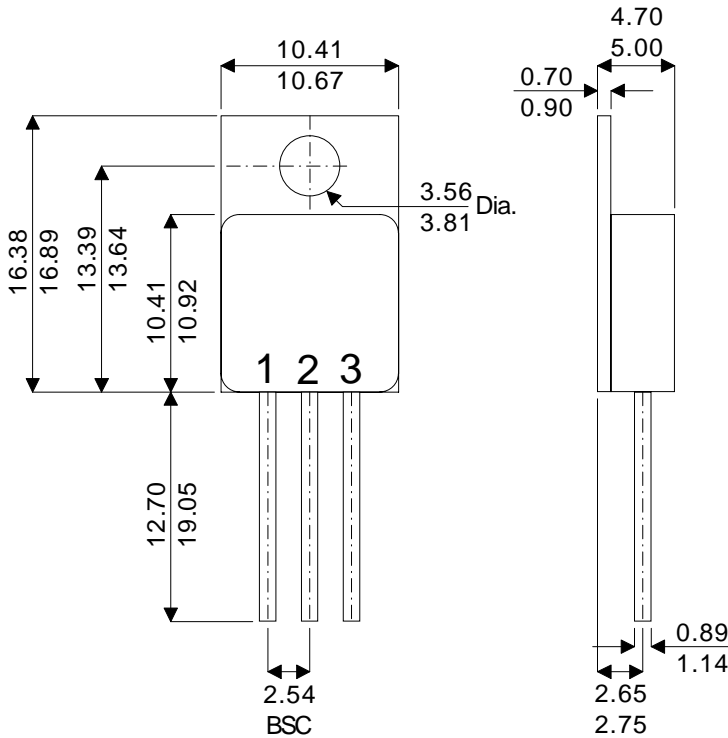


**MECHANICAL DATA**

Dimensions in mm (inches)



**TO-220M (TO-257AB) – Metal Package**

Pad 1 – Base      Pad 2 – Collector      Pad 3 – Emitter

**NPN POWER SILICON TRANSISTOR FOR HI-REL APPLICATIONS**

**FEATURES**

- HERMETICALLY SEALED TO-220 METAL PACKAGE
- ALL LEADS ISOLATED FROM CASE
- CECC, JAN AND SPACE LEVEL SCREENING OPTIONS AVAILABLE

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

$V_{CBO}$	Collector – Base Maximum Voltage	110V
$V_{CEO}$	Collector – Emitter Maximum Voltage	80V
$V_{EBO}$	Emitter – Base Maximum Voltage	8.0V
$I_C$	Maximum Continuous Collector Current	5.0A
$I_B$	Maximum Continuous Base Current	500mA
$P_{TOT}$	Power Dissipation @ $T_C = 100^\circ\text{C}$	20W
	Linear Derating Factor > $T_C = 100^\circ\text{C}$	0.2W/°C
$T_J, T_{stg}$	Operating and Storage Temperature Range	-65°C to 200°C
$R_{\theta JC}$	Thermal Resistance Junction to Case	5.0°C/W max.

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CEO}$	Collector – Emitter Cut-off Current $V_{CE} = 50V$ $I_B = 0$			100	$\mu A$
$I_{CBO}$	Collector – Base Cut-off Current $V_{CE} = 80V$ $I_E = 0$			0.2	
$I_{EBO}$	Emitter – Base Cut-off Current $V_{EB} = 4V$ $I_C = 0$			0.2	
$V_{(BR)CEO}$	Collector – Emitter Breakdown Voltage $I_C = 100mA$	80			V
$V_{(BR)CEO}$	Collector – Base Breakdown Voltage $I_C = 10\mu A$	100			
$V_{(BR)EBO}$	Base – Emitter Breakdown Voltage $I_E = 10\mu A$	8.0			
$V_{BE(sat)}$	Base – Emitter Saturation Voltage $I_C = 1.0A$ $I_B = 0.1A$			1.2	
$V_{CE(sat)}$	Collector – Emitter Saturation Voltage $I_C = 1.0A$ $I_B = 0.1A$			0.25	
	$I_C = 5.0A$ $I_B = 0.5A$			2.0	
$h_{FE}$	DC Current Gain $I_C = 1.0A$ $V_{CE} = 5V$	40		120	—
		$I_C = 0.5A$ $V_{CE} = 5V$	15		
$h_{fe}$	High Frequency Forward Current Gain $I_C = 1.0A$ $V_{CE} = 10V$ $f = 10MHz$	3.0			—
$C_{obo}$	Open Circuit Output Capacitance $f = 1MHz$ $V_{CB} = 10V$			150	pF
$t_r$	Rise Time $I_C = 1.0A$			0.3	$\mu s$
$t_s$	Storage Time $V_{CC} = 20V$			2.0	
$t_f$	Fall Time $I_{B1} = 100mA$			0.35	

\*Pulsed : Pulse duration  $\leq 300 \mu s$  , duty cycle  $\leq 2.0\%$