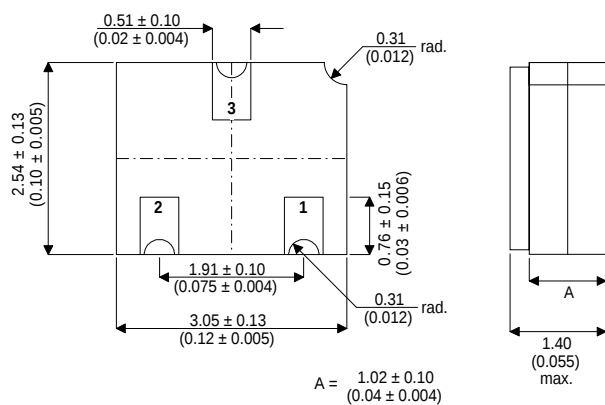


HIGH SPEED, MEDIUM POWER, NPN SWITCHING TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

MECHANICAL DATA Dimensions in mm (inches)



SOT23 CERAMIC (LCC1 PACKAGE)

Underside View

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

FEATURES

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

APPLICATIONS:

Hermetically sealed surface mount version of the popular 2N2369A for high reliability / space 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	40V
V_{CEO}	Collector – Emitter Voltage	15V
V_{EBO}	Emitter – Base Voltage	4.5V
I_C	Collector Current	200mA
P_D	Total Device Dissipation @ $T_A = 25^{\circ}\text{C}$	360mW
	Derate above 25°C	2.06mW / $^{\circ}\text{C}$
P_D	Total Device Dissipation @ $T_C = 25^{\circ}\text{C}$	680mW
	Derate above 25°C	6.85mW / $^{\circ}\text{C}$
T_{STG}, T_J	Operating and Storage Temperature Range	-65 to $+200^{\circ}\text{C}$

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{(BR)CEO^*}$ Collector – Emitter Breakdown Voltage	$I_C = 10\text{mA}$	15			V
$V_{(BR)CBO}$ Collector – Base Breakdown Voltage	$I_C = 10\mu\text{A}$	40			V
$V_{(BR)EBO}$ Emitter – Base Breakdown Voltage	$I_E = 10\mu\text{A}$	4.5			V
I_{CES} Collector – Emitter Cut-off Current	$V_{CE} = 20\text{V}$			0.40	μA
	$V_{CE} = 10\text{V}$			0.30	
	$T_A = +150^\circ\text{C}$			30	
I_{CBO} Collector – Base Cut-off Current	$V_{CB} = 20\text{V}$			0.20	μA
	$T_A = +125^\circ\text{C}$			30	
I_{EBO} Emitter – Base Cut-off Current	$V_{EB} = 4\text{V}$			0.25	μA
$V_{CE(sat)}$ Collector – Emitter Saturation Voltage	$I_C = 10\text{mA}$ $I_B = 1\text{mA}$			0.20	V
	$T_A = +150^\circ\text{C}$			0.30	
	$I_C = 30\text{mA}$ $I_B = 3\text{mA}$			0.25	
	$I_C = 100\text{mA}$ $I_B = 10\text{mA}$			0.43	
$V_{BE(sat)}$ Base – Emitter Saturation Voltage	$I_C = 10\text{mA}$ $I_B = 1\text{mA}$	$T_A = +25^\circ\text{C}$	0.70	0.85	V
		$T_A = +150^\circ\text{C}$	0.59		
		$T_A = -55^\circ\text{C}$		1.02	
	$I_C = 30\text{mA}$ $I_B = 3\text{mA}$			0.90	
	$I_C = 100\text{mA}$ $I_B = 10\text{mA}$			1.20	
h_{FE^*} Current Gain	$I_C = 10\text{mA}$ $V_{CE} = 0.35\text{V}$		40	120	—
	$I_C = 30\text{mA}$ $V_{CE} = 0.40\text{V}$		30	120	
	$I_C = 10\text{mA}$ $V_{CE} = 1\text{V}$		40	120	
	$T_A = -55^\circ\text{C}$		20		
	$I_C = 100\text{mA}$ $V_{CE} = 1\text{V}$		20	120	
$ h_{fe} $ Magnitude of h_{fe}	$I_C = 10\text{mA}$ $V_{CE} = 10\text{V}$ $f = 100\text{MHz}$		5	10	—
C_{ob} Output Capacitance	$V_{CB} = 5\text{V}$ $I_E = 0$ $f = 100\text{kHz to } 1\text{MHz}$			4	pF
C_{ib} Input Capacitance	$V_{EB} = 0.5\text{V}$ $I_C = 0$ $f = 100\text{kHz to } 1\text{MHz}$			5	
t_s Storage Time	$I_C = 10\text{mA}$ $I_{B1} = -I_{B2} = 10\text{mA}$			13	ns
t_{on} Turn-On Time	$I_C = 10\text{mA}$			12	ns
t_{off} Turn-Off Time	$I_{B1} = 3\text{mA}$ $I_{B2} = -1.5\text{mA}$			18	

* Pulse Test: $t_p \leq 300\mu\text{s}$, $\delta \leq 2\%$.