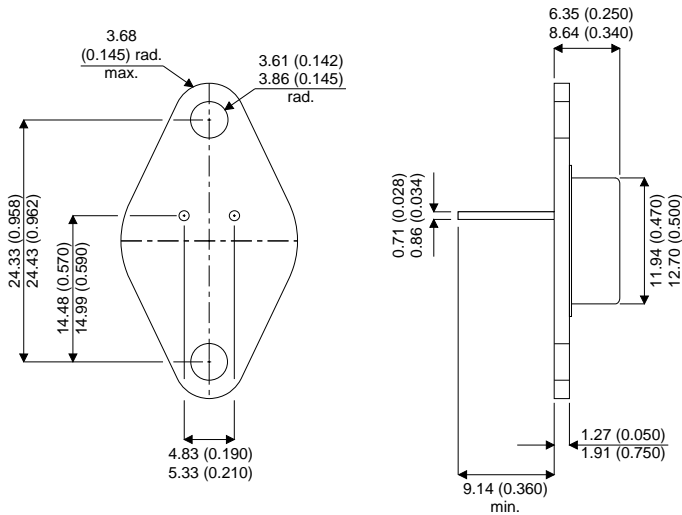


**MECHANICAL DATA**

Dimensions in mm(inches)



**TO-66**

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

**HOMETAXIAL-BASE  
MEDIUM POWER SILICON  
NPN TRANSISTOR**

**FEATURES**

- $f_T = 800$  kHz at 0.2A
- Maximum Safe-area of operation curves for dc and pulse operation.
- $V_{CEV(sus)} = 90V$  min
- Low Saturation Voltage:  
 $V_{CE(sat)} = 1.0V$  at  $I_C = 0.5A$

**APPLICATIONS**

- Power Switching Circuits
- Series and shunt-regulator driver and output stages
- High-fidelity amplifiers
- Solenoid Drivers

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

$V_{CBO}$	Collector – Base Voltage	90V
$V_{CEO}$	Collector – Emitter Voltage (with base open)	80V
$V_{CER(sus)}$	External Base – Emitter ( $R_{BE} = 100\Omega$ )	85V
$V_{CEV(sus)}$	Collector – Emitter Voltage (with base reverse biased)	90V
$V_{EBO}$	Emitter to Base Voltage	7V
$I_C$	Continuous Collector Current	4A
$I_B$	Continuous Base Current	2A
$P_D$	Total Power Dissipation at $T_{case} = 25^\circ C$ Derate above $25^\circ C$	50W 0.200°C
$T_j, T_{stg}$	Operating and Storage Junction Temperature Range	-65 to 200°C

In accordance with JEDEC registration data format

**THERMAL CHARACTERISTICS**

$R_{\theta JC}$	Thermal Resistance, Junction to Case	3.5 °C/W
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**ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25^{\circ}C$  unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
$I_{CEO}$	Collector Cut-off Current with base open	$V_{CE} = 60V$	$I_B = 0$		0.5	mA
$I_{CEV}$	Collector – Cut-off Current	$V_{CE} = 80V$	$V_{BE} = -1.5V$		0.5	
			$T_C = 150^{\circ}C$		1.0	
$I_{EBO}$	Emitter Cut-off Current	$V_{BE} = -7V$	$I_B = 0$		0.2	
$V_{CEO(sus)}$	Collector – Emitter Sustaining Voltage with base open*	$I_C = 0.1A$	$I_B = 0$	80		V
$V_{CER(sus)}$	External Base to Emitter Resistance	$V_{BE} = 5V$	$(R_{BE}) = 100\Omega$	85		
$h_{FE}$	D.C Forward Current*	$V_{CE} = 2V$	$I_C = 4A$	5		—
		$V_{CE} = 2V$	$I_C = 1.5A$	25	100	
$V_{CE(sat)}$	Collector to Emitter Saturation Voltage*	$I_C = 1.5A$	$I_B = .015A$		0.5	V
$V_{BE}$	Base – Emitter Voltage	$V_{CE} = 2V$	$I_C = 1.5$		1.5	
$f_{hfe}$	Common Emitter Small Signal Short Circuit, Forward Current Transfer Ratio Cut off Frequency	$V_{CE} = 4V$	$I_C = 0.1$	0.03		MHz

\*Pulse test  $t_p = 300\mu s$   $\delta \leq 1.8\%$