

MULTIPLE (QUAD) PNP SILICON SWITCHING TRANSISTOR

Qualified per MIL-PRF-19500/558

Devices

2N6987
2N6987U

2N6988

Qualified Level

JAN
JANTX
JANTXV
JANS

MAXIMUM RATINGS ⁽¹⁾

| Ratings | Symbol | Value | Units |
|---|------------------------------------|------------------------|----------------|
| Collector-Emitter Voltage ⁽⁴⁾ | V _{CEO} | 60 | Vdc |
| Collector-Base Voltage ⁽⁴⁾ | V _{CBO} | 60 | Vdc |
| Emitter-Base Voltage ⁽⁴⁾ | V _{EBO} | 5.0 | Vdc |
| Collector Current | I _C | 600 | mAdc |
| Total Power Dissipation @ T _A = +25 ⁰ C | P _T | 2N6987 ⁽²⁾ | 1.5 |
| | | 2N6987U ⁽²⁾ | 1.0 |
| | | 2N6988 ⁽³⁾ | 0.4 |
| | | | |
| Operating & Storage Junction Temperature Range | T _{op} , T _{stg} | -65 to +200 | ⁰ C |

1) Maximum voltage between transistors shall be ≥ 500 Vdc

2) Derate linearly 8.57 mW/⁰C above T_A = +25⁰C

3) Derate linearly 2.286 mW/⁰C above T_A = +25⁰C.

4) Ratings apply to each transistor in the array.



*See appendix A for package outline

ELECTRICAL CHARACTERISTICS (T_A = 25⁰C unless otherwise noted)

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

OFF CHARACTERISTICS

| | | | | |
|---|----------------------|----|----------|--------------|
| Collector-Emitter Breakdown Voltage I _C = 10 mAdc | V _{(BR)CEO} | 60 | | Vdc |
| Collector-Base Cutoff Current V _{CB} = 60 Vdc V _{CB} = 50 Vdc | I _{CBO} | | 10 10 | μAdc ηAdc |
| Emitter-Base Cutoff Current V _{BE} = 5.0 Vdc V _{EB} = 3.5 Vdc | I _{EBO} | | 10 50 | μAdc ηAdc |

ELECTRICAL CHARACTERISTICS (con't)

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

DC CHARACTERISTICS

| | | | | |
|--|---------------|-------------------------------|------------|-----|
| Forward-Current Transfer Ratio $I_C = 0.1 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ $I_C = 1.0 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ $I_C = 10 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ $I_C = 150 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ $I_C = 500 \text{ mA dc}, V_{CE} = 10 \text{ V dc}$ | h_{FE} | 75 100 100 100 50 | 450 300 | |
| Collector-Emitter Saturation Voltage $I_C = 150 \text{ mA dc}, I_B = 15 \text{ mA dc}$ $I_C = 500 \text{ mA dc}, I_B = 50 \text{ mA dc}$ | $V_{CE(sat)}$ | | 0.4 1.6 | Vdc |
| Base-Emitter Voltage $I_C = 150 \text{ mA dc}, I_B = 15 \text{ mA dc}$ $I_C = 500 \text{ mA dc}, I_B = 50 \text{ mA dc}$ | $V_{BE(sat)}$ | | 1.3 2.6 | Vdc |

DYNAMIC CHARACTERISTICS

| | | | | |
|---|------------|-----|-----|----|
| Magnitude of Small-Signal Short-Circuit Forward-Current Transfer Ratio $I_C = 50 \text{ mA dc}, V_{CE} = 20 \text{ V dc}, f = 100 \text{ MHz}$ | $ h_{fe} $ | 2.0 | 8.0 | |
| Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 1.0 \text{ mA dc}, V_{CE} = 10 \text{ V dc}, f = 1.0 \text{ kHz}$ | h_{fe} | 100 | | |
| Output Capacitance $V_{CB} = 10 \text{ V dc}, I_E = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$ | C_{obo} | | 8.0 | pF |
| Input Capacitance $V_{EB} = 2.0 \text{ V dc}, I_C = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$ | C_{ibo} | | 30 | pF |