

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					'		
Collector - Emitter Breakdown Voltage	I <sub>C</sub> = 50 mAdc	$V_{(BR)CEO}$	Vdc	100	_		
Collector - Emitter Cutoff Current	$V_{CE} = 100 \text{ Vdc}$ $V_{CE} = 90 \text{ Vdc}, V_{BE} = 1.5 \text{ Vdc}$	I <sub>CEO</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 <sub>EB</sub> = 6.0 Vdc	I <sub>EBO</sub>	μAdc	_	100		
On Characteristics <sup>1</sup>		1			ı		
Forward Current Transfer Ratio	$I_{C}$ = 0.5 Adc, $V_{CE}$ = 2.0 Vdc $I_{C}$ = 2.0 Adc, $V_{CE}$ = 2.0 Vdc $I_{C}$ = 5.0 Adc, $V_{CE}$ = 2.0 Vdc	H <sub>FE</sub>	-	60 60 40	240 —		
Collector - Emitter Saturation Voltage	$I_C = 2.0 \text{ Adc}, I_B = 0.2 \text{ Adc}$ $I_C = 5.0 \text{ Adc}, I_B = 0.5 \text{ Adc}$	V <sub>CE(SAT)</sub>	Vdc	_	0.7 1.2		
Emitter - Base Saturation Voltage	$I_C = 2.0 \text{ Adc}, I_B = 0.2 \text{ Adc}$ $I_C = 5.0 \text{ Adc}, I_B = 0.5 \text{ Adc}$	V <sub>BE(SAT)</sub>	Vdc	_	1.2 1.8		
Dynamic Characteristics							
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio	$I_C = 0.5 \text{ Adc}, V_{CE} = 10.0 \text{ Vdc}, f = 10 \text{ mHz}$	H <sub>FE</sub>	-	3	15		
Output Capacitance	V <sub>CB</sub> = 10 Vdc, I <sub>E</sub> = 0, 100 kHz ≤ f ≤ 1 MHz	Сово	pF	_	300		
Input Capacitance	V <sub>BE</sub> = 2 Vdc, I <sub>C</sub> = 0, 100 kHz ≤ f ≤ 1 MHz	C <sub>IBO</sub>	pF	_	1250		
Switching Characteristics							
Delay Time	$V_{CC}$ = -40 Vdc; $V_{BE(OFF)}$ = 2.3 Vdc	T <sub>D</sub>	ns	_	100		
Rise Time	I <sub>C</sub> = 2.0 Adc, I <sub>B</sub> 1 = 0.2 Adc	T <sub>R</sub>	ns		100		
Storage Time	$V_{CC}$ = -40 Vdc; $I_C$ = 2.0 Adc	Ts	μs	_	2.0		
Fall Time	$I_B 1 = -I_B 2 = 0.2 \text{ Adc}$	T <sub>F</sub>	ns		200		

#### Safe Operating Area

DC Tests:  $T_C = +25^{\circ}C$ , I Cycle,  $t \ge 0.5$  s Test 1:  $V_{CE} = 2$  Vdc,  $I_C = 5$  Adc Test 2:  $V_{CE} = 90$  Vdc,  $I_C = 55$  mAdc

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<sup>1.</sup> Pulse Test: Pulse Width = 300 µs, Duty Cycle ≤2.0%.



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# **Absolute Maximum Ratings**

Ratings	Symbol	Value
Collector - Emitter Voltage	$V_{CEO}$	100 Vdc
Collector - Base Voltage	$V_{CBO}$	100 Vdc
Emitter - Base Voltage	$V_{EBO}$	6 Vdc
Base Current	I <sub>B</sub>	1 Adc
Collector Current	Ic	5 Adc
Total Power Dissipation  @ T <sub>A</sub> = 25°C  @ T <sub>C</sub> = 25°C	P <sub>T</sub>	1.0 W 17.5 W
Operating & Storage Temperature Range	T <sub>OP</sub> , T <sub>STG</sub>	-65°C to +200°C

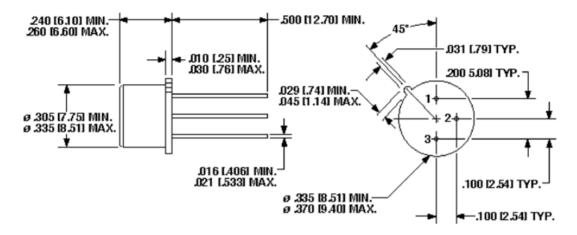
## **Thermal Characteristics**

Characteristics	Symbol	Max. Value
Thermal Resistance, Junction to Case	$R_{ heta JC}$	10°C/W



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## **Outline Drawing**



1. Dimensions are in inches [mm].



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