

NPN POWER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/514

Devices

2N6274

2N6277

Qualified Level

JAN
JANTX
JANTXV

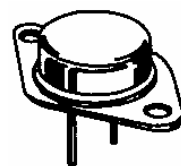
MAXIMUM RATINGS

Ratings	Symbol	2N6274	2N6277	Unit
Collector-Emitter Voltage	V_{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	@ $T_C = +25^{\circ}\text{C}$ ⁽¹⁾	250		W
		@ $T_C = +100^{\circ}\text{C}$ ⁽²⁾		W
Operating & Storage Junction Temperature Range	T_j, T_{stg}	-65 to +200		$^{\circ}\text{C}$

THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	0.7	$^{\circ}\text{C/W}$

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



TO-3*
(TO-204AA)

*See appendix A for package outline

ELECTRICAL CHARACTERISTICS ($T_C = 25^{\circ}\text{C}$ unless otherwise noted)

Characteristics	Symbol	Min.	Max.	Unit
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OFF CHARACTERISTICS

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

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
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ON CHARACTERISTICS ⁽²⁾

Forward-Current Transfer Ratio $I_C = 1.0 \text{ Adc}, V_{CE} = 4.0 \text{ Vdc}$ $I_C = 20 \text{ Adc}, V_{CE} = 4.0 \text{ Vdc}$ $I_C = 50 \text{ Adc}, V_{CE} = 4.0 \text{ Vdc}$	h_{FE}	50 30 10	120	
Collector-Emitter Saturation Voltage $I_C = 20 \text{ Adc}, I_B = 2.0 \text{ Adc}$ $I_C = 50 \text{ Adc}, I_B = 10 \text{ Adc}$	$V_{CE(sat)}$		1.0 3.0	Vdc
Base-Emitter Saturation Voltage $I_C = 20 \text{ Adc}, I_B = 2.0 \text{ Adc}$	$V_{BE(sat)}$		1.8	Vdc

DYNAMIC CHARACTERISTICS

Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 1.0 \text{ Adc}, V_{CE} = 10 \text{ Vdc}, f = 10 \text{ MHz}$	$ h_{fe} $	3.0	12	
Output Capacitance $V_{CB} = 10 \text{ Vdc}, I_E = 0, f = 1.0 \text{ MHz}$	C_{obo}		600	pF

SWITCHING CHARACTERISTICS

Turn-On Time $V_{CC} = 80 \text{ Vdc}, I_C = 20 \text{ Adc}, I_B = 2.0 \text{ Adc}$	t_{on}		0.5	μs
Turn-Off Time $V_{CC} = 80 \text{ Vdc}, I_C = 20 \text{ Adc}, I_{B1} = -I_{B2} = 2.0 \text{ Adc}$	t_{off}		1.05	μs

SAFE OPERATING AREA

DC Tests $T_C = +25^\circ\text{C}, 1 \text{ Cycle}, t = 1.0 \text{ s}$				
Test 1 $V_{CE} = 5.0 \text{ Vdc}, I_C = 50 \text{ Adc}$ All Types				
Test 2 $V_{CE} = 8.6 \text{ Vdc}, I_C = 165 \text{ mAdc}$ All Types				
Test 3 $V_{CE} = 80 \text{ Vdc}, I_C = 29 \text{ mAdc}$ 2N6274				
Test 4 $V_{CE} = 120 \text{ Vdc}, I_C = 110 \text{ mAdc}$ 2N6277				

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

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