6 Lake Street, Lawrence, MA 01841
1-800-446-1158 / (978) 620-2600 / Fax: (978) 689-0803
Website: http://www.microsemi.com

TECHNICAL DATA SHEET

NPN POWER SILICON TRANSISTOR

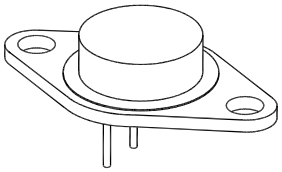
Qualified per MIL-PRF-19500/514

DEVICES

2N6274 2N6277

LEVELS

JAN
JANTX
JANTXV



TO-3 (TO-204AE)

ABSOLUTE MAXIMUM RATINGS ***(T_C = +25°C unless otherwise noted)***

Parameters / Test Condition	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	6.0	Vdc
Base Current	I_B	20	20	Adc
Collector Current	I_C	50	50	Adc
Total Power Dissipation @ T_C = +25°C (1) @ T_C = +100°C (2)	P_T	250 143		W
Operating & Storage Temperature Range	T_j , T_{stg}	-65 to +200		°C

THERMAL CHARACTERISTICS

Parameters / Test Conditions	Symbol	Max	Unit
Thermal resistance, Junction-to-Case	$R_{\theta JC}$	0.7	°C/W

Note: 1) Derate linearly 1.43 W/°C between T_C = +25°C and T_C = 200°C

ELECTRICAL CHARACTERISTICS ***(T_A = +25°C, unless otherwise noted)***

Parameters / Test Conditions		Symbol	Min.	Max.	Unit
OFF CHARACTERTICS (1)					
Collector-Emitter Breakdown Voltage I_C = 50mAdc	2N6274 2N6277	$V_{(BR)CEO}$	100 150		Vdc
Collector-Emitter Cutoff Current V_{CE} = 50Vdc V_{CE} = 75Vdc	 2N6274 2N6277	I_{CEO}		 50 50	µAdc
Collector-Emitter Cutoff Current V_{CE} = 120Vdc, V_{BE} = -1.5Vdc V_{CE} = 180Vdc, V_{BE} = -1.5Vdc	 2N6274 2N6277	I_{CEX}		 10 10	µAdc
Collector-Base Cutoff Current V_{CB} = 120Vdc V_{CB} = 180Vdc	 2N6274 2N6277	I_{CBO}		 10 10	µAdc
Emitter-Base Cutoff Current V_{EB} = 6.0Vdc		I_{EBO}		100	µAdc

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ELECTRICAL CHARACTERISTICS ***(T_A = +25°C, unless otherwise noted)***

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
ON CHARACTERISTICS (2)				
Forward-Current Transfer Ratio I_C = 1.0Adc, V_{CE} = 4.0Vdc I_C = 20Adc, V_{CE} = 4.0Vdc I_C = 50Adc, V_{CE} = 4.0Vdc	h_{FE}	 50 30 10	120	
Collector-Emitter Saturation Voltage I_C = 20Adc, I_B = 2.0Adc I_C = 50Adc, I_B = 10Adc	$V_{CE(sat)}$		 1.0 3.0	Vdc
Base-Emitter Saturation Voltage I_C = 20Adc, I_B = 2.0Adc	$V_{BE(sat)}$		1.8	Vdc

DYNAMIC CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Magnitude of Common Emitter Small-Signal Short-Circuit, Forward Current Transfer Ratio I_C = 1.0Adc, V_{CE} = 10Vdc, f = 10MHz	$\|h_{fe}\|$	3.0	12	
Output Capacitance V_{CB} = 10Vdc, I_E = 0, f = 1.0MHz	C_{obo}		600	pF

SWITCHING CHARACTERISTICS

Parameters / Test Conditions	Symbol	Min.	Max.	Unit
Turn-On Time V_{CC} = 80Vdc; I_C = 20Adc; I_B = 2.0Adc	t_{on}		0.5	µs
Turn-Off Time V_{CC} = 80Vdc ; I_C = 20Adc; I_{B1} = -I_{B2} = 2.0Adc	t_{off}		1.05	µs

SAFE OPERATING AREA

DC Tests
T_C = +25°C, 1 Cycle, t = 1.0s

Test 1
V_{CE} = 5.0Vdc, I_C = 50Adc — All Types

Test 2
V_{CE} = 8.6Vdc, I_C = 165mAdc — All Types

Test 3
V_{CE} = 80Vdc, I_C = 29mAdc — 2N6274

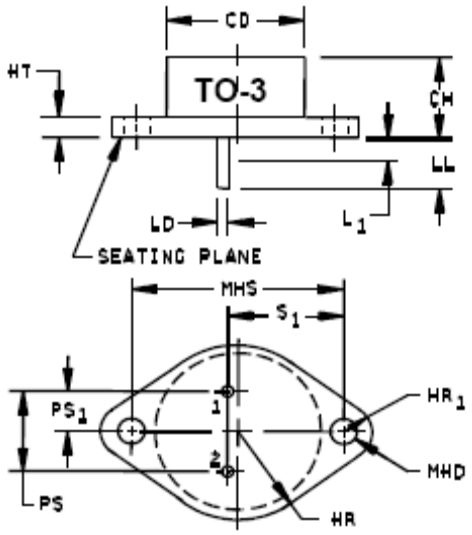
Test 4
V_{CE} = 120Vdc, I_C = 110mAdc — 2N6277

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

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TECHNICAL DATA SHEET

PACKAGE DIMENSIONS



Ltr	Dimensions				Notes
	Inches		Millimeters		
	Min	Max	Min	Max	
CD		.875		22.22	3
CH	.250	.328	6.35	8.33	
HR	.495	.525	12.57	13.34	
HR1	.131	.188	3.33	4.78	6
HT	.060	.135	1.52	3.43	
LD	.057	.063	1.45	1.60	5, 9
LL	.312	.500	7.92	12.70	4, 5, 9
L_1		.050		1.27	5, 9
MHD	.151	.161	3.84	4.09	7
MHS	1.177	1.197	29.90	30.40	
PS	.420	.440	10.67	11.18	
PS_1	.205	.225	5.21	5.72	5
S_1	.655	.675	16.64	17.15	

NOTE:

1. Dimensions are in inches.
* 2. Millimeters are given for general information only.
3. Body contour is optional within zone defined by CD.
4. These dimensions shall be measured at points .050 inch (1.27 mm) to .055 inch (1.40 mm) below seating plane. When gauge is not used, measurement shall be made at seating plane.
5. Both terminals.
6. At both ends.
7. Two holes.
8. Terminal 1 is the emitter, terminal 2 is base. The collector shall be electrically connected to the case.
* 9. LD applies between L1 and LL. Lead diameter shall not exceed twice LD within L1.
* 10. In accordance with ASME Y14.5M, diameters are equivalent to φx symbology.
11. The seating plane of the header shall be flat within .001 inch (0.03 mm) concave to .004 inch (0.10 mm) convex inside a .930 inch (23.62 mm) diameter circle on the center of the header and flat within .001 inch (0.03 mm) concave to .006 inch (0.15 mm) convex overall.

*** FIGURE 1**. Physical dimensions (TO-3)