

PNP DARLINGTON POWER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/505

Devices

2N6286

2N6287

Qualified Level

JANTX
JANTXV

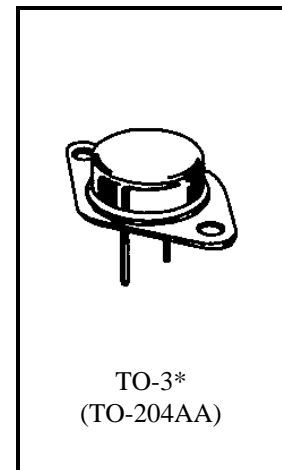
MAXIMUM RATINGS

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 ⁽¹⁾	P_T	@ $T_C = +25^{\circ}C$	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
ON CHARACTERISTICS ⁽²⁾				
Forward-Current Transfer Ratio I _C = -1.0 Adc, V _{CE} = -3.0 Vdc I _C = -10 Adc, V _{CE} = -3.0 Vdc I _C = -20 Adc, V _{CE} = -3.0 Vdc	h _{FE}	1,500 1,250 300	18,000	
Collector-Emitter Saturation Voltage I _C = -20 Adc, I _B = -200 mAcd I _C = -10 Adc, I _B = -40 mAcd	V _{CE(sat)}		-3.0 -2.0	Vdc
Base-Emitter Saturation Voltage I _C = -20 Adc, I _B = -200 mAcd	V _{BE(sat)}		-4.0	Vdc
Base-Emitter Voltage I _C = -10 Adc, V _{CE} = -3.0 Vdc	V _{BE(on)}		-2.8	Vdc

DYNAMIC CHARACTERISTICS

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

SWITCHING CHARACTERISTICS

Turn-On Time V _{CC} = -30 Vdc; I _C = -10 Adc; I _B = -40 mAcd	t _{on}		2.0	μs
Turn-Off Time V _{CC} = -30 Vdc; I _C = -10 Adc; I _{B1} = I _{B2} = -40 mAcd	t _{off}		10	μs

SAFE OPERATING AREA

DC Tests T _C = +25°C, 1 Cycle, t = 1.0 s	
Test 1 V _{CE} = -8.75 Vdc, I _C = -20 Adc	All Types
Test 2 V _{CE} = -30 Vdc, I _C = -5.8 Adc	All Types
Test 3 V _{CE} = -80 Vdc, I _C = -100 mAcd	2N6286
V _{CE} = -100 Vdc, I _C = -100 mAcd	2N6287

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