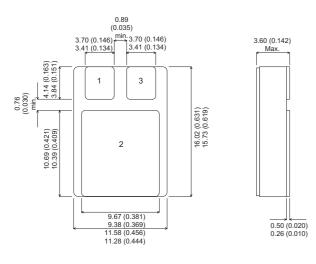




### **MECHANICAL DATA**

Dimensions in mm (inches)



#### SMD1

#### **Underside View**

1 = Base2 = Collector 3 = Emitter

## NPN BIPOLAR TRANSISTOR IN A CERAMIC SURFACE MOUNT **PACKAGE FOR HIGH REL APPLICATIONS**

### **FEATURES**

- HIGH VOLTAGE
- FAST SWITCHING
- CERAMIC SURFACE MOUNT PACKAGE
- SCREENING OPTIONS AVAILABLE

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

$V_{CBO}$	Collector – Base Voltage	100V
$V_{CEO}$	Collector – Emitter Voltage (I <sub>B</sub> = 0)	80V
$V_{EBO}$	Emitter – Base Voltage (I <sub>B</sub> = 0)	6V
$I_{B}$	Base Current	2A
$I_{\mathbb{C}}$	Collector Current	4A
$T_J$ , $T_STG$	Operating and Storage Junction Temperature Range	−55 to +150°C
$R_{ hetaJC}$	Thermal Resistance Junction to Case	4.16°C/W
$P_{D}$	Power Dissipation	25W

Semelab PIc 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.

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### **ELECTRICAL CHARACTERISTICS** (T<sub>A</sub> = 25°C unless otherwise stated)

	Parameter	rameter Test Conditions		Min.	Тур.	Max.	Unit
V <sub>CEO(sus)</sub>	Collector – Emitter Sustaining Voltage	$I_C = 10mA$	I <sub>B</sub> = 0	200			V
V <sub>CER(sus)</sub>	Collector – Emitter Sustaining Voltage	$I_C = 10mA$	$R_{EB} = 100\Omega$	250			, v
I <sub>CES</sub>	Collector – Emitter Cut-off Current	V <sub>CE</sub> = 60V	$I_B = 0$			0.7	mA
		V <sub>CE</sub> = 80V	T <sub>C</sub> = 150°C			0.7	
I <sub>EBO</sub>	Emitter Base Cut-off Current	$V_{EB} = 6V$	I <sub>E</sub> = 0			0.75	mA
V <sub>CE(sat)</sub>	Collector – Emitter Saturation Voltage	I <sub>C</sub> = 1.0A	$I_{B} = 0.1A$			2.5	V
V <sub>BE(sat)</sub>	Base – Emitter On Voltage	I <sub>C</sub> = 1.0A	$I_{B} = 0.3A$			1.5	
h <sub>FE</sub>	DC Current Gain	$I_C = 0.5 \text{mA}$	$V_{CE} = 2V$	40		160	_
C <sub>obo</sub>	Output Capacitance	V <sub>CB</sub> = 10V	f = 100KHz			50	pF
[h <sub>fe</sub> ]	Small Signal Current Gain	V <sub>CE</sub> = 10V	$I_{\rm C} = 0.5 A$	40			_
		f = 10MHz					
t <sub>on</sub>	Turn on time	I <sub>C</sub> = 0.5A	$V_{CC} = 30V$			0.25	μsec
		I <sub>B1 = -</sub> I <sub>B2 = 50</sub>	0mA				
t <sub>off</sub>	Turn off time	$I_{\rm C} = 0.5A$	$V_{CC} = 30V$			2.5	μsec
		I <sub>B1 = -</sub> I <sub>B2 = 50</sub>	0mA				

<sup>1)</sup>  $\ \ f_t$  is defined as the frequency at which  $|h_{fe}|$  extrapolates to untity.

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