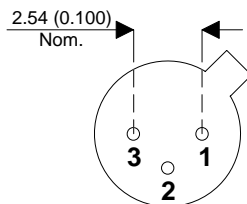
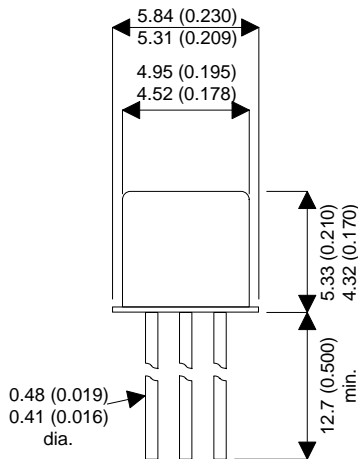


**MECHANICAL DATA**

Dimensions in mm (inches)



**TO-18 (TO-206AA) CASE**

**PIN CONFIGURATION**

Pin 1 – Emitter    Pin 2 – Base    Pin 3 – Collector

**HIGH SPEED SWITCHING BIPOLAR NPN TRANSISTOR IN A HERMETICALLY SEALED TO-18 PACKAGE**

**FEATURES**

- SILICON NPN TRANSISTOR
- METAL CASE (JEDEC TO-18)
- HIGH SPEED SWITCHING

**APPLICATIONS:**

**SUITABLE FOR HIGH SPEED SWITCHING APPLICATIONS**

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

$V_{CBO}$	Collector-Base Voltage ( $I_E = 0V$ )	60V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0V$ )	40V
$V_{EBO}$	Emitter Base Voltage ( $I_C = 0V$ )	5V
$I_C$	Collector Current	0.8A
$P_{tot}$	Total Dissipation @ $T_{amb} = 25^{\circ}C$	0.5W
$P_{tot}$	Total Dissipation @ $T_{case} = 25^{\circ}C$	1.8W
$T_{stg}$	Storage Temperature	-65 to 200°C
$T_j$	Max Operating Junction Temperature	175°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.

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Issue 1

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$ Collector Cutoff Current	$V_{CB}=50V$ $I_E=0V$			10	nA
	$T_{amb}=150^{\circ}C$			10	$\mu A$
$I_{EBO}$ Emitter Cutoff Current	$V_{EB}=3V$ $I_C=0V$			10	nA
$V_{(BR)CBO}$ Collector-Base Breakdown Voltage	$I_C=10\mu A$ $I_E=0A$	60			V
$V_{(BR)CEO}^*$ Collector-Emitter Breakdown Voltage	$I_C=10mA$ $I_B=0V$	30			V
$V_{(BR)EBO}$ Emitter-Base Breakdown Voltage	$I_E=10\mu A$ $I_C=0V$	5			V
$V_{CE(sat)}^*$ Collector-Emitter Saturation Voltage	$I_C=150mA$ $I_B=15mA$			0.4	V
	$I_C=500mA$ $I_B=50mA$			1.6	V
$V_{BE(sat)}^*$ Base-Emitter Saturation Voltage	$I_C=150mA$ $I_B=15mA$			1.3	V
	$I_C=500mA$ $I_B=50mA$			2.6	V
$h_{FE}^*$ DC Current Gain	$I_C=0.1mA$ $V_{CE}=10V$	20		200	
	$I_C=1mA$ $V_{CE}=10V$	25			
	$I_C=10mA$ $V_{CE}=10V$	35			
	$I_C=150mA$ $V_{CE}=10V$	40			
	$I_C=500mA$ $V_{CE}=10V$	20			
	$I_C=150mA$ $V_{CE}=1V$	20			
$f_T$ Transition Frequency ( $f=100MHz$ )	$I_C=20mA$ $V_{CE}=20V$	250			MHz
$C_{CBO}$ Collector-Base Capacitance ( $f=100kHz$ )	$I_E=0A$ $V_{CB}=10V$			8	pF
$R_{thJC}$ Thermal Resistance Junction-Case				83.3	$^{\circ}C/W$
$R_{thJA}$ Thermal Resistance Junction-Ambient				300	

\* Pulsed: Pulse duration = 300 $\mu s$ , duty cycle = 1%