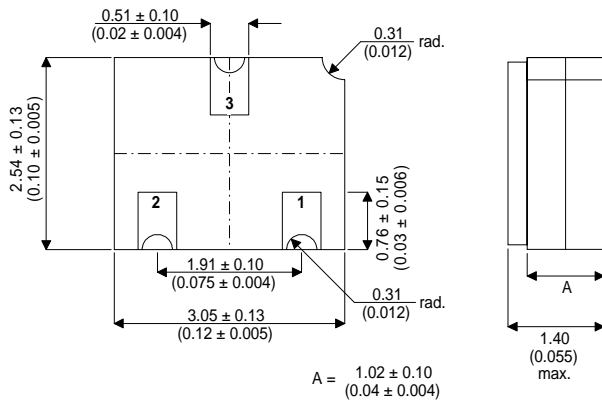


HIGH FREQUENCY, NPN TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

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 NPN TRANSISTOR
- HERMETIC CERAMIC SURFACE MOUNT PACKAGE (SOT23 COMPATIBLE)
- CECC SCREENING OPTIONS AVAILABLE
- SPACE QUALITY LEVELS AVAILABLE
- 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	140V
V_{CEO}	Collector – Emitter Voltage	80V
V_{EBO}	Emitter – Base Voltage	7V
I_C	Collector Current	1A
P_D	Total Device Dissipation	350mW
P_D	Derate above 50°C	2.00mW / °C
R_{ja}	Thermal Resistance Junction to Ambient	350°C / W
T_j	Max Junction Temperature	200°C
T_{stg}	Storage Temperature	-55 to 200°C

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_{CEO}^*	Collector – Emitter Voltage $I_C = 10mA$	80			V
$V_{(BR)CBO}^*$	Collector – Base Breakdown Voltage $I_C = 10\mu A$	140			V
$V_{(BR)EBO}^*$	Emitter – Base Breakdown Voltage $I_E = 10\mu A$ $I_C = 0$	7			V
I_{CBO}	Collector Cut-off Current $V_{CB} = 90V$ $V_{BE} = 0$			10	nA
	$V_{CB} = 90V$ $V_{BE} = 0$			10	μA
	$T_{amb} = 150^{\circ}C$				
I_{EBO}	Emitter Cut-off Current $V_{EB} = 5V$			10	nA
$V_{CE(sat)}^*$	Collector – Emitter Saturation Voltage $I_C = 150mA$ $I_B = 15mA$			0.20	V
	$I_C = 500mA$ $I_B = 50mA$			0.50	
$V_{BE(sat)}^*$	Base – Emitter Saturation Voltage $I_C = 150mA$ $I_B = 15mA$			1.1	V
h_{FE}^*	DC Current Gain $T_{amb} = -55^{\circ}C$	$I_C = 0.1mA$ $V_{CE} = 10V$	50		—
		$I_C = 10mA$ $V_{CE} = 10V$	90		
		$I_C = 150mA$ $V_{CE} = 10V$	100	300	
		$I_C = 500mA$ $V_{CE} = 10V$	50		
		$I_C = 1A$ $V_{CE} = 10V$	15		
		$I_C = 150mA$ $V_{CE} = 0.5V$	40		

t^* 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 $I_C = 50mA$ $V_{CE} = 10V$ $f = 20MHz$	100			MHz
C_{EBO}	Capacitance $V_{EB} = 0.5V$ $I_C = 0$ $f = 1.0MHz$			60	pF
C_{CBO}	Input Capacitance $V_{CB} = 10V$ $I_E = 0$ $f = 1.0MHz$			12	pF
h_{fe}	Small Signal Current Gain $I_C = 1mA$ $V_{CE} = 5V$ $f = 1kHz$	80		400	—
NF	Noise Figure $I_C = 100\mu A$ $V_{CE} = 10V$ $f = 1kHz$ $R_g = 1K\Omega$			4	db