



**THE DATASHEET OF  
JANTX2N3716**



# NPN Power Silicon Transistor

## 2N3715 & 2N3716



### Features

- Available in JAN, JANTX, and JANTXV per MIL-PRF-19500/408
- TO-3 (TO-204AA) Package



### Maximum Ratings

Ratings	Symbol	2N3715	2N3716	Units
Collector - Emitter Voltage	$V_{CEO}$	60	80	Vdc
Collector - Base Voltage	$V_{CBO}$	80	100	Vdc
Emitter - Base Voltage	$V_{EBO}$	7.0		Vdc
Base Current	$I_B$	4.0		Adc
Collector Current	$I_C$	10		Adc
Total Power Dissipation @ $T_A = 25\text{ }^\circ\text{C}$ <sup>(1)</sup> @ $T_C = 25\text{ }^\circ\text{C}$	$P_T$	5.0		W
		117.0		W
Operating & Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +200		$^\circ\text{C}$

1) Derate linearly @ 28.57 mW /  $^\circ\text{C}$  for  $T_A > 25\text{ }^\circ\text{C}$

### Thermal Characteristics

Characteristics	Symbol	Maximum	Units
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	1.5	$^\circ\text{C/W}$

### Electrical Characteristics

OFF Characteristics		Symbol	Minimum	Maximum	Units
Collector - Emitter Breakdown Voltage $I_C = 10\text{ mAdc}$	2N3715	$V_{(BR)CEO}$	60	---	Vdc
	2N3716		80		
Collector - Base Cutoff Current $V_{CB} = 80\text{ Vdc}$ $V_{CB} = 100\text{ Vdc}$	2N3715	$I_{CBO}$	---	10	$\mu\text{Adc}$
	2N3716		10		
Emitter - Base Cutoff Current $V_{EB} = 7.0\text{ Vdc}$		$I_{EBO}$	---	1.0	mAdc
Collector - Emitter Cutoff Current $V_{BE} = -1.5\text{ Vdc}, V_{CE} = 60\text{ Vdc}$ $V_{BE} = -1.5\text{ Vdc}, V_{CE} = 80\text{ Vdc}$	2N3715	$I_{CEX}$	---	10	$\mu\text{Adc}$
	2N3716		10		
Collector - Emitter Cutoff Current $V_{CB} = 60\text{ Vdc}$ $V_{CB} = 80\text{ Vdc}$	2N3715	$I_{CES}$	---	10	$\mu\text{Adc}$
	2N3716		10		

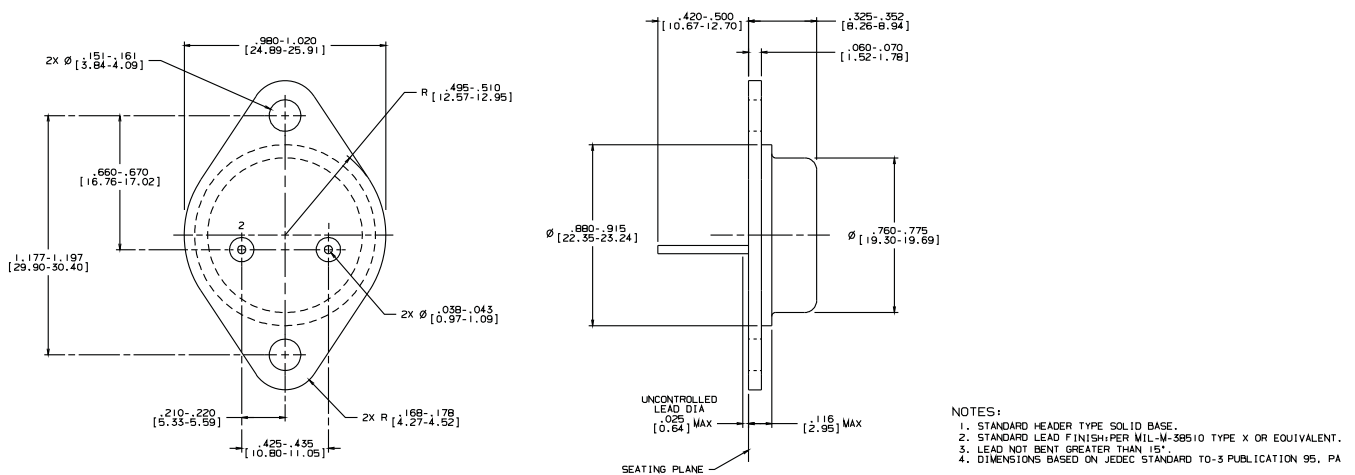


### Electrical Characteristics -con't

ON Characteristics <sup>(3)</sup>	Symbol	Mimumum	Maximum	Units
Forward Current Transfer Ratio $I_C = 1.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$ $I_C = 3.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$ $I_C = 5.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$ $I_C = 10.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$	$H_{FE}$	50 30 10 5	150 120 --- ---	
Collector - Emitter Saturation Voltage $I_C = 5.0 \text{ Adc}, I_B = 0.5 \text{ Adc}$ $I_C = 10.0 \text{ Adc}, I_B = 2.0 \text{ Adc}$	$V_{CE(sat)}$	--- ---	1.0 2.5	Vdc
Base - Emitter Saturation Voltage $I_C = 5.0 \text{ Adc}, I_B = 0.5 \text{ Adc}$ $I_C = 10.0 \text{ Adc}, I_B = 2.0 \text{ Adc}$	$V_{BE(sat)}$	--- ---	1.5 3.0	Vdc
<b>DYNAMIC Characteristics</b>				
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 0.5 \text{ Adc}, V_{CE} = 10.0 \text{ Vdc}, f = 1.0 \text{ kHz}$	$ h_{fe} $	4.0	20.0	
Forward Current Transfer Ratio $I_C = 0.5 \text{ Adc}, V_{CE} = 10.0 \text{ Vdc}, f = 1.0 \text{ MHz}$	$h_{fe}$	30	300	
Output Capacitance $V_{CB} = 10 \text{ Vdc}, I_E = 0, f = 1.0 \text{ MHz}$	$C_{obo}$	---	500	pF
<b>SAFE OPERATING AREA</b>				
<b>DC Tests:</b> $T_C = +25 \text{ }^\circ\text{C}, 1 \text{ Cycle}, t = 1.0 \text{ s}$ <b>Test 1:</b> $V_{CE} = 15.0 \text{ Vdc}, I_C = 10 \text{ Adc}$ <b>Test 2:</b> $V_{CE} = 40.0 \text{ Vdc}, I_C = 3.75 \text{ Adc}$ <b>Test 3:</b> $V_{CE} = 55.0 \text{ Vdc}, I_C = 0.9 \text{ Adc}$ 2N3715 $V_{CE} = 65.0 \text{ Vdc}, I_C = 0.9 \text{ Adc}$ 2N3716				

(3) Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle ~ 2.0 %.

### Outline Drawing



**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/metelics-hirelcomponents](http://www.aeroflex.com/metelics-hirelcomponents)

[www.aeroflex.com/metelics](http://www.aeroflex.com/metelics)     [metelics-sales@eroflex.com](mailto:metelics-sales@eroflex.com)

Aeroflex / Metelics, Inc. reserves the right to make changes to any products and services herein at any time without notice. Consult Aeroflex or an authorized sales representative to verify that the information in this data sheet is current before using this product. Aeroflex does not assume any responsibility or liability arising out of the application or use of any product or service described herein, except as expressly agreed to in writing by Aeroflex; nor does the purchase, lease, or use of a product or service from Aeroflex convey a license under any patent rights, copyrights, trademark rights, or any other of the intellectual rights of Aeroflex or of third parties.

Copyright 2012 Aeroflex / Metelics. All rights reserved.



**ISO 9001: 2008 certified companies**



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

## Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

-  [View JANTX2N3716 on WIN SOURCE](#)
-  [Aeroflex Metelics, Division of MACOM Information](#)

## Optimize Your Supply Chain with WIN SOURCE Solutions

-  Global Sourcing Solution
-  Obsolete Management
-  Cost Control Management
-  Shortage Management
-  Alternative Solution
-  Excess Inventory Management