

## PNP DARLINGTON POWER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/505

### Devices

2N6286

2N6287

### Qualified Level

JANTX  
JANTXV

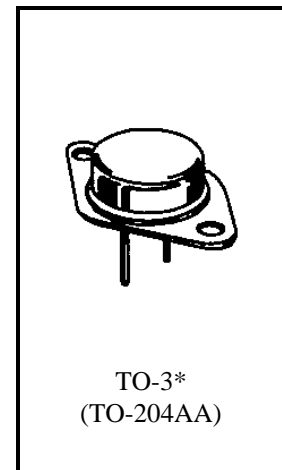
### MAXIMUM RATINGS

Ratings	Symbol	2N6286	2N6287	Unit
Collector-Emitter Voltage	$V_{CEO}$	-80	-100	Vdc
Collector-Base Voltage	$V_{CBO}$	-80	-100	Vdc
Emitter-Base Voltage	$V_{EBO}$	-7.0		Vdc
Base Current	$I_B$	-0.5		Adc
Collector Current	$I_C$	-20		Adc
Total Power Dissipation <sup>(1)</sup>	@ $T_C = +25^{\circ}C$	175		W
	@ $T_C = +100^{\circ}C$	87.5		W
Operating & Storage Junction Temperature Range	$T_{op}, T_{stg}$	-65 to +175		$^{\circ}C$

### THERMAL CHARACTERISTICS

Characteristics	Symbol	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	0.857	$^{\circ}C/W$

1) Derate linearly @ 1.17 W/ $^{\circ}C$  above  $T_C > +25^{\circ}C$



\*See appendix A for package outline

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

Characteristics	Symbol	Min.	Max.	Unit
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### OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage $I_C = -100$ mAdc	2N6286 2N6287	$V_{(BR)CEO}$	-80 -100	Vdc
Collector-Emitter Cutoff Current $V_{CE} = -40$ Vdc $V_{CE} = -50$ Vdc	2N6286 2N6287	$I_{CEO}$	-1.0 -1.0	mAdc
Collector-Emitter Cutoff Current $V_{CE} = -80$ Vdc, $V_{BE} = 1.5$ Vdc $V_{CE} = -100$ Vdc, $V_{BE} = 1.5$ Vdc	2N6286 2N6287	$I_{CEX}$	-0.5 -0.5	mAdc
Emitter-Base Cutoff Current $V_{EB} = -7.0$ Vdc		$I_{EBO}$	-2.5	Adc

**ELECTRICAL CHARACTERISTICS (con't)**

Characteristics	Symbol	Min.	Max.	Unit
<b>ON CHARACTERISTICS <sup>(2)</sup></b>				
Forward-Current Transfer Ratio I <sub>C</sub> = -1.0 Adc, V <sub>CE</sub> = -3.0 Vdc I <sub>C</sub> = -10 Adc, V <sub>CE</sub> = -3.0 Vdc I <sub>C</sub> = -20 Adc, V <sub>CE</sub> = -3.0 Vdc	h <sub>FE</sub>	1,500 1,250 300	18,000	
Collector-Emitter Saturation Voltage I <sub>C</sub> = -20 Adc, I <sub>B</sub> = -200 mAcd I <sub>C</sub> = -10 Adc, I <sub>B</sub> = -40 mAcd	V <sub>CE(sat)</sub>		-3.0 -2.0	Vdc
Base-Emitter Saturation Voltage I <sub>C</sub> = -20 Adc, I <sub>B</sub> = -200 mAcd	V <sub>BE(sat)</sub>		-4.0	Vdc
Base-Emitter Voltage I <sub>C</sub> = -10 Adc, V <sub>CE</sub> = -3.0 Vdc	V <sub>BE(on)</sub>		-2.8	Vdc

**DYNAMIC CHARACTERISTICS**

Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio I <sub>C</sub> = -10 Adc, V <sub>CE</sub> = -3.0 Vdc f = 1.0 MHz	h <sub>fe</sub>	8.0	80	
Small-Signal Short-Circuit Forward Current Transfer Ratio I <sub>C</sub> = -10 Adc, V <sub>CE</sub> = -3.0 Vdc	h <sub>fe</sub>	300		
Output Capacitance V <sub>CB</sub> = -10 Vdc, I <sub>E</sub> = 0, 100 kHz ≤ f ≤ 1.0 MHz	C <sub>obo</sub>		400	pF

**SWITCHING CHARACTERISTICS**

Turn-On Time V <sub>CC</sub> = -30 Vdc; I <sub>C</sub> = -10 Adc; I <sub>B</sub> = -40 mAcd	t <sub>on</sub>		2.0	μs
Turn-Off Time V <sub>CC</sub> = -30 Vdc; I <sub>C</sub> = -10 Adc; I <sub>B1</sub> = I <sub>B2</sub> = -40 mAcd	t <sub>off</sub>		10	μs

**SAFE OPERATING AREA**

<b>DC Tests</b> T <sub>C</sub> = +25°C, 1 Cycle, t = 1.0 s	
<b>Test 1</b> V <sub>CE</sub> = -8.75 Vdc, I <sub>C</sub> = -20 Adc	All Types
<b>Test 2</b> V <sub>CE</sub> = -30 Vdc, I <sub>C</sub> = -5.8 Adc	All Types
<b>Test 3</b> V <sub>CE</sub> = -80 Vdc, I <sub>C</sub> = -100 mAcd	2N6286
V <sub>CE</sub> = -100 Vdc, I <sub>C</sub> = -100 mAcd	2N6287

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