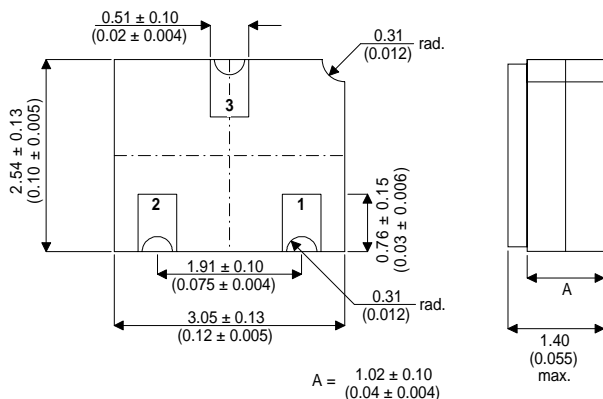


## HIGH SPEED, PNP, SWITCHING TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

**MECHANICAL DATA**  
Dimensions in mm (inches)



Underside View

- PAD 1 Base
- PAD 2 Emitter
- PAD 3 Collector

**SOT23 CERAMIC (CSM)  
LCC1 PACKAGE**

**FEATURES**

- SILICON PLANAR EPITAXIAL PNP TRANSISTOR
- HERMETIC CERAMIC SURFACE MOUNT PACKAGE (SOT23 COMPATIBLE)
- CECC SCREENING OPTIONS
- SPACE QUALITY LEVELS OPTIONS
- HIGH SPEED SATURATED SWITCHING

**APPLICATIONS:**

For high reliability general purpose applications requiring small size and low weight devices.

**ABSOLUTE MAXIMUM RATINGS** ( $T_{case} = 25^{\circ}C$  unless otherwise stated)

$V_{CBO}$	Collector – Base Voltage	-20V
$V_{CEO}$	Collector – Emitter Voltage	-20V
$V_{EBO}$	Emitter – Base Voltage	-4V
$I_C$	Collector Current	-200mA
$P_D$	Total Device Dissipation	300mW
$P_D$	Derate above $50^{\circ}C$	2.20mW / $^{\circ}C$
$R_{ja}$	Thermal Resistance Junction to Ambient	420 $^{\circ}C$ / W
$T_j$	Max Junction Temperature	200 $^{\circ}C$
$T_{stg}$	Storage Temperature	-55 to 200 $^{\circ}C$

**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25^{\circ}C$  unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{CEO(sus)}$ * Collector – Emitter Sustaining Voltage	$I_C = 10mA$	-20			V
$V_{(BR)CBO}$ * Collector – Base Breakdown Voltage	$I_C = 10\mu A$	-20			V
$V_{(BR)EBO}$ * Emitter – Base Breakdown Voltage	$I_E = 10\mu A$ $I_C = 0$	-4			V
$I_{CES}$ * Collector Cut-off Current	$V_{CE} = 10V$ $V_{BE} = 0$			80	nA
	$V_{CE} = 10V$ $V_{BE} = 0$			10	$\mu A$
	$T_C = 125^{\circ}C$				
$V_{CE(sat)}$ * Collector – Emitter Saturation Voltage	$I_C = 10mA$ $I_B = 1mA$			0.15	V
	$I_C = 30mA$ $I_B = 3mA$			0.20	
	$I_C = 100mA$ $I_B = 10mA$			0.60	
$V_{BE(sat)}$ * Base – Emitter Saturation Voltage	$I_C = 10mA$ $I_B = 1mA$	0.78		0.98	V
	$I_C = 30mA$ $I_B = 3mA$	0.85		1.2	
	$I_C = 100mA$ $I_B = 10mA$			1.7	
$h_{FE}$ * DC Current Gain	$I_C = 10mA$ $V_{CE} = 0.3V$	25			—
	$I_C = 30mA$ $V_{CE} = 0.5V$	30		120	
	$I_C = 100mA$ $V_{CE} = 1V$	15			
	$I_C = 30mA$ $V_{CE} = 0.5V$	12			

$T_{amb} = -55^{\circ}C$

\* Pulse test  $t_p = 300\mu s$ ,  $\delta \leq 2\%$

**DYNAMIC CHARACTERISTICS** ( $T_{case} = 25^{\circ}C$  unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$f_T$ Transition Frequency	$I_C = 30mA$ $V_{CE} = 10V$ $f = 100MHz$	400			MHz
$C_{EBO}$ Capacitance	$V_{EB} = 0.5V$ $I_C = 0$ $f = 1.0MHz$			6.0	pF
$C_{CBO}$ Input Capacitance	$V_{CB} = 5V$ $I_E = 0$ $f = 1.0MHz$			5.0	pF

**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25^{\circ}C$  unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$t_{on}$ Turn-on Time	$V_{CC} = 2V$ $I_C = 30mA$ $I_{B1} = 1.5mA$			60	ns
$t_{off}$ Turn-off Time	$V_{CC} = 2V$ $I_C = 30mA$ $I_{B1} = I_{B2} = 1.5mA$			90	ns