

## NPN HIGH POWER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/622

### Devices

2N7368

### Qualified Level

JAN  
JANTX  
JANTXV

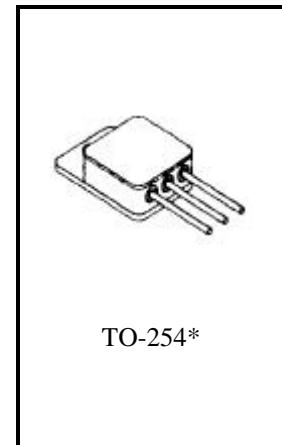
### MAXIMUM RATINGS

Ratings	Symbol	Value	Units
Collector-Emitter Voltage	$V_{CEO}$	80	Vdc
Collector-Base Voltage	$V_{CBO}$	80	Vdc
Emitter-Base Voltage	$V_{EBO}$	7.0	Vdc
Base Current	$I_B$	4.0	Adc
Collector Current	$I_C$	10	Adc
Total Power Dissipation @ $T_C = 25^{\circ}C$ <sup>(1)</sup>	$P_T$	115	W
Operating & Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +200	$^{\circ}C$

### THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.5	$^{\circ}C/W$

1) Derate linearly 0.657 W/ $^{\circ}C$  for  $T_C > 25^{\circ}C$



\*See appendix A for package outline

### ELECTRICAL CHARACTERISTICS ( $T_C = 25^{\circ}C$ unless otherwise noted)

Characteristics	Symbol	Min.	Max.	Unit
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### OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage $I_C = 0.2$ Adc	$V_{CEO(sus)}$	80		Vdc
Collector-Emitter Cutoff Current $V_{CE} = 70$ Vdc	$I_{CES}$		1.0	mAdc
Collector-Emitter Cutoff Current $V_{CE} = 80$ Vdc, $V_{BE} = 1.5$ Vdc	$I_{CEX}$		1.0	mAdc
Emitter-Base Cutoff Current $V_{EB} = 7.0$ Vdc	$I_{EBO}$		1.0	mAdc

2N7368 JAN SERIES

**ELECTRICAL CHARACTERISTICS (con't)**

Characteristics	Symbol	Min.	Max.	Unit
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**ON CHARACTERISTICS** <sup>(2)</sup>

Forward-Current Transfer Ratio $I_C = 1.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$ $I_C = 3.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$	$h_{FE}$	50 30	175 140	
Collector-Emitter Saturation Voltage $I_C = 5.0 \text{ Adc}, I_B = 0.5 \text{ Adc}$	$V_{CE(sat)}$		1.0	Vdc
Base-Emitter Saturation Voltage $I_C = 5.0 \text{ Adc}, I_B = 0.5 \text{ Adc}$	$V_{BE(sat)}$		1.5	Vdc

**DYNAMIC CHARACTERISTICS**

Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 0.5 \text{ Adc}, V_{CE} = 10 \text{ Vdc}, f = 1.0 \text{ MHz}$	$ h_{fe} $	4.0	20	
Output Capacitance $V_{CB} = 10 \text{ Vdc}, I_E = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	$C_{obo}$		500	pF

**SAFE OPERATING AREA**

<p><b>DC Tests</b>  <math>T_C = +25^{\circ}\text{C}, 1 \text{ Cycle}, t \geq 1.0 \text{ s}</math>  <b>Test 1</b>  <math>V_{CE} = 11.5 \text{ Vdc}, I_C = 10 \text{ Adc}</math>  <b>Test 2</b>  <math>V_{CE} = 45 \text{ Vdc}, I_C = 2.5 \text{ Adc}</math>  <b>Test 3</b>  <math>V_{CE} = 60 \text{ Vdc}, I_C = 0.9 \text{ Adc}</math></p>
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(2) Pulse Test: Pulse Width = 300 $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .