2N3715 & 2N3716

NPN High Power Silicon Transistor

Features

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

Electrical Characteristics

Parameter	Test Conditions	Symbol	Units	Min.	Max.
Off Characteristics					
Collector - Emitter Breakdown Voltage	I _C = 10 mAdc, 2N3715 I _C = 10 mAdc, 2N3716	V _{(BR)CEO}	Vdc	60 80	_
Collector - Base Cutoff Current	V _{CE} = 60 Vdc, 2N3715 V _{CE} = 80 Vdc, 2N3716	I _{CEO}	µAdc	_	10 10
Emitter - Base Cutoff Current	V _{EB} = 7 Vdc	I _{EBO}	mAdc	—	1
Collector - Emitter Cutoff Current	V_{CE} = 60 Vdc, V_{BE} = 1.5 Vdc, 2N3715 V_{CE} = 80 Vdc, V_{BE} = 1.5 Vdc, 2N3716	I _{CEX}	µAdc	_	10 10
Collector - Emitter Cutoff Current	V _{CE} = 50 Vdc, 2N3715 V _{CE} = 70 Vdc, 2N3716	I _{CEO}	µAdc	_	10 10
On Characteristics ¹					
Forward Current Transfer Ratio	$\begin{split} I_{C} &= 1 \text{ Adc}, $	H _{FE}	-	50 30 10 5	150 120 —
Collector - Emitter Saturation Voltage	$I_{C} = 5 \text{ Adc}, I_{B} = 0.5 \text{ Adc}$ $I_{C} = 10 \text{ Adc}, I_{B} = 2.0 \text{ Adc}$	V _{CE(SAT)}	Vdc	—	1.0 2.5
Emitter - Base Saturation Voltage	I_{C} = 5 Adc, I_{B} = 0.5 Vdc I_{C} = 10 Adc, I_{B} = 2.0 Vdc	$V_{\text{BE(SAT)}}$	Vdc	_	1.5 3.0
Dynamic Characteristics					
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio	I_{C} = 4 Adc, V_{CE} = 4 Vdc, f = 100 kHz	H _{FE}		4	20
Small-Signal Short-Circuit Forward Current Transfer Ratio	$I_{\rm C}$ = 0.5 Adc, $V_{\rm CE}$ = 10 Vdc, f = 1 kHz	H_{FE}		30	300
Output Capacitance	V_{CB} = 10 Vdc, I _E = 0, 100 kHz ≤ f ≤ 1 MHz	C _{OBO}	pF	_	500
Safe Operating Area		1	<u> </u>		1
DC Tests: $T_c = +25 \ ^\circ C$, I Cycle, Test 1: $V_{CE} = 15 \ Vdc$, $I_c = 10$ Test 2: $V_{CE} = 40 \ Vdc$, $I_c = 3.7$ Test 3: $V_{CE} = 55 \ Vdc$, $I_c = 0.5$ $V_{CE} = 65 \ Vdc$, $I_c = 0.5$	Adc 75 Adc 9 Adc, 2N3715				

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Absolute Maximum Ratings

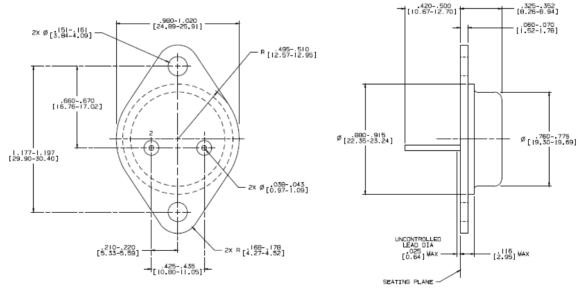
Ratings	Symbol	Value
Collector - Emitter Voltage 2N3715 2N3716 Collector - Base Voltage	V _{CEO}	60 Vdc 80 Vdc
2N3715 2N3716	V _{CBO}	80 Vdc 100 Vdc
Emitter - Base Voltage	V _{EBO}	7 Vdc
Base Current	I _B	4 Vdc
Collector Current	I _C	10 Adc
Total Power Dissipation @ $T_A = 25^{\circ}C^2$ @ $T_A = 25^{\circ}C$	P _T	5 W 117 W
Operating & Storage Temperature Range	T_{OP}, T_{STG}	-65°C to +200°C

2. Derate linearly @ 28.57 mW / °C for T_A = 25 °C

Thermal Characteristics

Characteristics	Symbol	Max. Value
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.5°C/W

Outline Drawing



NOTES.

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IL STANDARD HEADER TYPE SOLID BASE. 2. STANDARD HEADER TYPE SOLID BASE. 3. LEAD NOT BENT GREATER THAN 15°. 4. DIMENSIONS BASED ON JEDEC STANDARD TO-3 PUBLICATION 95, PA

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