Microsemi LAWRENCE

TECHNICAL DATA

NPN POWER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/514

Devices		*Qualified Level*
2N6274	**2N6277**	**JAN JANTX JANTXV**

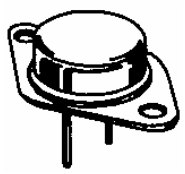
MAXIMUM RATINGS

Ratings	Symbol	2N6274	2N6277	Unit
Collector-Emitter Voltage	V_{CEO}	100	150	Vdc
Collector-Base Voltage	V_{CBO}	120	180	Vdc
Emitter-Base Voltage	V_{EBO}	6.0		Vdc
Base Current	I_B	20		Adc
Collector Current	I_C	50		Adc
Total Power Dissipation @ $T_C = +25^0C$ (1) @ $T_C = +100^0C$ (2)	P_T	250 143		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	$R_{\theta JC}$	0.7	$^0C/W$

1) Derate linearly 1.43 $W/^0C$ between $T_C = +25^0C$ and $T_C = +200^0C$



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 = 50 mAdc	2N6274 2N6277	$V_{(BR)CEO}$	100 150		Vdc
Collector-Emitter Cutoff Current V_{CE} = 50 Vdc V_{CE} = 75 Vdc	2N6274 2N6277	I_{CEO}		50 50	µAdc
Collector-Emitter Cutoff Current V_{CE} = 120 Vdc, V_{BE} = -1.5 Vdc V_{CE} = 180 Vdc, V_{BE} = -1.5 Vdc	2N6274 2N6277	I_{CEX}		10 10	µAdc
Emitter-Base Cutoff Current V_{EB} = 6.0 Vdc		I_{EBO}		100	µAdc
Collector-Base Cutoff Current V_{CB} = 120 Vdc V_{CB} = 180 Vdc	2N6274 2N6277	I_{CBO}		10 10	µAdc

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
ON CHARACTERISTICS (2)				
Forward-Current Transfer Ratio I_C = 1.0 Adc, V_{CE} = 4.0 Vdc I_C = 20 Adc, V_{CE} = 4.0 Vdc I_C = 50 Adc, V_{CE} = 4.0 Vdc	h_{FE}	 50 30 10	 120	
Collector-Emitter Saturation Voltage I_C = 20 Adc, I_B = 2.0 Adc I_C = 50 Adc, I_B = 10 Adc	$V_{CE(sat)}$		 1.0 3.0	Vdc
Base-Emitter Saturation Voltage I_C = 20 Adc, I_B = 2.0 Adc	$V_{BE(sat)}$		1.8	Vdc
DYNAMIC CHARACTERISTICS				
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio I_C = 1.0 Adc, V_{CE} = 10 Vdc, f = 10 MHz	$\lvert h_{fe} \rvert$	3.0	12	
Output Capacitance V_{CB} = 10 Vdc, I_E = 0, f = 1.0 MHz	C_{obo}		600	pF
SWITCHING CHARACTERISTICS				
Turn-On Time V_{CC} = 80 Vdc; I_C = 20 Adc; I_B = 2.0 Adc	t_{on}		0.5	µs
Turn-Off Time V_{CC} = 80 Vdc; I_C = 20 Adc; I_{B1} = -I_{B2} = 2.0 Adc	t_{off}		1.05	µs

SAFE OPERATING AREA

DC Tests

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

Test 1

V_{CE} = 5.0 Vdc, I_C = 50 Adc — All Types

Test 2

V_{CE} = 8.6 Vdc, I_C = 165 mAdc — All Types

Test 3

V_{CE} = 80 Vdc, I_C = 29 mAdc — 2N6274

Test 4

V_{CE} = 120 Vdc, I_C = 110 mAdc — 2N6277

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