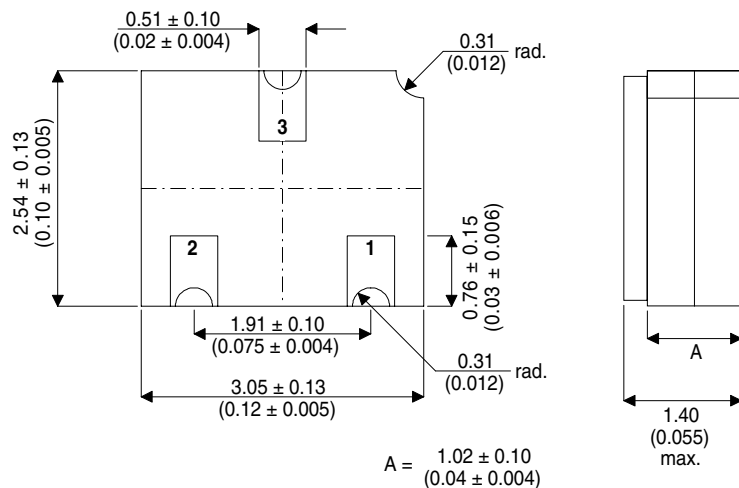


## MECHANICAL DATA

Dimensions in mm (inches)



### LCC1

#### Underside View

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

## PNP SILICON TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

### FEATURES

- High Voltage Switching
- Low Power Amplifier Applications
- Hermetic Ceramic Surface Mount Package

### APPLICATIONS

- General Purpose
- High Speed Saturated Switching
- Screening Options Available

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

$V_{CEO}$	Collector – Emitter Voltage	-140V
$V_{CBO}$	Collector – Base Voltage	-140V
$V_{EBO}$	Emmitter – Base Voltage	-5V
$I_C$	Collector Current	-1A
$P_D$	Total Device Dissipation @ $T_A = 25^{\circ}C$	1W
	Derate above $25^{\circ}C$	5.71mW/ $^{\circ}C$
$P_D$	Total Device Dissipation @ $T_C = 25^{\circ}C$	5W
	Derate above $25^{\circ}C$	28.6mW / $^{\circ}C$
$T_J, T_{STG}$	Operating and Storage Junction Temperature Range	-65 to +200 $^{\circ}C$

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS							
BV <sub>CEO</sub>	Collector–Emitter Breakdown Voltage <sup>1</sup>	I <sub>C</sub> = -10mA	I <sub>B</sub> = 0	-140			V
BV <sub>CBO</sub>	Collector – Base Breakdown Voltage	I <sub>C</sub> = -100μA	I <sub>E</sub> = 0	-140			
BV <sub>EBO</sub>	Emitter – Base Breakdown Voltage	I <sub>C</sub> = 0	I <sub>E</sub> = -10μA	-5.0			
I <sub>EBO</sub>	Emitter Cut-off Current	V <sub>BE</sub> = -3.0V	I <sub>C</sub> = 0			-50	nA
I <sub>CBO</sub>	Collector Cut-off Current	V <sub>CB</sub> = -100V	I <sub>E</sub> = 0			-100	
ON CHARACTERISTICS							
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> = -0.1mA	V <sub>CE</sub> = -10V	40			–
		I <sub>C</sub> = -1.0mA	V <sub>CE</sub> = -10V	45			
		I <sub>C</sub> = -10mA	V <sub>CE</sub> = -10V	50			
		I <sub>C</sub> = -50mA	V <sub>CE</sub> = -10V	50		150	
		I <sub>C</sub> = -150mA	V <sub>CE</sub> = -10V	25			
V <sub>CE(sat)</sub>	Collector – Emitter Saturation Voltage <sup>1</sup>	I <sub>C</sub> = -10mA	I <sub>B</sub> = -1.0mA			-0.3	V
		I <sub>C</sub> = -50mA	I <sub>B</sub> = -5mA			-0.5	
V <sub>BE(sat)</sub>	Base – Emitter Saturation Voltage	I <sub>C</sub> = -10mA	I <sub>B</sub> = -1.0mA			-0.8	V
		I <sub>C</sub> = -50mA	I <sub>B</sub> = -5mA	-0.65		-0.9	
SMALL SIGNAL CHARACTERISTICS							
f <sub>t</sub>	Current Gain Bandwidth Product	V <sub>CE</sub> = -30V	I <sub>C</sub> = -30mA f = 100MHz	100			MHz
C <sub>ob</sub>	Output Capacitance	V <sub>CB</sub> = -20V	I <sub>E</sub> = 0 f = 100kHz			10	pF
C <sub>ib</sub>	Input Capacitance	V <sub>BE</sub> = 1.0V	I <sub>C</sub> = 0 f = 1.0MHz			75	pF
h <sub>ie</sub>	Input Impedance	V <sub>CE</sub> = -10V	I <sub>C</sub> = -10mA f = 1.0kHz	100		600	Ω
h <sub>re</sub>	Voltage Feedback Ratio					3.0	x10 <sup>-4</sup>
h <sub>fe</sub>	Small Signal Current Gain				40	160	—
h <sub>oe</sub>	Output Admittance					200	μmhos
NF	Noise Figure	V <sub>CE</sub> = -10V R <sub>S</sub> = 1.0KΩ	I <sub>C</sub> = -0.5mA f = 1.0kHz			3.0	dB
SWITCHING CHARACTERISTICS							
t <sub>on</sub>	Turn–On Time	V <sub>CC</sub> = -100V	V <sub>BE</sub> = 4.0V			400	ns
t <sub>off</sub>	Turn–Off Time	I <sub>C</sub> = -50mA	I <sub>B1</sub> = I <sub>B2</sub> = -5mA			600	

1) Pulse test : Pulse Width < 300 $\mu\text{s}$  ,Duty Cycle < 2%

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