

# 2N5671 & 2N5672



## NPN High Power Silicon Transistor

Rev. V1

### Features

- Available in JAN, JANTX, JANTXV and JANS per MIL-PRF-19500/488
- TO-3 (TO-204AA) Package



### Electrical Characteristics

Parameter	Test Conditions	Symbol	Units	Min.	Max.
<b>Off Characteristics</b>					
Collector - Emitter Breakdown Voltage	$I_C = 200 \text{ mAdc}$ , 2N5671 $I_C = 200 \text{ mAdc}$ , 2N5672	$V_{(BR)CEO}$	Vdc	90 120	—
Collector - Base Cutoff Current	$V_{CE} = 110 \text{ Vdc}$ , 2N5671 $V_{CE} = 135 \text{ Vdc}$ , 2N5672	$I_{CBO}$	mAdc	—	25 25
Emitter - Base Cutoff Current	$V_{EB} = 7 \text{ Vdc}$	$I_{EBO}$	mAdc	—	10
Collector - Emitter Cutoff Current	$V_{CE} = 110 \text{ Vdc}$ , $V_{BE} = 1.5 \text{ Vdc}$ , 2N5671 $V_{CE} = 135 \text{ Vdc}$ , $V_{BE} = 1.5 \text{ Vdc}$ , 2N5672	$I_{CEX}$	mAdc	—	250 250
Collector - Emitter Cutoff Current	$V_{CE} = 80 \text{ Vdc}$	$I_{CEO}$	mAdc	—	10
<b>On Characteristics<sup>1</sup></b>					
Forward Current Transfer Ratio	$I_C = 15 \text{ Adc}$ , $V_{CE} = 2.0 \text{ Vdc}$ $I_C = 20 \text{ Adc}$ , $V_{CE} = 5.0 \text{ Vdc}$	$h_{FE}$	-	20 20	100 —
Collector - Emitter Saturation Voltage	$I_C = 15 \text{ Adc}$ , $I_B = 1.2 \text{ Adc}$ $I_C = 30 \text{ Adc}$ , $I_B = 6.0 \text{ Adc}$	$V_{CE(SAT)}$	Vdc	—	0.75 5.0
Emitter - Base Saturation Voltage	$I_C = 15 \text{ Adc}$ , $I_B = 1.2 \text{ Vdc}$	$V_{BE(SAT)}$	Vdc	—	1.5
<b>Dynamic Characteristics</b>					
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio	$I_C = 2.0 \text{ Adc}$ , $V_{CE} = 10 \text{ Vdc}$ , $f = 5.0 \text{ MHz}$	$ h_{FE} $		10	40
Small-Signal Short-Circuit Forward Current Transfer Ratio	$I_C = 0.5 \text{ Adc}$ , $V_{CE} = 10 \text{ Vdc}$ , $f = 1 \text{ kHz}$	$h_{FE}$		30	300
Output Capacitance	$V_{CB} = 10 \text{ Vdc}$ , $I_E = 0$ , $100 \text{ kHz} \leq f \leq 1 \text{ MHz}$	$C_{OBO}$	pF	—	900
<b>Safe Operating Area</b>					
DC Tests:	$T_C = +25 \text{ }^\circ\text{C}$ , 1 Cycle, $t = 1.0 \text{ s}$				
Test 1:	$V_{CE} = 24 \text{ Vdc}$ , $I_C = 5.8 \text{ Adc}$				
Test 2:	$V_{CE} = 45 \text{ Vdc}$ , $I_C = 0.9 \text{ Adc}$				
Test 3:	$V_{CE} = 4.67 \text{ Vdc}$ , $I_C = 30 \text{ Adc}$ ,				
Test 4:	$V_{CE} = 90 \text{ Vdc}$ , $I_C = 0.19 \text{ Adc}$ , 2N5671				
Test 5:	$V_{CE} = 120 \text{ Vdc}$ , $I_C = 0.11 \text{ Adc}$ , 2N5672				

1. Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

VPT Components and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice. Visit [www.vptcomponents.com](http://www.vptcomponents.com) for additional data sheets and product information.

# 2N5671 & 2N5672



## NPN High Power Silicon Transistor

Rev. V1

### Absolute Maximum Ratings

Ratings	Symbol	Value
Collector - Emitter Voltage 2N5671 2N5672	$V_{CEO}$	90 Vdc 120 Vdc
Collector - Base Voltage 2N5671 2N5672	$V_{CBO}$	120 Vdc 150 Vdc
Emitter - Base Voltage	$V_{EBO}$	7 Vdc
Base Current	$I_B$	10 Vdc
Collector Current	$I_C$	30 Adc
Total Power Dissipation @ $T_A = 25^\circ\text{C}^1$ @ $T_C = 25^\circ\text{C}^2$	$P_T$	6.0 W 140 W
Operating & Storage Temperature Range	$T_{OP}, T_{STG}$	-65°C to +200°C

- Derate linearly @ 34.2 mW / °C for  $T_A = 25^\circ\text{C}$
- Derate linearly @ 800 mW / °C for  $T_C = 25^\circ\text{C}$

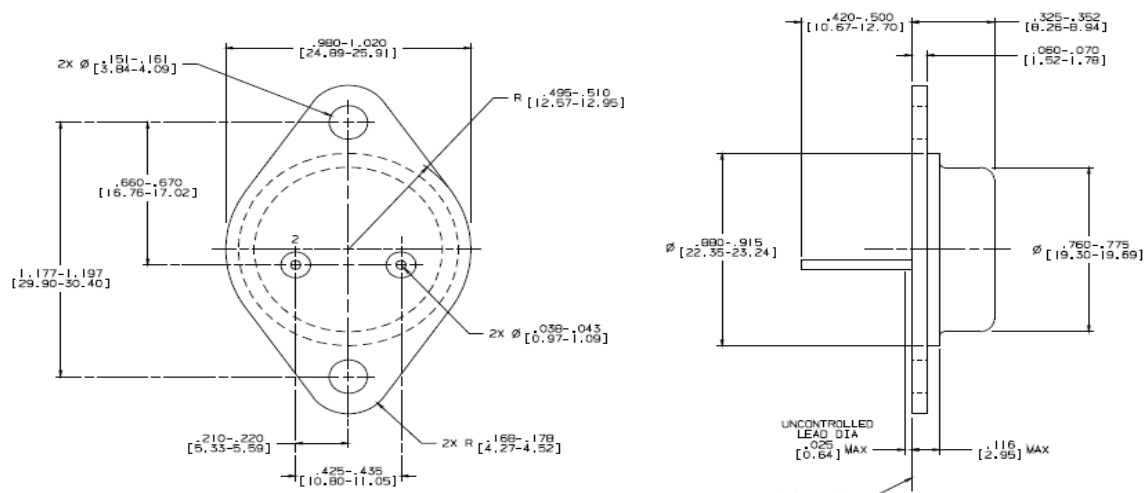
### Thermal Characteristics

Characteristics	Symbol	Max. Value
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.25°C/W

Switching Characteristics	Symbol	Max. Value
$V_{CC} = 30 \pm 2.0\text{Vdc}; I_C = 15\text{ Adc}; I_{B1} = 1.2\text{ Adc}$	$t_{on}$	0.5 $\mu\text{s}$
$V_{CC} = 30 \pm 2.0\text{Vdc}; I_C = 15\text{ Adc}; I_{B1} = I_{B2} = 1.2\text{ Adc}$	$t_{off}$	1.5 $\mu\text{s}$

### Outline Drawing



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

2

VPT Components and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice. Visit [www.vptcomponents.com](http://www.vptcomponents.com) for additional data sheets and product information.

# 2N5671 & 2N5672



## NPN High Power Silicon Transistor

Rev. V1

VPT Components All rights reserved.

Information in this document is provided in connection with VPT Components' products. These materials are provided by VPT Components as a service to its customers and may be used for informational purposes only. Except as provided in VPT Components' Terms and Conditions of Sale for such products or in any separate agreement related to this document, VPT Components assumes no liability whatsoever. VPT Components assumes no responsibility for errors or omissions in these materials. VPT Components may make changes to specifications and product descriptions at any time, without notice. VPT Components makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppels or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF VPT COMPONENTS' PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. VPT COMPONENTS FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. VPT COMPONENTS SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

VPT Components' products are not intended for use in medical, lifesaving or life sustaining applications. VPT Components' customers using or selling VPT Components products for use in such applications do so at their own risk and agree to fully indemnify VPT Components for any damages resulting from such improper use or sale.