

PNP HIGH POWER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/379

Devices

2N3791

2N3792

Qualified Level

JAN
JANTX
JANTXV

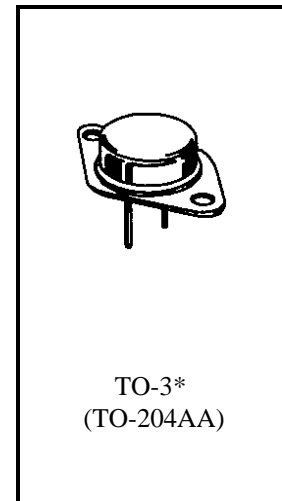
MAXIMUM RATINGS

Ratings	Symbol	2N3791	2N3792	Unit
Collector-Emitter Voltage	V_{CEO}	60	80	Vdc
Collector-Base Voltage	V_{CBO}	60	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	P_T	@ $T_A = +25^{\circ}C$ ⁽¹⁾	5.0	W
		@ $T_C = +100^{\circ}C$ ⁽²⁾	85.7	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	$R_{\theta JC}$	1.17	$^{\circ}C/W$

- 1) Derate linearly @ $28.57 \text{ mW}/^{\circ}C$ for $T_A > +25^{\circ}C$
- 2) Derate linearly @ $0.857 \text{ mW}/^{\circ}C$ for $T_C > +100^{\circ}C$



*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 $I_C = 10 \text{ mAdc}$	2N3791 2N3792	$V_{(BR)CEO}$	60 80	Vdc
Collector-Emitter Cutoff Current $V_{CE} = 50 \text{ Vdc}$ $V_{CE} = 70 \text{ Vdc}$	2N3791 2N3792	I_{CES}	5.0 5.0	mAdc
Collector-Emitter Cutoff Current $V_{CE} = 60 \text{ Vdc}, V_{BE} = 1.5 \text{ Vdc}$ $V_{CE} = 80 \text{ Vdc}, V_{BE} = 1.5 \text{ Vdc}$	2N3791 2N3792	I_{CEX}	5.0 5.0	mAdc

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
Collector-Base Cutoff Current V _{CB} = 60 Vdc 2N3791 V _{CB} = 80 Vdc 2N3792	I _{CBO}		5.0 5.0	mAdc
Emitter-Base Cutoff Current V _{EB} = 7.0 Vdc	I _{EBO}		5.0	mAdc

ON CHARACTERISTICS ⁽³⁾

Forward-Current Transfer Ratio I _C = 1.0 Adc, V _{CE} = 2.0 Vdc I _C = 3.0 Adc, V _{CE} = 2.0 Vdc I _C = 5.0 Adc, V _{CE} = 2.0 Vdc I _C = 10 Adc, V _{CE} = 4.0 Vdc	h _{FE}	50 30 10 5.0	150 120	
Collector-Emitter Saturation Voltage I _C = 5.0 Adc, I _B = 0.5 Adc I _C = 10 Adc, I _B = 2.0 Adc	V _{CE(sat)}		1.0 2.5	Vdc
Base-Emitter Saturation Voltage I _C = 5.0 Adc, I _B = 0.5 Adc I _C = 10 Adc, I _B = 2.0 Adc	V _{BE(sat)}		1.5 3.0	Vdc

DYNAMIC CHARACTERISTICS

Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio I _C = 0.5 Adc, V _{CE} = 10 Vdc, f = 1.0 MHz	h _{fe}	4.0	20	
Small-Signal Short-Circuit Forward Current Transfer Ratio I _C = 0.5 Adc, V _{CE} = 10 Vdc, f = 1.0 kHz	h _{fe}	30	300	
Output Capacitance V _{CB} = 10 Vdc, I _E = 0, f = 1.0 MHz	C _{obo}		500	pF

SAFE OPERATING AREA

DC Tests				
T _C = +25°C, 1 Cycle, t ≥ 1.0 s				
Test 1				
V _{CE} = 15 Vdc, I _C = 10 Adc				
Test 2				
V _{CE} = 40 Vdc, I _C = 3.75 Adc				
Test 3				
V _{CE} = 55 Vdc, I _C = 0.9 Adc	2N3791			
V _{CE} = 65 Vdc, I _C = 0.9 Adc	2N3792			

(3) Pulse Test: Pulse Width = 300µs, Duty Cycle ≤ 2.0%.