

NPN HIGH POWER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/622

Devices

2N7368

Qualified Level

JAN
JANTX
JANTXV

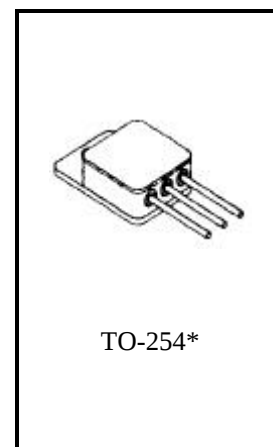
MAXIMUM RATINGS

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 @ $T_C = 25^{\circ}\text{C}$ ⁽¹⁾	P_T	115	W
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200	$^{\circ}\text{C}$

THERMAL CHARACTERISTICS

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

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



*See appendix A for package outline

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

Characteristics	Symbol	Min.	Max.	Unit
-----------------	--------	------	------	------

OFF CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
-----------------	--------	------	------	------

ON CHARACTERISTICS ⁽²⁾

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