Microsemi LAWRENCE

TECHNICAL DATA

NPN HIGH POWER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/384

Devices		*Qualified Level*
2N3584	**2N3585**	**JAN JANTX JANTXV**

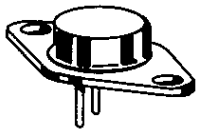
MAXIMUM RATINGS

Ratings	Symbol	2N3584	2N3585	Units
Collector-Emitter Voltage	V_{CEO}	250	300	Vdc
Collector-Base Voltage	V_{CBO}	375	500	Vdc
Collector-Base Voltage	V_{CER}	300	400	Vdc
Emitter-Base Voltage	V_{EBO}	6.0		Vdc
Base Current	I_B	1.0		Adc
Collector Current	I_C	2.0		Adc
Total Power Dissipation @ T_A = +25^{0}C (1) @ T_C = +25^{0}C (2)	P_T	2.5 35		W W
Operating & Storage Junction Temperature Range	T_J, T_{stg}	-65 to +200		^{0}C

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	5.0	^{0}C/W

1) Derate linearly @ 14.85 mW/^{0}C for T_A > +25^{0}C
2) Derate linearly @ 200 mW/^{0}C for T_C > +25^{0}C



TO-66* (TO-213AA)

*See Appendix A for Package Outline

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

Characteristics		Symbol	Min.	Max.	Unit
OFF CHARACTERISTICS					
Collector-Emitter Breakdown Voltage I_C = 10 mAdc	2N3584 2N3585	$V_{(BR)CEO}$	250 300		Vdc
Collector-Base Breakdown Voltage I_C = 15 mAdc	2N3584 2N3585	$V_{(BR)CER}$	375 500		Vdc
Collector-Emitter Cutoff Current V_{CE} = 150 Vdc		I_{CEO}		5.0	mAdc
Collector-Emitter Cutoff Current V_{CE} = 300 Vdc, V_{BE} = 1.5 Vdc V_{CE} = 400 Vdc, V_{BE} = 1.5 Vdc	2N3584 2N3585	I_{CEX}		1.0 1.0	mAdc
Emitter-Base Cutoff Current V_{EB} = 6.0 Vdc		I_{EBO}		0.5	mAdc

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ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
ON CHARACTERISTICS (3)				
Forward-Current Transfer Ratio I_C = 1.0 Adc, V_{CE} = 10 Vdc I_C = 100 mAdc, V_{CE} = 10 Vdc	h_{FE}	 25 40	100	
Collector-Emitter Saturation Voltage I_C = 1.0 Adc, I_B = 0.125 Adc	$V_{CE(sat)}$		0.75	Vdc
Base-Emitter Saturation Voltage I_C = 1.0 Adc, I_B = 0.1 Adc	$V_{BE(sat)}$		1.4	Vdc
DYNAMIC CHARACTERISTICS				
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio I_C = 200 mAdc, V_{CE} = 10 Vdc, f = 5.0 MHz	$\lvert h_{fe} \rvert$	3.0	15	
Small-Signal Short-Circuit Forward Current Transfer Ratio I_C = 1.0 Adc, V_{CE} = 10 Vdc, f = 1.0 kHz	h_{fe}	25	200	
Output Capacitance V_{CB} = 10 Vdc, I_E = 0, 100 kHz ≤ f ≤ 1.0 MHz	C_{obo}		120	pF
SWITCHING CHARACTERISTICS				
Turn-On Time V_{CC} = 30 Vdc; I_C = 1.0 Adc; I_B = 100 mAdc; R_C = 29 Ω	t_{on}		3.0	µs
Turn-Off Time V_{CC} = 30 Vdc; I_C = 1.0 Adc; I_B = -I_B = 100 mAdc; R_C = 29 Ω	t_{off}		7.0	µs

SAFE OPERATING AREA

DC Tests

T_C = +25^{0}C, 1 Cycle, t = 1.0 s

Test 1

V_{CE} = 17.5 Vdc, I_C = 2.0 Adc

Test 2

V_{CE} = 100 Vdc, I_C = 350 mAdc

Test 3

V_{CE} = 250 Vdc, I_C = 37 mAdc 2N3584

V_{CE} = 300 Vdc, I_C = 17 mAdc 2N3585

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