

DESCRIPTION

2SC3101 is a silicon NPN epitaxial planar type transistor specifically designed for UHF power amplifiers applications.

FEATURES

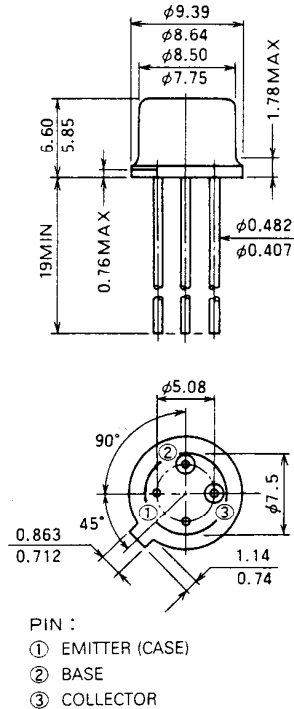
- High power gain: $G_{pe} \geq 5.7\text{dB}$
@ $V_{CC} = 12.5\text{V}$, $f = 520\text{MHz}$, $P_{in} = 0.8\text{W}$
- Emitter ballasted construction
- High ruggedness: Ability to withstand more than 20:1 load VSWR when operated at @ $V_{CC} = 15.2\text{V}$, $f = 520\text{MHz}$, $P_o = 3\text{W}$.

APPLICATION

For drive stage and output stage of power amplifiers in UHF band.

OUTLINE DRAWING

Dimensions in mm



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

Symbol	Parameter	Conditions	Ratings	Unit
V_{CEO}	Collector to base voltage		35	V
V_{EBO}	Emitter to base voltage		4	V
V_{CEO}	Collector to emitter voltage	$R_{BE} = \infty$	17	V
I_C	Collector current		1	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	$^\circ\text{C}$

Note. Above parameters are guaranteed independently.

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

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$V_{(BR)EBO}$	Emitter to base breakdown voltage	$I_E = 1\text{mA}$, $I_C = 0$	4			V
$V_{(BR)CBO}$	Collector to base breakdown voltage	$I_C = 10\text{mA}$, $I_E = 0$	35			V
$V_{(BR)CEO}$	Collector to emitter breakdown voltage	$I_C = 10\text{mA}$, $R_{BE} = \infty$	17			V
I_{CBO}	Collector cutoff current	$V_{CB} = 15\text{V}$, $I_E = 0$			300	μA
I_{EBO}	Emitter cutoff current	$V_{EB} = 2\text{V}$, $I_C = 0$			300	μA
h_{FE}	DC forward current gain *	$V_{CB} = 10\text{V}$, $I_C = 0.1\text{A}$	10	50	180	—
P_o	Output power	$V_{CC} = 12.5\text{V}$, $P_{in} = 0.8\text{W}$, $f = 520\text{MHz}$	3	3.5		W
η_C	Collector efficiency		50	60		%

Note. * Pulse test, $P_w = 150\mu\text{s}$, duty = 5%.

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

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