# **NPN Power Silicon Transistor**



Rev. V1

### Features

- High Voltage: V<sub>CEO(SUS)</sub> = 300 V min.
- Wide Area of Safe Operation
- Designed for use in series regulators, power amplifiers, inverters, deflection circuits, switching regulators, and high voltage bridge amplifiers.
- TO-3 (TO-204AA) Package



### **Electrical Characteristics**

Parameter	Test Conditions	Symbol	Units	Min.	Max.
Collector-Emitter Sustaining Voltage	I <sub>C</sub> = 0.2 A; I <sub>B</sub> = 0	$I_{\rm C}$ = 0.2 A; $I_{\rm B}$ = 0 $V_{\rm CEO(SUS)}$ V		300	
Collector-Emitter Sustaining Voltage	$I_{C}$ = 0.2 A; $R_{BE} \leq 50 \Omega$ $V_{CEO(SUS)}$ V		V	350	
Emitter-Base Breakdown Voltage	I <sub>E</sub> = 0.02 A; I <sub>C</sub> = 0 V <sub>(BR)EBO</sub> V		V	6	
Collector-Emitter Saturation Voltage	I <sub>C</sub> = 2 A; I <sub>B</sub> = 0.25 A	0.25 A V <sub>CE(SAT)-1</sub> \			2.5
Collector-Emitter Saturation Voltage	I <sub>C</sub> = 4.5 A; I <sub>B</sub> = 1.125 A	V <sub>CE(SAT)-2</sub> V			5.0
Base-Emitter On Voltage	I <sub>C</sub> = 2 A; V <sub>CE</sub> = 10 V	V <sub>BE(on)</sub> V			3.0
Collector Cutoff Current	V <sub>BE</sub> = 375 V; V <sub>BE</sub> = -1.5 V V <sub>BE</sub> = 300 V; V <sub>BE</sub> = -1.5 V; T <sub>C</sub> = 150°C	I <sub>CEV</sub> mA			2 3
Collector Cutoff Current	V <sub>BE</sub> = 200 V; I <sub>B</sub> = 0		mA		2
Emitter Cutoff Current	$V_{BE} = 6 \text{ V}; I_C = 0$ $I_{ES}$		mA		5
Forward Bias, Second Breakdown Collector Current	tp=1 sec, $V_{CE}$ =100 Vdc $I_{S/B}$		А	0.8	
AC Forward Current Transfer Ratio	$F=1\;KHz;V_{CE}=10\;Vdc,I_{C}=0.4\;A\qquad\qquadh_{fe}$			20	
DC Current Gain	I <sub>C</sub> = 0.4 A; V <sub>CE</sub> = 10 V	h <sub>Fe-1</sub>		20	80
DC Current Gain	I <sub>C</sub> = 2 A; V <sub>CE</sub> = 10 V	h <sub>Fe-2</sub>		20	80
DC Current Gain	I <sub>C</sub> = 4.5 A; V <sub>CE</sub> = 10 V	10 V h <sub>Fe-3</sub>		5	
Current-Gain - Bandwidth Product	I <sub>C</sub> = 0.2 A; V <sub>CE</sub> = 10 V	/ f <sub>T</sub> MHz		2	
Output Capacitance	$I_E$ = 0; $V_{CB}$ = 10 V; $f_{test}$ = 1.0 MHz	C <sub>OB</sub>	pF		250

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1

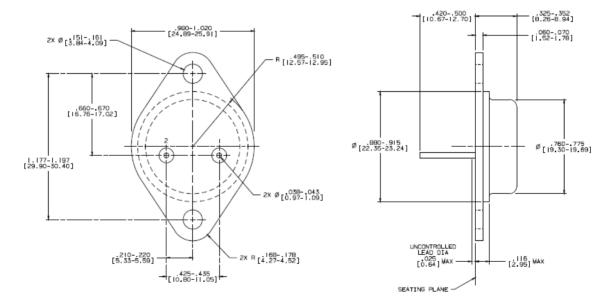
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### **Absolute Maximum Ratings**

Ratings	Symbol	Value	
Collector - Base Voltage	V <sub>CBO</sub>	375 Vdc	
Collector - Emitter Voltage ( $R_{BE}$ <50 $\Omega$ )	V <sub>CER(SUS)</sub>	350 Vdc	
Collector - Emitter Voltage	V <sub>CEO(SUS)</sub>	300 Vdc	
Emitter - Base Voltage	V <sub>EBO</sub>	6 Vdc	
Collector Current - Continuous	Ι <sub>C</sub>	5 Adc	
Base Current	Ι <sub>Β</sub>	2 Adc	
Collector Power Dissipation	Pc	100 W	
Junction Temperature	TJ	+200°C	
Operating & Storage Temperature Range	T <sub>OP</sub> , T <sub>STG</sub>	-65°C to +200°C	

### **Outline Drawing**



NOTES.

IL STANDARD HEADER TYPE SOLID BASE. 2. STANDARD HEADER TYPE SOLID BASE. 3. LEAD NOT BENT GREATER THAN 15°. 4. DIMENSIONS BASED ON JEDEC STANDARD TO-3 PUBLICATION 95, PA

2

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