2N3055

NPN Power Silicon Transistor

Rev. V1

Features

- Available in JAN, JANTX, JANTXV per MIL-PRF-19500/407
- TO-3 (TO-204AA) Package

Electrical Characteristics

Parameter	Test Conditions	Symbol	Units	Min.	Max.
Off Characteristics					
Collector - Emitter Breakdown Voltage	I_C = 200 mAdc I_C = 200 mAdc, R_{BE} = 100 Ω V_{BE} = -1.5 Vdc, I_C = 200 mAdc	$V_{(BR)CEO}$ $V_{(BR)CER}$ $V_{(BR)CEX}$	Vdc	70 80 90	—
Collector - Emitter Cutoff Current	V_{CE} = 60 Vdc V_{BE} = = -1.5 Vdc, V_{CE} = 100 Vdc	I_{CEO} I_{CEX}	mAdc	—	1 1
Emitter - Base Cutoff Current	V_{EB} = 7.0 Vdc	I_{EBO}	mAdc	—	1
On Characteristics					
Forward Current Transfer Ratio	I_C = 0.5 Adc, V_{CE} = 4.0 Vdc I_C = 4.0 Adc, V_{CE} = 4.0 Vdc I_C = 10.0 Adc, V_{CE} = 4.0 Vdc	H_{FE}	-	40 20 5	— 60 —
Collector - Emitter Saturation Voltage	I_C = 4.0 Adc, I_B = 0.4 Adc I_C = 10.0 Adc, I_B = 3.3 Adc	$V_{CE(SAT)}$	Vdc	—	0.75 2.0
Emitter - Base Saturation Voltage	I_C = 4.0 Adc, V_{CE} = 4.0 Vdc	$V_{BE(SAT)}$	Vdc	—	1.4
Dynamic Characteristics					
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio	I_C = 1 Adc, V_{CE}= 4.0 Vdc, f = 100 kHz	$\lvert H_{FE} \rvert$		8	40
Output Capacitance	V_{CB} = 10 Vdc, I_E = 0, 100 kHz ≤ f ≤ 1 MHz	C_{OBO}	pF	—	700
Switching Characteristics					
Turn-On Time	V_{CC} = 30 Vdc; I_C = 4.0 Adc; I_B1 = 0.4 Adc	T_{ON}	µs	—	6
Turn-Off Time	I_C = 4.0 Adc; I_B1= -I_B2= 0.4 Adc	T_{OFF}	µs	—	12
Safe Operating Area					
DC Tests: Test 1: Test 2:	T_C = +25 °C, I Cycle, t = 1.0 s V_{CE} = 7.8 Vdc, I_C = 15 Adc V_{CE} = 70.0 Vdc, I_C = 1.67 Adc				

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Absolute Maximum Ratings

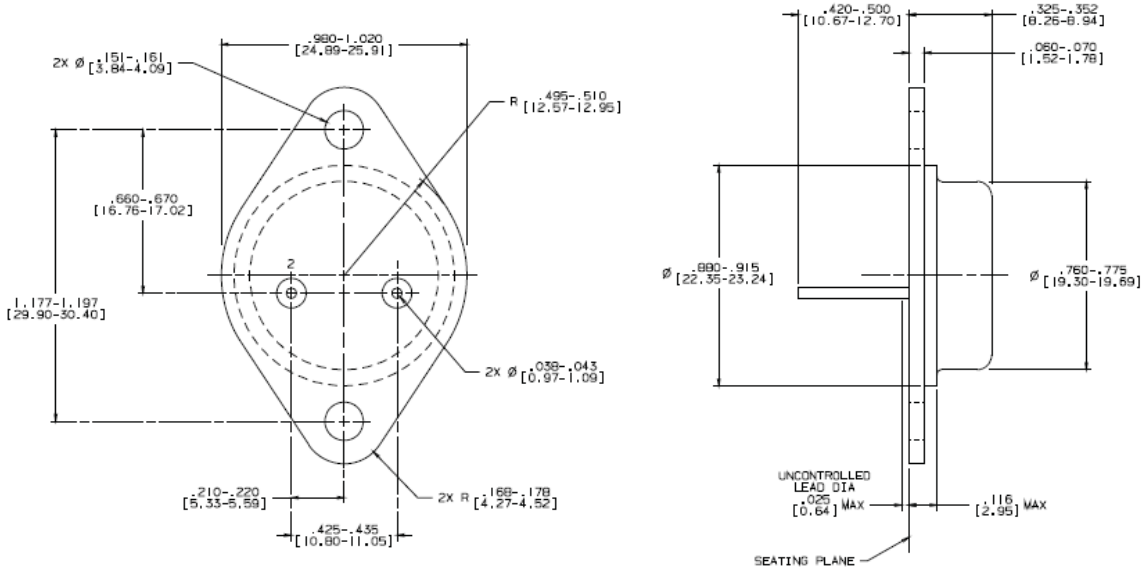
Ratings	Symbol	Value
Collector - Emitter Voltage	V_{CEO}	70 Vdc
Collector - Base Voltage	V_{CBO}	100 Vdc
Emitter - Base Voltage	V_{EBO}	7 Vdc
Base Current	I_B	7 Vdc
Collector Current	I_C	15 Adc
Total Power Dissipation @ TA = 25°C[1]	P_T	6 W
Operating & Storage Temperature Range	T_{OP}, T_{STG}	-65°C to +200°C

1. Derate linearly @ 34.2 mW / °C for T_A = 25 °C

Thermal Characteristics

Characteristics	Symbol	Max. Value
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.5°C/W

Outline Drawing



NOTES:
1. STANDARD HEADER TYPE SOLID BASE.
2. STANDARD LEAD FINISH PER MIL-M-38510 TYPE X OR EQUIVALENT.
3. LEAD NOT BENT GREATER THAN 15°.
4. DIMENSIONS BASED ON JEDEC STANDARD TO-3 PUBLICATION 95, PA