

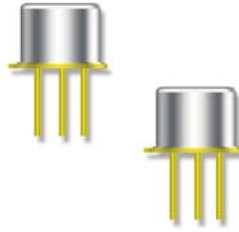
# PNP Power Silicon Transistor

## 2N5679 & 2N5680



### Features

- Available in JAN, JANTX and JANTXV per MIL-PRF-19500/582
- TO-39 (TO-205AD) Package



### Maximum Ratings ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Ratings	Symbol	2N5679	2N5680	Units
Collector - Emitter Voltage	$V_{CEO}$	100	120	Vdc
Collector - Base Voltage	$V_{CBO}$	100	120	Vdc
Emitter - Base Voltage	$V_{EBO}$	4.0	4.0	Vdc
Collector Current	$I_C$	1.0	1.0	Adc
Base Current	$I_B$	0.5	0.5	Adc
Total Power Dissipation @ $T_A = +25^\circ\text{C}$ @ $T_C = +100^\circ\text{C}$	$P_T$	1.0 10.0	1.0 10.0	W W
Operating & Storage Temperature Range	$T_{op}, T_{stg}$	-65 to +200		$^\circ\text{C}$

### Thermal Characteristics

Characteristics	Symbol	Maximum	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	7.0	$^\circ\text{C}/\text{W}$

- 1) Derate linearly  $5.7 \text{ mW}/^\circ\text{C}$  for  $T_A > +25^\circ\text{C}$
- 2) Derate linearly  $57 \text{ mW}/^\circ\text{C}$  for  $T_C > +25^\circ\text{C}$

### Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

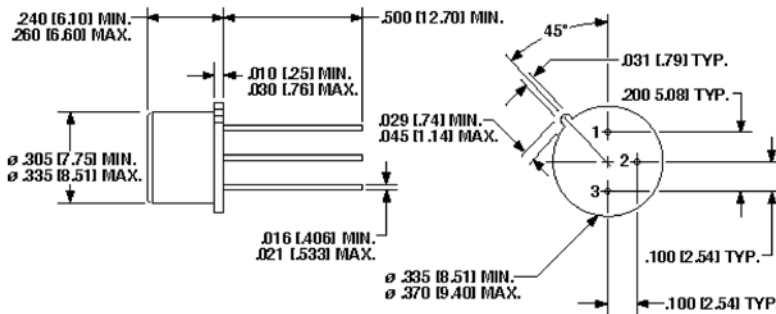
OFF Characteristics	Symbol	Minimum	Maximum	Units
Collector - Emitter Breakdown Voltage $I_C = 100 \text{ mAdc}$ 2N5679 2N5680	$V_{(BR)CEO}$	60 80	---	Vdc
Collector - Emitter Cutoff Current $V_{CE} = 40 \text{ Vdc}$ $V_{CE} = 60 \text{ Vdc}$ 2N5679 2N5680	$I_{CEO}$	---	10 10	$\mu\text{Adc}$
Collector - Emitter Cutoff Current $V_{CE} = 60 \text{ Vdc}, V_{BE} = 1.5 \text{ Vdc}$ $V_{CE} = 80 \text{ Vdc}, V_{BE} = 1.5 \text{ Vdc}$ 2N5679 2N5680	$I_{CEX}$	---	300 300	nAdc
Collector - Base Cutoff Current $V_{CB} = 60 \text{ Vdc}$ $V_{CB} = 80 \text{ Vdc}$ 2N5679 2N5680	$I_{CBO}$	---	100 100	nAdc
Emitter - Base Cutoff Current $V_{EB} = 7.0 \text{ Vdc}$	$I_{EBO}$	---	100	nAdc



**Electrical Characteristics -con't**

<b>ON Characteristics (1)</b>				
	Symbol	Minimum	Maximum	Unit
Forward Current Transfer Ratio $I_C = 250 \text{ mAdc}, V_{CE} = 2.0 \text{ Vdc}$ $I_C = 500 \text{ mAdc}, V_{CE} = 2.0 \text{ Vdc}$ $I_C = 1.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$	$H_{FE}$	40 20 5	150	
Collector - Emitter Saturation Voltage $I_C = 250 \text{ mAdc}, I_B = 25 \text{ mAdc}$ $I_C = 500 \text{ mAdc}, I_B = 50 \text{ mAdc}$	$V_{CE(sat)}$	--- ---	0.6 1.0	Vdc
Base - Emitter Voltage $I_C = 250 \text{ mAdc}, I_B = 25 \text{ mAdc}$ $I_C = 500 \text{ mAdc}, I_B = 50 \text{ mAdc}$	$V_{BE(on)}$	--- ---	1.1 1.3	Vdc
<b>DYNAMIC Characteristics</b>				
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 0.1 \text{ Adc}, V_{CE} = 1.5 \text{ Vdc}, f = 10 \text{ MHz}$	$ h_{fe} $	3.0		
Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 0.2 \text{ Adc}, V_{CE} = 1.5 \text{ Vdc}, f = 1.0 \text{ kHz}$	$h_{fe}$	40		
Output Capacitance $V_{CB} = 20 \text{ Vdc}, I_E = 0, f = 1.0 \text{ MHz}$	$C_{obo}$	---	50	pF
<b>SAFE OPERATING AREA</b>				
<b>DC Tests:</b>	$T_C = +25 \text{ }^\circ\text{C}, 1 \text{ Cycle}, t \geq 0.5 \text{ s}$			
<b>Test 1:</b>	$V_{CE} = 2.0 \text{ Vdc}, I_C = 1.0 \text{ Adc}$			
<b>Test 2:</b>	$V_{CE} = 10 \text{ Vdc}, I_C = 1.0 \text{ Adc}$			
<b>Test 3:</b>	$V_{CE} = 90 \text{ Vdc}, I_C = 10 \text{ mAdc}$			

Outline Drawing



NOTE: Dimensions in Inches [mm]

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