

NPN POWER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/514

Devices

2N6274

2N6277

Qualified Level

JAN
JANTX
JANTXV

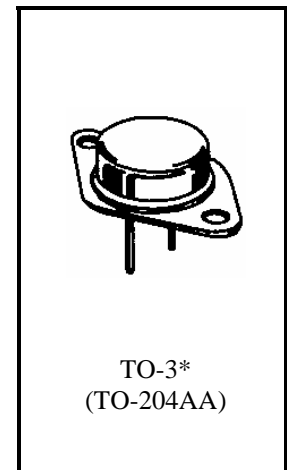
MAXIMUM RATINGS

Ratings	Symbol	2N6274	2N6277	Unit
Collector-Emitter Voltage	V_{CE0}	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	P_T	@ $T_C = +25^{\circ}C$ ⁽¹⁾	250	W
		@ $T_C = +100^{\circ}C$ ⁽²⁾	143	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	$R_{\theta JC}$	0.7	$^{\circ}C/W$

1) Derate linearly 1.43 W/ $^{\circ}C$ between $T_C = +25^{\circ}C$ and $T_C = +200^{\circ}C$



*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 $I_C = 50$ 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	μ Adc
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	μ Adc
Emitter-Base Cutoff Current $V_{EB} = 6.0$ Vdc		I_{EBO}	100	μ Adc
Collector-Base Cutoff Current $V_{CB} = 120$ Vdc $V_{CB} = 180$ Vdc	2N6274 2N6277	I_{CBO}	10 10	μ Adc

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
DC 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	h _{fe}	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°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%.