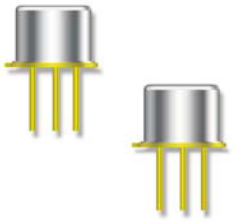
2N5339

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 mAdc	$V_{(BR)CEO}$	Vdc	100	—
Collector - Emitter Cutoff Current	V_{CE} = 100 Vdc V_{CE} = 90 Vdc, V_{BE} = 1.5 Vdc	I_{CEO} I_{CEX}	µAdc	— —	100 1.0
Collector - Base Cutoff Current	V_{CB} = 100 Vdc	I_{CBO}	µAdc	—	1.0
Emitter - Base Cutoff Current	V_{EB} = 6.0 Vdc	I_{EBO}	µAdc	—	100
On Characteristics[1]					
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_{FE}	-	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	$V_{CE(SAT)}$	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	$\lvert H_{FE} \rvert$	-	3	15
Output Capacitance	V_{CB} = 10 Vdc, I_E = 0, 100 kHz ≤ f ≤ 1 MHz	C_{OBO}	pF	—	250
Input Capacitance	V_{BE} = 2 Vdc, I_C = 0, 100 kHz ≤ f ≤ 1 MHz	C_{IBO}	pF	—	1000
Safe Operating Area					
DC Tests: Test 1: Test 2: Test 3:	T_C = +25°C, I Cycle, t ≥ 0.5 s V_{CE} = 2 Vdc, I_C = 5 Adc V_{CE} = 5 Vdc, I_C = 2 Adc V_{CE} = 90 Vdc, I_C = 55 mAdc				

1. Pulse Test: Pulse Width = 300 µs, Duty Cycle ≤2.0%.

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Absolute Maximum Ratings[1]

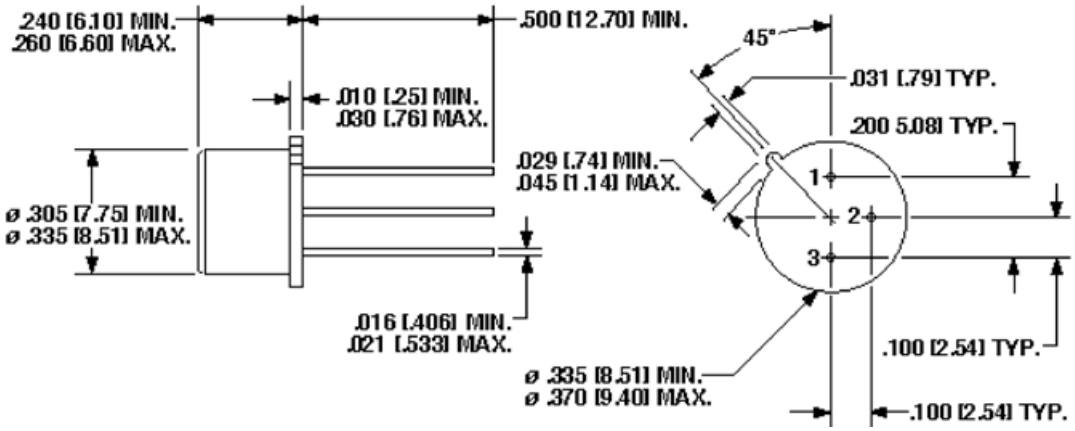
Ratings	Symbol	Value
Collector - Emitter Voltage	V_{CEO}	100 Vdc
Collector - Base Voltage	V_{CBO}	100 Vdc
Emitter - Base Voltage	V_{EBO}	6 Vdc
Base Current	I_B	1 Adc
Collector Current	I_C	5 Adc
Total Power Dissipation @ T_A = 25°C @ T_C = 25°C	P_T	1.0 W 17.5 W
Operating & Storage Temperature Range	T_{OP},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

1. Derate linearly 434 mW/°C for T_C > 25°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].