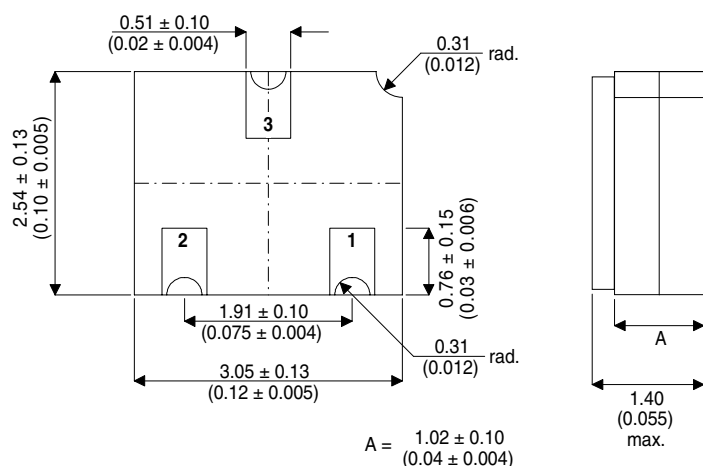


## HIGH VOLTAGE NPN SWITCHING TRANSISTOR IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

### MECHANICAL DATA

Dimensions in mm (inches)



### SOT23 CERAMIC (LCC1 PACKAGE)

#### Underside View

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

### FEATURES

- SILICON PLANAR EPITAXIAL NPN TRANSISTOR
- HERMETIC CERAMIC SURFACE MOUNT PACKAGE (SOT23 COMPATIBLE)
- CECC SCREENING OPTIONS

### APPLICATIONS:

Hermetically sealed surface mount 2N5551 for high reliability / space applications requiring small size and low weight devices.

### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise stated)

V <sub>CBO</sub>	Collector – Base Voltage	180V
V <sub>CEO</sub>	Collector – Emitter Voltage	160V
V <sub>EBO</sub>	Emitter – Base Voltage	6V
I <sub>C</sub>	Collector Current	600mA
P <sub>D</sub>	Total Device Dissipation @ T <sub>A</sub> = 25°C	350mW
	Derate >25°C	0.2°C/mW
T <sub>STG</sub> , T <sub>J</sub>	Operating and Storage Temperature Range	-55 to +150°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
$V_{(BR)CEO^*}$	Collector – Emitter Breakdown Voltage $I_C = 1.0\text{mA}$ $I_B = 0\text{mA}$	160			V
$V_{(BR)CBO}$	Collector – Base Breakdown Voltage $I_C = 100\mu\text{A}$ $I_E = 0\text{mA}$	180			V
$V_{(BR)EBO}$	Emitter – Base Breakdown Voltage $I_E = 10\mu\text{A}$ $I_C = 0\text{mA}$	6			V
$I_{CBO}$	Collector – Base Cut-off Current $V_{CB} = 120\text{V}$ $I_E = 0$ $T_A = +100^\circ\text{C}$			50	nA
				50	$\mu\text{A}$
$I_{EBO}$	Emitter – Base Cut-off Current $V_{EB} = 4\text{V}$ $I_C = 0$			50	nA
$V_{CE(sat)}$	Collector – Emitter Saturation Voltage $I_C = 10\text{mA}$ $I_B = 1.0\text{mA}$			0.15	V
	$I_C = 50\text{mA}$ $I_B = 5\text{mA}$			0.20	
$V_{BE(sat)}$	Base – Emitter Saturation Voltage $I_C = 10\text{mA}$ $I_B = 1.0\text{mA}$			1.0	V
	$I_C = 50\text{mA}$ $I_B = 5\text{mA}$			1.0	
$h_{FE^*}$	Current Gain $I_C = 1.0\text{mA}$ $V_{CE} = 5\text{V}$	80			—
	$I_C = 10\text{mA}$ $V_{CE} = 5\text{V}$	80		250	
	$I_C = 50\text{mA}$ $V_{CE} = 5\text{V}$	30			
$f_T$	Current Gain Bandwidth Product $I_C = 10\text{mA}$ $V_{CE} = 10\text{V}$ $f = 100\text{MHz}$	100		300	—
$C_{obo}$	Output Capacitance $V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			6	pF
$C_{ib}$	Input Capacitance $V_{EB} = 0.5\text{V}$ $I_C = 0$ $f = 1.0\text{MHz}$			60	
NF	Noise Figure $I_C = 250\mu\text{A}$ $V_{CE} = 5\text{V}$ $R_S = 1.0\text{k}$ $f = 1.0\text{KHz}$			8	dB
$h_{FE^*}$	Current Gain $V_{CE} = 10\text{V}$ $I_C = 1.0\text{mA}$ $f = 1.0\text{KHz}$	50		200	—

\* Pulse Test:  $t_p \leq 300\mu\text{s}$ ,  $\delta \leq 2\%$ .