

### Features

- Available in JAN, JANTX, JANTXV per MIL-PRF-19500/537
- TO-3 (TO-204AA) Package



### Electrical Characteristics

Parameter	Test Conditions	Symbol	Units	Min.	Max.
<b>Off Characteristics</b>					
Collector - Emitter Breakdown Voltage	$I_C = 200 \text{ mAdc}$ 2N6674 2N6675	$V_{(BR)CEO}$	Vdc	300 400	—
Collector - Emitter Cutoff Current	$V_{CE} = 450 \text{ Vdc}, V_{BE} = -1.5 \text{ Vdc}, 2N6674$ $V_{CE} = 650 \text{ Vdc}, V_{BE} = -1.5 \text{ Vdc}, 2N6675$	$I_{CEX}$	Adc	—	0.1
Emitter - Base Cutoff Current	$V_{EB} = 7 \text{ Vdc}$	$I_{EBO}$	mAdc	—	2.0
Collector - Base Cutoff Current	$V_{CB} = 450 \text{ Vdc}, 2N6674$	$I_{CBO}$	mAdc	—	1.0
<b>On Characteristics<sup>1</sup></b>					
Forward Current Transfer Ratio	$I_C = 1 \text{ Adc}, V_{CE} = 3 \text{ Vdc}$ $I_C = 10 \text{ Adc}, V_{CE} = 2 \text{ Vdc}$	$H_{FE}$	-	15 8	40 20
Collector - Emitter Sustaining Voltage	$I_C = 10 \text{ Adc}, I_B = 2 \text{ Adc}$ $I_C = 15 \text{ Adc}, I_B = 5 \text{ Adc}$	$V_{CE(SAT)}$	Vdc	—	1.0 5.0
Base - Emitter Saturation Voltage	$I_C = 1 \text{ Adc}, I_B = 2 \text{ Adc}$	$V_{BE(SAT)}$	Vdc	—	1.5
<b>Dynamic Characteristics</b>					
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} $	-	3	10
Output Capacitance	$V_{CB} = 10 \text{ Vdc}, I_E = 0, 100 \text{ kHz} \leq f \leq 1 \text{ MHz}$	$C_{OBO}$	pF	150	500

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

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### Electrical Characteristics

Parameter	Test Conditions	Symbol	Units	Min.	Max.
<b>Switching Characteristics</b>					
Delay Time	See figure 3 of MIL-PRF-19500/537	$T_D$	$\mu\text{s}$	—	0.1
Rise Time		$T_R$			0.6
Storage Time		$T_S$			2.5
Fall Time		$T_F$			0.5
Cross-Over Time		$T_C$			0.5
<b>Safe Operating Area</b>					
DC Tests:	$T_C = +25^\circ\text{C}$ , 1 Cycle, $t = 1.0$ s (see figure 4 of MIL-PRF-19500/537)				
Test 1:	$V_{CE} = 11.7$ Vdc, $I_C = 15$ Adc				
Test 2:	$V_{CE} = 30$ Vdc, $I_C = 5.9$ Adc				
Test 3:	$V_{CE} = 100$ Vdc, $I_C = 0.25$ Adc				
Test 4:	$V_{CE} = 25$ Vdc, $I_C = 7$ Adc				
Test 5:	$V_{CE} = 300$ Vdc, $I_C = 20$ mAdc, (for 2N6674)				
	$V_{CE} = 400$ Vdc, $I_C = 10$ mAdc, (for 2N6675)				
Clamped Switch:					
$T_A = +25^\circ\text{C}$ , $V_{CC} = 15$ Vdc, load condition B, $R_{BB1} = 5 \Omega$ , $R_{BB2} = 1.5 \Omega$ , $R_{BB2} = 5$ Vdc, $L = 50 \mu\text{H}$ , R of inductor = $0.05 \Omega$ , $R_L = R$ of inductor, (see figure 6 of MIL-PRF-19500/537)					
Clamp Voltage = 350; $I_C = 10$ Adc, (2N6674)					
Clamp Voltage = 450; $I_C = 10$ Adc, (2N6675)					

### Absolute Maximum Ratings

Ratings	Symbol	2N6674	2N6675	Units
Collector - Emitter Voltage	$V_{CEO}$	300	400	Vdc
Collector - Base Voltage	$V_{CBO}/V_{CBX}$	450	650	Vdc
Emitter - Base Voltage	$V_{EBO}$	7		Vdc
Collector Current	$I_C$	15		Adc
Base Current	$I_B$	5		Adc
Total Power Dissipation @ $T_A = +25^\circ\text{C}^2$ @ $T_A = +25^\circ\text{C}$	$P_T$	6 <sup>3</sup> 175	3 <sup>4</sup> 175	W
Operating & Storage Temperature Range	$T_{OP}$ , $T_{STG}$	-65 to +200		$^\circ\text{C}$

- Derate linearly @ 1.0 mW /  $^\circ\text{C}$  for  $T_A > 25^\circ\text{C}$ .
- Derate linearly @ 34.2 mW /  $^\circ\text{C}$  for  $T_A > 25^\circ\text{C}$ .
- Derate linearly @ 17.1 mW /  $^\circ\text{C}$  for  $T_A > 25^\circ\text{C}$ .

### Thermal Characteristics

Characteristics	Symbol	Max. Value
Thermal Resistance, Junction to Case	$R_{\theta JC}$	$1^\circ\text{C/W}$

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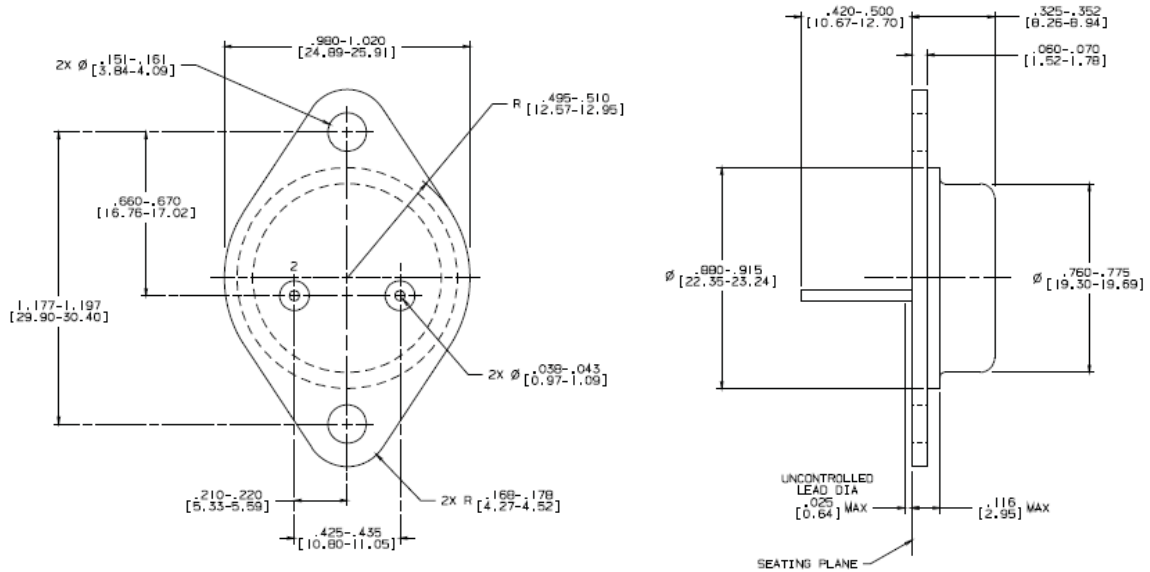
# 2N6674 & 2N6675



## NPN High Power Silicon Transistor

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### Outline Drawing



#### NOTES:

1. STANDARD HEADER TYPE SOLID BASE.
2. STANDARD LEAD FINISH PER MIL-M-39510 TYPE X OR EQUIVALENT.
3. LEAD NOT BENT GREATER THAN 15°.
4. DIMENSIONS BASED ON JEDEC STANDARD TO-3 PUBLICATION 95, PA

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