

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	$^\circ\text{C/W}$

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

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

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

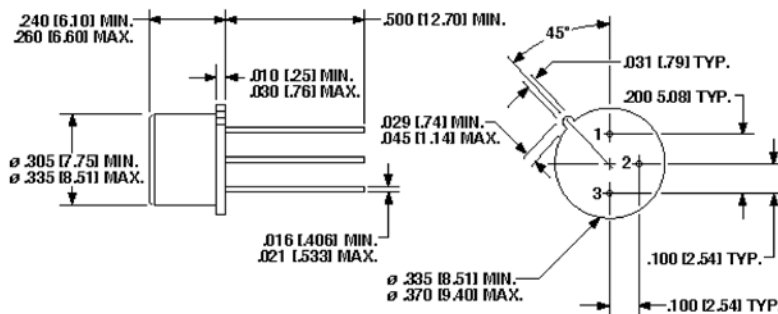
OFF Characteristics	Symbol	Minimum	Maximum	Units
Collector - Emitter Breakdown Voltage $I_C = 100 \text{ mAdc}$ 2N5679 2N5680	$V_{(BR)CEO}$	60 80	---	Vdc
Collector - Emitter Cutoff Current $V_{CE} = 40 \text{ Vdc}$ $V_{CE} = 60 \text{ Vdc}$ 2N5679 2N5680	I_{CEO}	---	10 10	μAdc
Collector - Emitter Cutoff 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

ON Characteristics (1)		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
DYNAMIC Characteristics					
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
SAFE OPERATING AREA					
DC Tests: $T_C = +25^\circ\text{C}, 1 \text{ Cycle}, t \geq 0.5 \text{ s}$ Test 1: $V_{CE} = 2.0 \text{ Vdc}, I_C = 1.0 \text{ Adc}$ Test 2: $V_{CE} = 10 \text{ Vdc}, I_C = 1.0 \text{ Adc}$ Test 3: $V_{CE} = 90 \text{ Vdc}, I_C = 10 \text{ mAdc}$					

Outline Drawing



NOTE: Dimensions in Inches [mm]

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