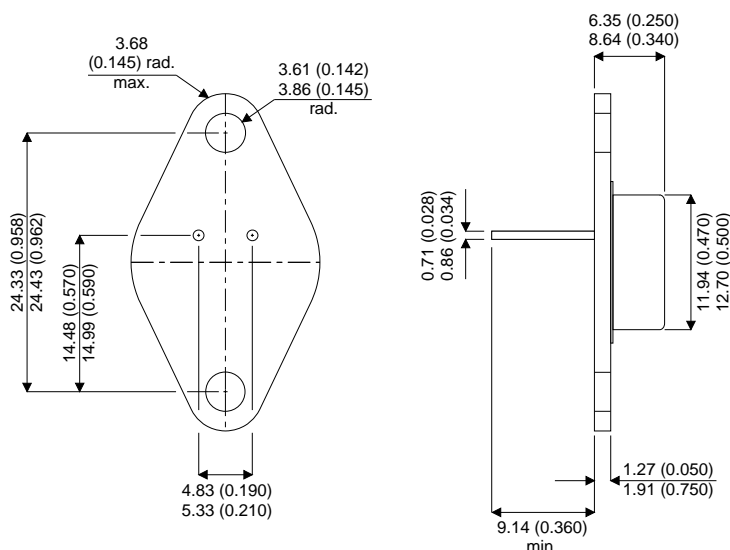


**MECHANICAL DATA**

Dimensions in mm (inches)



**TO-66**

PIN 1 — Base  
 PIN 2 — Emitter  
 Case is Collector.

**MEDIUM POWER SILICON NPN TRANSISTOR**

**FEATURES**

- Low Saturation Voltages
- High Voltage Ratings
- Maximum Safe-Operating-Area Curves for DC and Pulse Operation.

**APPLICATIONS**

- Series and Shunt Regulators
- Audio Amplifiers
- Power Switching Circuits
- Solenoid and Relay Drivers

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

$V_{CBO}$	Collector – Base Voltage	160V
$V_{CEO}$	Collector – Emitter Voltage	140V
$V_{EBO}$	Emitter – Base Voltage	7V
$I_C$	Collector Current	3A
$I_B$	Base Current	2A
$P_{tot}$	Total Power Dissipation	25W
	Derate above 25°C	0.142 W / °C
$T_j, T_{stg}$	Operating and Storage Junction Temperature Range	-65 to 200°C

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
<b>OFF CHARACTERISTICS</b>					
$V_{\text{CEO(sus)}}^*$	Collector – Emitter Sustaining Voltage $I_{\text{C}} = 0.1\text{A}$ $I_{\text{B}} = 0$	140			V
$I_{\text{CEO}}$	Collector Cut-off Current $V_{\text{CE}} = 140\text{V}$ $I_{\text{B}} = 0$			100	mA
$I_{\text{CEX}}$	Collector Cut-off Current $V_{\text{CE}} = 140\text{V}$ $V_{\text{BE(off)}} = 1.5\text{V}$ $T_{\text{C}} = 150^{\circ}\text{C}$			5 6	mA
$I_{\text{EBO}}$	Emitter Cut-off Current $V_{\text{EB}} = 7\text{V}$ $I_{\text{C}} = 0$			1	mA
<b>ON CHARACTERISTICS</b>					
$h_{\text{FE}}$	DC Current Gain $V_{\text{CE}} = 4\text{V}$ $I_{\text{C}} = 0.5\text{A}$	25		100	—
		5			
$V_{\text{CE(sat)}}$	Collector – Emitter Saturation Voltage $I_{\text{C}} = 2.7\text{A}$ $I_{\text{B}} = 0.9\text{A}$			6	V
$V_{\text{BE(on)}}$	Base – Emitter On Voltage $V_{\text{CE}} = 4\text{V}$ $I_{\text{C}} = 2.7\text{A}$			6.7	V
<b>DYNAMIC CHARACTERISTICS</b>					
$h_{\text{fe}}$	Small Signal Current Gain $V_{\text{CE}} = 4\text{V}$ $I_{\text{C}} = 0.5\text{A}$ $f = 1\text{kHz}$	15		75	—
$ h_{\text{fe}} $	Small Signal Current Gain $V_{\text{CE}} = 4\text{V}$ $I_{\text{C}} = 0.5\text{A}$ $f = 0.4\text{MHz}$	5			—

\* This test must NOT be measured on a curve tracer.

**THERMAL CHARACTERISTICS**

$R_{\theta\text{JC}}$	Thermal Resistance Junction – Case			7	$^{\circ}\text{C/W}$
-----------------------	------------------------------------	--	--	---	----------------------