

NPN POWER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/526

Devices

2N3879

Qualified Level

**JANTX
JANTXV**

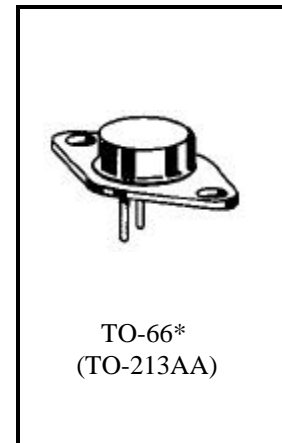
MAXIMUM RATINGS

Ratings	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	75	Vdc
Collector-Base Voltage	V_{CBO}	120	Vdc
Emitter-Base Voltage	V_{EBO}	7.0	Vdc
Base Current	I_B	5.0	Adc
Collector Current	I_C	7.0	Adc
Total Power Dissipation @ $T_C = 25^{\circ}C$ ⁽¹⁾	P_T	35	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	$R_{\theta JC}$	5.0	$^{\circ}C/W$

1) Derate linearly 200 mW/ $^{\circ}C$ for $T_C > 25^{\circ}C$



*See Appendix A for Package Outline

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

Characteristics	Symbol	Min.	Max.	Unit
-----------------	--------	------	------	------

OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage $I_C = 200$ mAdc	$V_{(BR)CEO}$	75		Vdc
Collector-Emitter Cutoff Current $V_{CE} = 50$ Vdc	I_{CEO}		5.0	Vdc
Collector-Emitter Cutoff Current $V_{CE} = 100$ Vdc, $V_{BE} = 1.5$ Vdc	I_{CEX}		4.0	mAdc
Collector-Base Cutoff Current $V_{CB} = 120$ Vdc	I_{CBO}		25	mAdc
Emitter-Base Cutoff Current $V_{EB} = 7.0$ Vdc	I_{EBO}		10	mAdc

ELECTRICAL CHARACTERISTICS (con't)

Characteristics	Symbol	Min.	Max.	Unit
ON CHARACTERISTICS ⁽²⁾				
Forward-Current Transfer Ratio $I_C = 0.5 \text{ Adc}, V_{CE} = 5.0 \text{ Vdc}$ $I_C = 4.0 \text{ Adc}, V_{CE} = 5.0 \text{ Vdc}$ $I_C = 4.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$	h_{FE}	40 20 12	80 100	
Collector-Emitter Saturation Voltage $I_C = 4.0 \text{ Adc}, I_B = 0.4 \text{ Adc}$	$V_{CE(sat)}$		1.2	Vdc
Base-Emitter Saturation Voltage $I_C = 4.0 \text{ Adc}, I_B = 0.4 \text{ Adc}$	$V_{BE(sat)}$		2.0	Vdc
Base-Emitter Voltage $I_C = 4.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$	$V_{BE(on)}$		1.8	Vdc

DYNAMIC CHARACTERISTICS

Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 500 \text{ mAdc}, V_{CE} = 10 \text{ Vdc}, f = 10 \text{ MHz}$	$ h_{fe} $	4.0	20	
Output Capacitance $V_{CB} = 10 \text{ Vdc}, I_E = 0, 0.1 \text{ MHz} \leq f \leq 1.0 \text{ MHz}$	C_{obo}		175	pF

SWITCHING CHARACTERISTICS

Turn-On Time $V_{CC} = 30 \text{ Vdc}; I_C = 4.0 \text{ Adc}; I_B = 0.4 \text{ Adc}$	t_{on}		0.44	μs
Turn-Off Time $V_{CC} = 30 \text{ Vdc}; I_C = 4.0 \text{ Adc}; I_B = -I_B = 0.4 \text{ Adc}$	t_{off}		1.2	μs

SAFE OPERATING AREA

DC Tests $T_C = +25^\circ\text{C}, 1 \text{ Cycle}, t = 1.0 \text{ s}$ Test 1 $V_{CE} = 5.0 \text{ Vdc}, I_C = 7.0 \text{ Adc}$ Test 2 $V_{CE} = 28 \text{ Vdc}, I_C = 1.25 \text{ Adc}$ Test 3 $V_{CE} = 40 \text{ Vdc}, I_C = 500 \text{ mAdc}$ Test 4 $V_{CE} = 75 \text{ Vdc}, I_C = 100 \text{ mAdc}$
--

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



LittleDiode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.