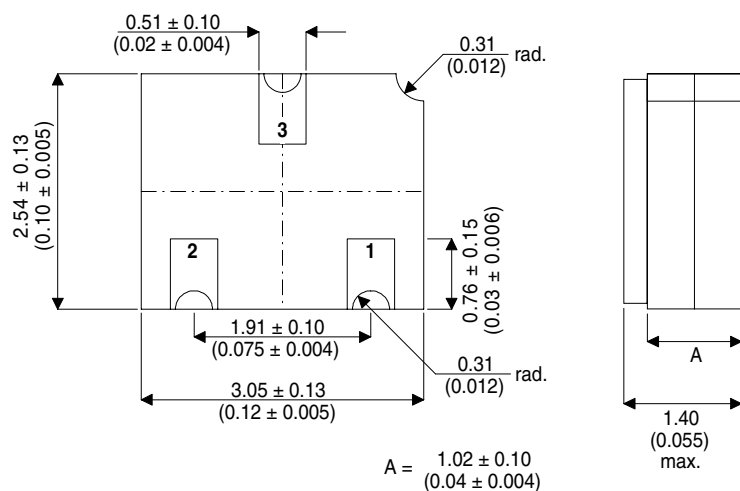


**MECHANICAL DATA**

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
$V_{EBO}$	Emitter – 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
<b>OFF CHARACTERISTICS</b>					
$BV_{CEO}$	Collector–Emitter Breakdown Voltage <sup>1</sup>	$I_C = -10\text{mA}$ $I_B = 0$	-140		V
$BV_{CBO}$	Collector – Base Breakdown Voltage	$I_C = -100\mu\text{A}$ $I_E = 0$	-140		
$BV_{EBO}$	Emitter – Base Breakdown Voltage	$I_C = 0$ $I_E = -10\mu\text{A}$	-5.0		
$I_{EBO}$	Emitter Cut-off Current	$V_{BE} = -3.0\text{V}$ $I_C = 0$		-50	nA
$I_{CBO}$	Collector Cut-off Current	$V_{CB} = -100\text{V}$ $I_E = 0$		-100	
<b>ON CHARACTERISTICS</b>					
$h_{FE}$	DC Current Gain	$I_C = -0.1\text{mA}$ $V_{CE} = -10\text{V}$	40		–
		$I_C = -1.0\text{mA}$ $V_{CE} = -10\text{V}$	45		
		$I_C = -10\text{mA}$ $V_{CE} = -10\text{V}$	50		
		$I_C = -50\text{mA}$ $V_{CE} = -10\text{V}$	50	150	
		$I_C = -150\text{mA}$ $V_{CE} = -10\text{V}$	25		
$V_{CE(sat)}$	Collector – Emitter Saturation Voltage <sup>1</sup>	$I_C = -10\text{mA}$ $I_B = -1.0\text{mA}$		-0.3	V
		$I_C = -50\text{mA}$ $I_B = -5\text{mA}$		-0.5	
$V_{BE(sat)}$	Base – Emitter Saturation Voltage	$I_C = -10\text{mA}$ $I_B = -1.0\text{mA}$		-0.8	V
		$I_C = -50\text{mA}$ $I_B = -5\text{mA}$	-0.65	-0.9	
<b>SMALL SIGNAL CHARACTERISTICS</b>					
$f_t$	Current Gain Bandwidth Product	$V_{CE} = -30\text{V}$ $I_C = -30\text{mA}$ $f = 100\text{MHz}$	100		MHz
$C_{ob}$	Output Capacitance	$V_{CB} = -20\text{V}$ $I_E = 0$ $f = 100\text{kHz}$		10	pF
$C_{ib}$	Input Capacitance	$V_{BE} = 1.0\text{V}$ $I_C = 0$ $f = 1.0\text{MHz}$		75	pF
$h_{ie}$	Input Impedance		100	600	$\Omega$
$h_{re}$	Voltage Feedback Ratio	$V_{CE} = -10\text{V}$ $I_C = -10\text{mA}$		3.0	$\times 10^{-4}$
$h_{fe}$	Small Signal Current Gain	$f = 1.0\text{kHz}$	40	160	—
$h_{oe}$	Output Admittance			200	$\mu\text{mhos}$
NF	Noise Figure	$V_{CE} = -10\text{V}$ $I_C = -0.5\text{mA}$ $R_S = 1.0\text{K}\Omega$ $f = 1.0\text{kHz}$		3.0	dB
<b>SWITCHING CHARACTERISTICS</b>					
$t_{on}$	Turn–On Time	$V_{CC} = -100\text{V}$ $V_{BE} = 4.0\text{V}$		400	ns
$t_{off}$	Turn–Off Time	$I_C = -50\text{mA}$ $I_{B1} = I_{B2} = -5\text{mA}$		600	

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

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