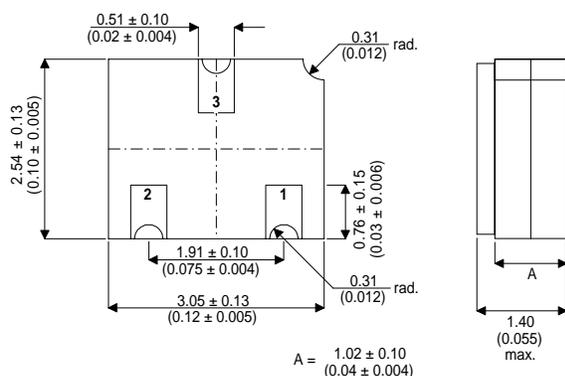


**HIGH FREQUENCY, NPN
TRANSISTOR IN A
HERMETICALLY SEALED
CERAMIC SURFACE MOUNT PACKAGE
FOR HIGH RELIABILITY APPLICATIONS**

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	$I_C = 0.1mA$ $V_{CE} = 10V$	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			

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

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