NPN Darlington Power Silicon Transistor

NEW

2N6283 & 2N6284

AEROFLEX
A passion for performance.

Features

- Available in JAN, JANTX, and JANTXV per MIL-PRF-19500/504
- TO-3 (TO-204AA) Package

Maximum Ratings

Ratings	Symbol	2N6283	2N6284	Units
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 @ T_A = +25 °C (1) @ T_A = +100 °C	P_T	175 87.5		W W
Operating & Storage Temperature Range	T_{op}, T_{stg}	-65 to +200°C		

Thermal Characteristics

Characteristics	Symbol	Maximum	Units
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	0.857	°C/W

1) Derate linearly @ 1.0 mW/°C for T_A > +25°C

Electrical Characteristics

OFF Characteristics		Symbol	Mimimum	Maximum	Units
Collector - Emitter Breakdown Voltage I_C = 100 mAdc	2N6283 2N6284	$V_{(BR)CEO}$	80 100	- - -	Vdc
Collector - Emitter Cutoff Current V_{CE} = 40 Vdc V_{CE} = 50 Vdc	2N6283 2N6284	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	2N6283 2N6284	I_{CEX}	- - -	0.01 0.01	mAdc
Emitter - Base Cutoff Current V_{EB} = 7.0 Vdc		I_{EBO}	- - -	2.5	mAdc

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METELICS

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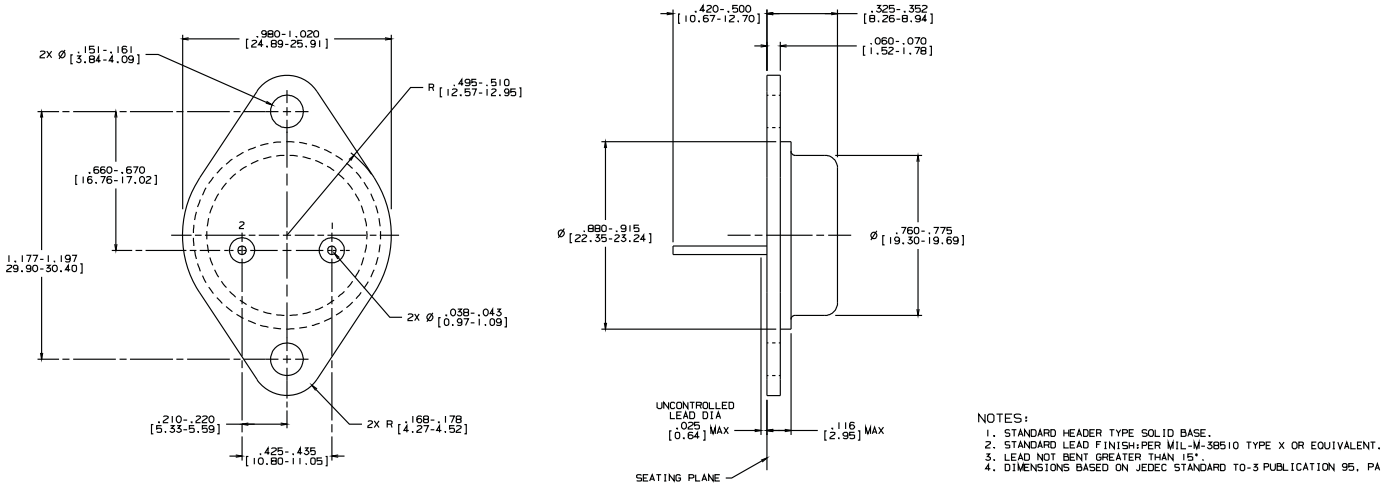
Electrical Characteristics -con't

ON Characteristics (2)	Symbol	Minimum	Maximum	Unit
Forward Current Transfer Ratio I_C = 1.0 Adc, V_{CE} = 3.0 Vdc I_C = 10.0 Adc, V_{CE} = 3.0 Vdc I_C = 20.0 Adc, V_{CE} = 3.0 Vdc	H_{FE}	 1,500 1,250 500	 18,000	
Collector - Emitter Saturation Voltage I_C = 20.0 Adc, I_B = 200 mAdc I_C = 10.0 Adc, I_B = 40 mAdc	$V_{CE(sat)}$	- - -	3.0 2.0	Vdc
Base - Emitter Saturation Voltage I_C = 20.0 Adc, I_B = 200 mAdc	$V_{BE(sat)}$	- - -	4.0	Vdc
Base - Emitter Voltage I_C = 10.0 Adc, I_B = 3.0 Vdc	V_{BE}	- - -	2.8	Vdc
DYNAMIC Characteristic				
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio I_C = 10.0 Adc, V_{CE} = 3.0 Vdc, f = 1.0 kHz	$\lvert h_{fe} \rvert$	8.0	80	
Small-Signal Short-Circuit Forward Current Transfer Ratio I_C = 10.0 Adc, V_{CE} = 3.0 Vdc, f = 1.0 kHz	h_{fe}	700	- - -	
Output Capacitance V_{CB} = 10 Vdc, I_E = 0, 100 kHz $\leq$ f $\leq$ 1.0 MHz	C_{obo}	- - -	350	pF
Switching Characteristic				
Turn-On Time V_{CC} = 30 Vdc; I_C = 10.0 Adc; I_B = 40 mAdc	t_{on}	- - -	2.0	µs
Turn-Off Time V_{CC} = 30 Vdc; I_C = 10.0 Adc; I_{B1} = I_{B2} = 40 mAdc	t_{off}	- - -	10.0	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			
Test 2:	V_{CE} = 30 Vdc, I_C = 5.8 Adc			
Test 3:	V_{CE} = 80 Vdc, I_C = 100 mAdc			
	V_{CE} = 100 Vdc, I_C = 100 mAdc			

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

Outline Drawing



NOTES:
1. STANDARD HEADER TYPE SOLID BASE.
2. STANDARD LEAD FINISH:PER MIL-M-38510 TYPE X OR EQUIVALENT.
3. LEAD NOT BENT GREATER THAN 15°.
4. DIMENSIONS BASED ON JEDEC STANDARD TO-3 PUBLICATION 95, PA

Aeroflex / Metelics, Inc.

975 Stewart Drive,
Sunnyvale, CA 94085
Tel: (408) 737-8181
Fax: (408) 733-7645

Sales: 888-641-SEMI (7364)

Hi-Rel Components
9 Hampshire Street,
Lawrence, MA 01840
Tel: (603) 641-3800
Fax: (978) 683-3264

www.aeroflex.com/metelicsHRC

54 Grenier Field Road,
Londonderry, NH 03053
Tel: (603) 641-3800
Fax: (603)-641-3500

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www.aeroflex.com/metelics ***metelics-sales@aeroflex.com***

Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven and customer-focused.

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