## **PNP Power Silicon Transistor**



Rev. V1

#### Features

- JAN, JANTX, JANTXV, JANS, and JANSR 100K rads (si) per MIL-PRF-19500/561
- TO-39 (TO-205AD) Package



#### **Electrical Characteristics**

Parameter	Test Conditions	Symbol	Units	Min.	Max.
Off Characteristics			II		1
Collector - Emitter Breakdown Voltage	I <sub>C</sub> = 50 mAdc	V <sub>(BR)CEO</sub>	Vdc	100	_
Collector - Emitter Cutoff Current	$V_{CE}$ = 100 Vdc $V_{CE}$ = 90 Vdc, $V_{BE}$ = 1.5 Vdc	I <sub>CEO</sub> I <sub>CEX</sub>	µAdc		100 10
Collector - Base Cutoff Current	V <sub>CB</sub> = 100 Vdc	I <sub>CBO</sub>	µAdc	_	10
Emitter - Base Cutoff Current	$V_{EB}$ = 6.0 Vdc	I <sub>EBO</sub>	µAdc		100
On Characteristics <sup>1</sup>		1	II		1
Forward Current Transfer Ratio	$I_{C} = 0.5 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$ $I_{C} = 2.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$ $I_{C} = 5.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$	H <sub>FE</sub>	-	60 60 40	 240 
Collector - Emitter Saturation Voltage	$I_{C}$ = 2.0 Adc, $I_{B}$ = 0.2 Adc $I_{C}$ = 5.0 Adc, $I_{B}$ = 0.5 Adc	V <sub>CE(SAT)</sub>	Vdc	_	0.7 1.2
Emitter - Base Saturation Voltage	$I_{C}$ = 2.0 Adc, $I_{B}$ = 0.2 Adc $I_{C}$ = 5.0 Adc, $I_{B}$ = 0.5 Adc	$V_{BE(SAT)}$	Vdc	_	1.2 1.8
Dynamic Characteristics					
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio	$I_{C}$ = 0.5 Adc, $V_{CE}$ = 10.0 Vdc, f = 10 mHz	H <sub>FE</sub>	-	3	15
Output Capacitance	$V_{CB}$ = 10 Vdc, I <sub>E</sub> = 0, 100 kHz ≤ f ≤ 1 MHz	Сово	pF		300
Input Capacitance	$V_{BE}$ = 2 Vdc, I <sub>C</sub> = 0, 100 kHz ≤ f ≤ 1 MHz	CIBO	pF	_	1250
Switching Characteristics			II		1
Delay Time	$V_{CC}$ = -40 Vdc; $V_{BE(OFF)}$ = 2.3 Vdc	T <sub>D</sub>	ns		100
Rise Time	$I_{\rm C}$ = 2.0 Adc, $I_{\rm B}$ 1 = 0.2 Adc	T <sub>R</sub>	ns		100
Storage Time	$V_{CC}$ = -40 Vdc; I <sub>C</sub> = 2.0 Adc	Ts	μs	—	2.0
Fall Time	$I_{\rm B}1 = -I_{\rm B}2 = 0.2$ Adc	T <sub>F</sub>	ns	—	200
Safe Operating Area					
	dc				
1 Pulse Test: Pulse Width = 300 us Duty Cycle <2	0%				

1. Pulse Test: Pulse Width = 300  $\mu$ s, Duty Cycle ≤2.0%.

<sup>1</sup> 

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#### **Absolute Maximum Ratings**

Ratings	Symbol	Value
Collector - Emitter Voltage	V <sub>CEO</sub>	100 Vdc
Collector - Base Voltage	V <sub>CBO</sub>	100 Vdc
Emitter - Base Voltage	V <sub>EBO</sub>	6 Vdc
Base Current	I <sub>B</sub>	1 Adc
Collector Current	Ι <sub>C</sub>	5 Adc
Total Power Dissipation (a) $T_A = 25^{\circ}C$ (b) $T_C = 25^{\circ}C$	PT	1.0 W 17.5 W
Operating & Storage Temperature Range	T <sub>OP</sub> , T <sub>STG</sub>	-65°C to +200°C

#### **Thermal Characteristics**

Characteristics	Symbol	Max. Value
Thermal Resistance, Junction to Case		10°C/W

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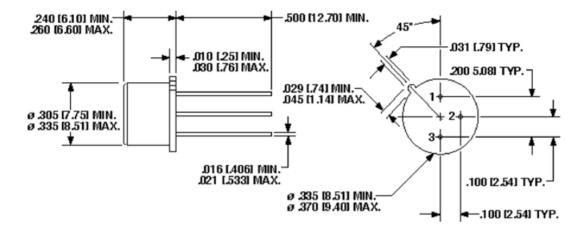
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#### **Outline Drawing**



1. Dimensions are in inches [mm].

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