Microsemi LAWRENCE

TECHNICAL DATA

PNP HIGH POWER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/379

Devices		Qualified Level
2N3791	**2N3792**	**JAN JANTX JANTXV**

MAXIMUM RATINGS

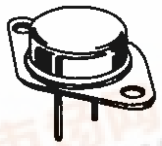
Ratings	Symbol	2N3791	2N3792	Unit
Collector-Emitter Voltage	V_{CEO}	60	80	Vdc
Collector-Base Voltage	V_{CBO}	60	80	Vdc
Emitter-Base Voltage	V_{EBO}	7.0		Vdc
Base Current	I_B	4.0		Adc
Collector Current	I_C	10		Adc
Total Power Dissipation @ $T_A = +25^0C$ [1] @ $T_C = +100^0C$ [2]	P_T	5.0 85.7		W W
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		^0C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.17	$^0C/W$

1) Derate linearly @ 28.57 mW/^0C for $T_A > +25^0C$

2) Derate linearly @ 0.857 mW/^0C for $T_C > +100^0C$



TO-3*
(TO-204AA)

*See Appendix A for Package Outline

ELECTRICAL CHARACTERISTICS ($T_C = 25^0C$ unless otherwise noted)

Characteristics		Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage $I_C = 10$ mAdc	2N3791 2N3792	$V_{(BR)CEO}$	60 80		Vdc
Collector-Emitter Cutoff Current $V_{CE} = 50$ Vdc $V_{CE} = 70$ Vdc	2N3791 2N3792	I_{CES}		5.0 5.0	mAdc
Collector-Emitter Cutoff Current $V_{CE} = 60$ Vdc, $V_{BE} = 1.5$ Vdc $V_{CE} = 80$ Vdc, $V_{BE} = 1.5$ 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	I_{CBO}		5.0	mAdc
V_{CB} = 80 Vdc	2N3792			5.0	
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	h_{FE}	50	150	
I_C = 3.0 Adc, V_{CE} = 2.0 Vdc		30	120	
I_C = 5.0 Adc, V_{CE} = 2.0 Vdc		10		
I_C = 10 Adc, V_{CE} = 4.0 Vdc		5.0		
Collector-Emitter Saturation Voltage				
I_C = 5.0 Adc, I_B = 0.5 Adc	$V_{CE(sat)}$		1.0	Vdc
I_C = 10 Adc, I_B = 2.0 Adc			2.5	
Base-Emitter Saturation Voltage				
I_C = 5.0 Adc, I_B = 0.5 Adc	$V_{BE(sat)}$		1.5	Vdc
I_C = 10 Adc, I_B = 2.0 Adc			3.0	

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	$\lvert h_{fe} \rvert$	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^{0}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%.