



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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PNP POWER TRANSISTOR SILICON AMPLIFIER

Qualified per MIL-PRF-19500/ 582

Devices

2N5679

2N5680

Qualified Level

JAN
JANTX
JANTXV

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

| Ratings | Symbol | 2N5679 | 2N5680 | Unit |
|---|-------------------|-------------|-------------|--------------------|
| 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 @ $T_A = +25^{\circ}\text{C}^{(1)}$ | P_T | 1.0 | 1.0 | W |
| @ $T_C = +25^{\circ}\text{C}^{(2)}$ | | 10 | 10 | W |
| Operating & Storage Temperature Range | T_{op}, T_{stg} | -65 to +200 | -65 to +200 | $^{\circ}\text{C}$ |

THERMAL CHARACTERISTICS

| Characteristics | Symbol | Max. | Unit |
|--------------------------------------|-----------------|------|--------------------|
| Thermal Resistance, Junction-to-Case | $R_{\theta JC}$ | 17.5 | $^{\circ}\text{C}$ |

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 $T_C > +25^{\circ}\text{C}$



TO-39*
(TO-205AD)

*See appendix A for package outline

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

| Characteristics | Symbol | Min. | Max. | Unit |
|-----------------|--------|------|------|------|
|-----------------|--------|------|------|------|

OFF CHARACTERISTICS

| | | | | |
|--|---------------|-----|-----|-----------------|
| Collector-Emitter Breakdown Voltage $I_C = 10 \text{ mAdc}$ | $V_{(BR)CEO}$ | 100 | | Vdc |
| 2N5679 2N5680 | | 120 | | |
| Emitter-Base Cutoff Current $V_{EB} = 4.0 \text{ Vdc}$ | I_{EBO} | | 1.0 | μAdc |
| Collector-Emitter Cutoff Current $V_{CE} = 70 \text{ Vdc}$ | I_{CEO} | | 10 | μAdc |
| 2N5679 $V_{CE} = 80 \text{ Vdc}$ 2N5680 | | | | |
| Collector-Emitter Cutoff Current $V_{BE} = 1.5 \text{ Vdc}$ | I_{CEX} | | 100 | nAdc |
| $V_{CE} = 100 \text{ Vdc}$ | | | | |
| 2N5679 | | | | |
| $V_{CE} = 120 \text{ Vdc}$ 2N5680 | | | | |

2N5679, 2N5680 JAN SERIES

ELECTRICAL CHARACTERISTICS (con't)

| Characteristics | Symbol | Min. | Max. | Unit |
|---|---------------|---------------|------------|------|
| ON CHARACTERISTICS | | | | |
| 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 Saturation Voltage $I_C = 250 \text{ mAdc}, I_B = 25 \text{ mAdc}$ $I_C = 500 \text{ mAdc}, I_B = 50 \text{ mAdc}$ | $V_{BE(sat)}$ | | 1.1 1.3 | Vdc |

DYNAMIC CHARACTERISTICS

| | | | | |
|---|------------|-----|----|----|
| Magnitude of Common Emitter Small-Signal Short Circuit Forward-Current Transfer Ratio $I_C = 0.1 \text{ Adc}, V_{CE} = 10 \text{ Vdc}, f = 10 \text{ kHz}$ | $ 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 $V_{CB} = 20 \text{ Vdc}, I_E = 0, f = 1 \text{ MHz}$ | C_{obo} | | 50 | pF |

SAFE OPERATING AREA

DC Tests

$T_C = +25^\circ\text{C}$, 1 Cycle, $t \geq 0.5 \text{ s}$

Test 1

$V_{CE} = 2 \text{ Vdc}, I_C = 1.0 \text{ Adc}$

Test 2

$V_{CE} = 10 \text{ Vdc}, I_C = 1.0 \text{ Adc}$

Test 3

$V_{CE} = 90 \text{ Vdc}, I_C = 50 \text{ mAdc}$