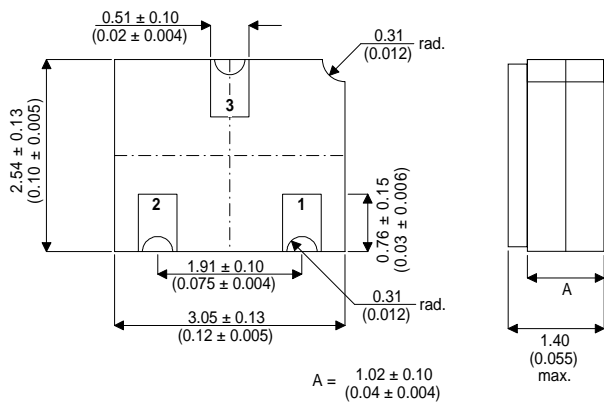


HIGH FREQUENCY NPN TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

MECHANICAL DATA
Dimensions in mm (inches)



**SOT23 CERAMIC
(LCC1 PACKAGE)**

Underside View

PAD 1 – Base PAD 2 – Emitter PAD 3 – Collector

FEATURES

- SILICON NPN TRANSISTOR
- HERMETIC CERAMIC SURFACE MOUNT PACKAGE (SOT23 COMPATIBLE)
- CECC SCREENING OPTIONS

APPLICATIONS:

Hermetically sealed surface mount version of the popular 2N2857 for high reliability applications requiring small size and low weight devices.

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

V_{CBO}	Collector – Base Voltage	30V
V_{CEO}	Collector – Emitter Voltage	15V
V_{EBO}	Emitter – Base Voltage	2.5V
I_C	Collector Current	40mA
P_D	Total Device Dissipation @ $T_A = 25^\circ\text{C}$	200mW
	Derate above 25°C	1.14mW / °C
P_D	Total Device Dissipation @ $T_C = 25^\circ\text{C}$	300mW
	Derate above 25°C	1.72mW / °C
T_{STG}, T_J	Operating and Storage Temperature Range	-65 to +200°C

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{(BR)CBO}^*$ Collector – Base Breakdown Voltage	$I_C = 1\mu\text{A}$ $I_E = 0$	30			V
$V_{(BR)CEO}$ Collector – Emitter Breakdown Voltage	$I_C = 3\text{mA}$ $I_B = 0$	15			
$V_{(BR)EBO}$ Emitter – Base Breakdown Voltage	$I_E = 10\mu\text{A}$ $I_C = 0$	2.5			
I_{CBO} Collector – Base Cut-off Current	$V_{CB} = 15\text{V}$ $I_E = 0$			50	μA
	$T_A = -55^\circ\text{C}$			1	
$V_{CE(sat)}$ Collector – Emitter Saturation Voltage	$I_C = 10\text{mA}$			0.4	V
$V_{BE(sat)}$ Base – Emitter Saturation Voltage	$I_B = 1\text{mA}$	0.5		1	
h_{FE} DC Current Gain	$V_{CE} = 1\text{V}$ $I_C = 3\text{mA}$	30			—
	$T_A = 150^\circ\text{C}$	10			
I_{CES} Collector – Emitter Cut-off Current	$V_{CB} = 16\text{V}$ $I_B = 0$			100	nA
NF Noise Figure	$V_{CE} = 6\text{V}$ $I_C = 1.5\text{mA}$ $f = 450\text{MHz}$ $R_G = 50\Omega$			4.5	dB
h_{fe} Small Signal Current Gain	$V_{CE} = 6\text{V}$ $I_C = 2\text{mA}$	50		220	—
$ h_{fe} $ Magnitude of h_{fe}	$V_{CE} = 6\text{V}$ $I_C = 5\text{mA}$ $f = 100\text{MHz}$	10		21	—
C_{cb} Collector – Base Feedback Capacitance	$V_{CB} = 10\text{V}$ $I_E = 0$ $f = 0.1$ to 1MHz			1	pF
G_{pe} Small Signal Power Gain	$V_{CE} = 6\text{V}$ $I_C = 1.50\text{mA}$ $f = 450\text{MHz}$	12.5		21	dB
$r_b'C_c$ Collector – Base Time Constant	$V_{CE} = 6\text{V}$ $I_E = 2\text{mA}$ $f = 31.9\text{MHz}$	4.0		15	ps