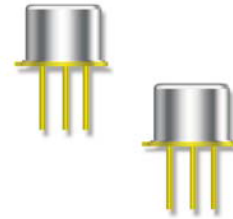


NPN Power Silicon Transistor

Rev. V1

Features

- JAN, JANTX, JANTXV, JANS, and JANSR 100K rads (si) per MIL-PRF-19500/560
- TO-39 (TO-205AD) Package



Electrical Characteristics

Parameter	Test Conditions	Symbol	Units	Min.	Max.
Off Characteristics					
Collector - Emitter Breakdown Voltage	$I_C = 50 \text{ mA dc}$	$V_{(BR)CEO}$	Vdc	100	—
Collector - Emitter Cutoff Current	$V_{CE} = 100 \text{ Vdc}$ $V_{CE} = 90 \text{ Vdc}, V_{BE} = 1.5 \text{ Vdc}$	I_{CEO} I_{CEX}	$\mu\text{A dc}$	—	100 1.0
Collector - Base Cutoff Current	$V_{CB} = 100 \text{ Vdc}$	I_{CBO}	$\mu\text{A dc}$	—	1.0
Emitter - Base Cutoff Current	$V_{EB} = 6.0 \text{ Vdc}$	I_{EBO}	$\mu\text{A dc}$	—	100
On Characteristics¹					
Forward Current Transfer Ratio	$I_C = 0.5 \text{ A dc}, V_{CE} = 2.0 \text{ Vdc}$ $I_C = 2.0 \text{ A dc}, V_{CE} = 2.0 \text{ Vdc}$ $I_C = 5.0 \text{ A dc}, V_{CE} = 2.0 \text{ Vdc}$	H_{FE}	-	60 60 40	— 240 —
Collector - Emitter Saturation Voltage	$I_C = 2.0 \text{ A dc}, I_B = 0.2 \text{ A dc}$ $I_C = 5.0 \text{ A dc}, I_B = 0.5 \text{ A dc}$	$V_{CE(SAT)}$	Vdc	—	0.7 1.2
Emitter - Base Saturation Voltage	$I_C = 2.0 \text{ A dc}, I_B = 0.2 \text{ A dc}$ $I_C = 5.0 \text{ A dc}, I_B = 0.5 \text{ A dc}$	$V_{BE(SAT)}$	Vdc	—	1.2 1.8
Dynamic Characteristics					
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio	$I_C = 0.5 \text{ A dc}, V_{CE} = 10.0 \text{ Vdc}, f = 10 \text{ MHz}$	$ H_{FE} $	-	3	15
Output Capacitance	$V_{CB} = 10 \text{ Vdc}, I_E = 0, 100 \text{ kHz} \leq f \leq 1 \text{ MHz}$	C_{OBO}	pF	—	250
Input Capacitance	$V_{BE} = 2 \text{ Vdc}, I_C = 0, 100 \text{ kHz} \leq f \leq 1 \text{ MHz}$	C_{IBO}	pF	—	1000
Safe Operating Area					
DC Tests:	$T_C = +25^\circ\text{C}, 1 \text{ Cycle}, t \geq 0.5 \text{ s}$				
Test 1:	$V_{CE} = 2 \text{ Vdc}, I_C = 5 \text{ A dc}$				
Test 2:	$V_{CE} = 5 \text{ Vdc}, I_C = 2 \text{ A dc}$				
Test 3:	$V_{CE} = 90 \text{ Vdc}, I_C = 55 \text{ mA dc}$				

1. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

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Absolute Maximum Ratings¹

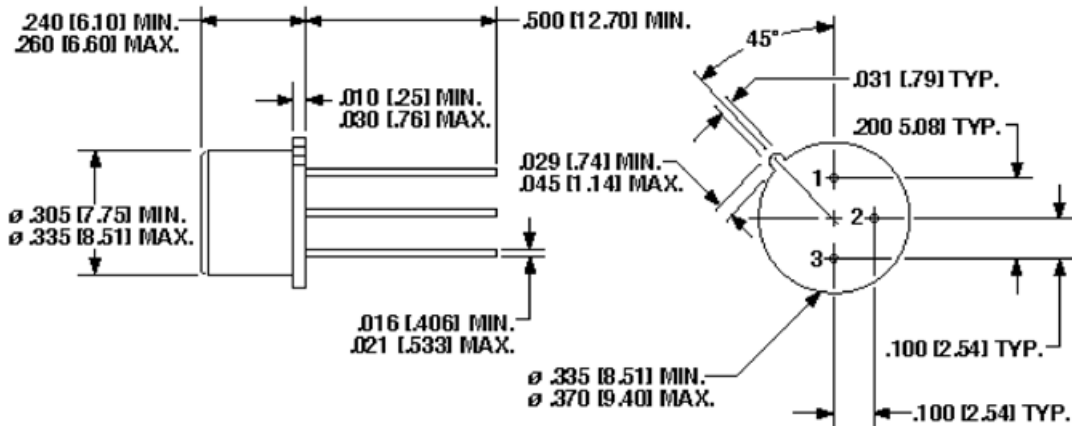
Ratings	Symbol	Value
Collector - Emitter Voltage	V_{CEO}	100 Vdc
Collector - Base Voltage	V_{CBO}	100 Vdc
Emitter - Base Voltage	V_{EBO}	6 Vdc
Base Current	I_B	1 Adc
Collector Current	I_C	5 Adc
Total Power Dissipation @ $T_A = 25^\circ\text{C}$ @ $T_C = 25^\circ\text{C}$	P_T	1.0 W 17.5 W
Operating & Storage Temperature Range	T_{OP}, T_{STG}	-65°C to $+200^\circ\text{C}$

1. Derate linearly 434 mW/°C for $T_C > 25^\circ\text{C}$

Thermal Characteristics

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

Outline Drawing



1. Dimensions are in inches [mm].

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