0$	20			V
$V_{(BR)CEO}$	Collector to emitter breakdown voltage	$I_C = 10\text{mA}$, $R_{BE} = \infty$	9			V
I_{CBO}	Collector cut-off current	$V_{CB} = 10\text{V}$, $I_E = 0$			300	μA
I_{EBO}	Emitter cut-off current	$V_{EB} = 2\text{V}$, $I_C = 0$			300	μA
h_{FE}	DC forward current gain *	$V_{CE} = 5\text{V}$, $I_C = 0.1\text{A}$	10	50	180	—
P_o	Power Output	$V_{CC} = 7.2\text{V}$, $P_{in} = 0.6\text{W}$, $f = 520\text{MHz}$	2.8	3.2		W
η_C	Collector efficiency		55	60		%

Note : Above parameters , ratings , limits and conditions are subject to change.