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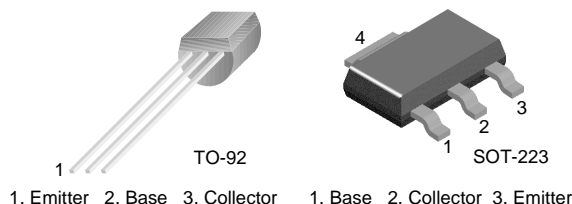
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MPSA27/PZTA27

NPN General Purpose Amplifier

- This device is designed for applications requiring extremely high current gain at collector currents to 500mA.
- Sourced from process 03.
- See MPSA28 for characteristics.



Absolute Maximum Ratings* $T_A=25^{\circ}\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|----------------|--|------------|--------------------|
| V_{CES} | Collector-Emitter Voltage | 60 | V |
| V_{CBO} | Collector-Base Voltage | 60 | V |
| V_{EBO} | Emitter-Base Voltage | 10 | V |
| I_C | Collector current - Continuous | 800 | mA |
| T_J, T_{stg} | Operating and Storage Junction Temperature | -55 ~ +150 | $^{\circ}\text{C}$ |

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:

- These ratings are based on maximum junction temperature of 150 degrees C.
- These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

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

| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|-------------------------------------|--------------------------------------|---|----------------|------|------|-------|
| Off Characteristics | | | | | | |
| $V_{(BR)CES}$ | Collector-Emitter Breakdown Voltage | $I_C = 100\mu\text{A}, V_{BE} = 0$ | 60 | | | V |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage | $I_C = 10\mu\text{A}, I_C = 0$ | 60 | | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage | $I_C = 100\mu\text{A}, I_C = 0$ | 10 | | | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB} = 50\text{V}, I_E = 0$ | | | 100 | nA |
| I_{CES} | Collector Cutoff Current | $V_{CE} = 50\text{V}, V_{BE} = 0$ | | | 500 | nA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB} = 10\text{V}, I_C = 0$ | | | 100 | nA |
| On Characteristics | | | | | | |
| h_{FE} | DC Current Gain | $I_C = 10\text{mA}, V_{CE} = 5.0\text{V}$ $I_C = 100\text{mA}, V_{CE} = 5.0\text{V}$ | 10000 10000 | | | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 100\text{mA}, I_B = 0.1\text{mA}$ | | | 1.5 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C = 100\text{mA}, V_{CE} = 5.0\text{V}$ | | | 2.0 | V |
| Small Signal Characteristics | | | | | | |
| f_T | Current Gain Bandwidth Product | $I_C = 10\text{mA}, V_{CE} = 5.0\text{V},$ $f = 100\text{MHz}$ | 125 | | | MHz |

Thermal Characteristics $T_A=25^{\circ}\text{C}$ unless otherwise noted

| Symbol | Parameter | Max. | | Units |
|-----------------|---|------------|-------------|------------------------------|
| | | MPSA27 | *PZTA27 | |
| P_D | Total Device Dissipation Derate above 25°C | 625 5.0 | 1000 8.0 | mW mW/ $^{\circ}\text{C}$ |
| $R_{\theta JC}$ | Thermal Resistance, Junction to Case | 83.3 | | $^{\circ}\text{C}/\text{W}$ |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 200 | 125 | $^{\circ}\text{C}/\text{W}$ |

* Device mounted on FR-4 PCB 36mm \times 18mm \times 1.5mm: mounting pad for the collector lead min. 6cm.

Package Dimensions

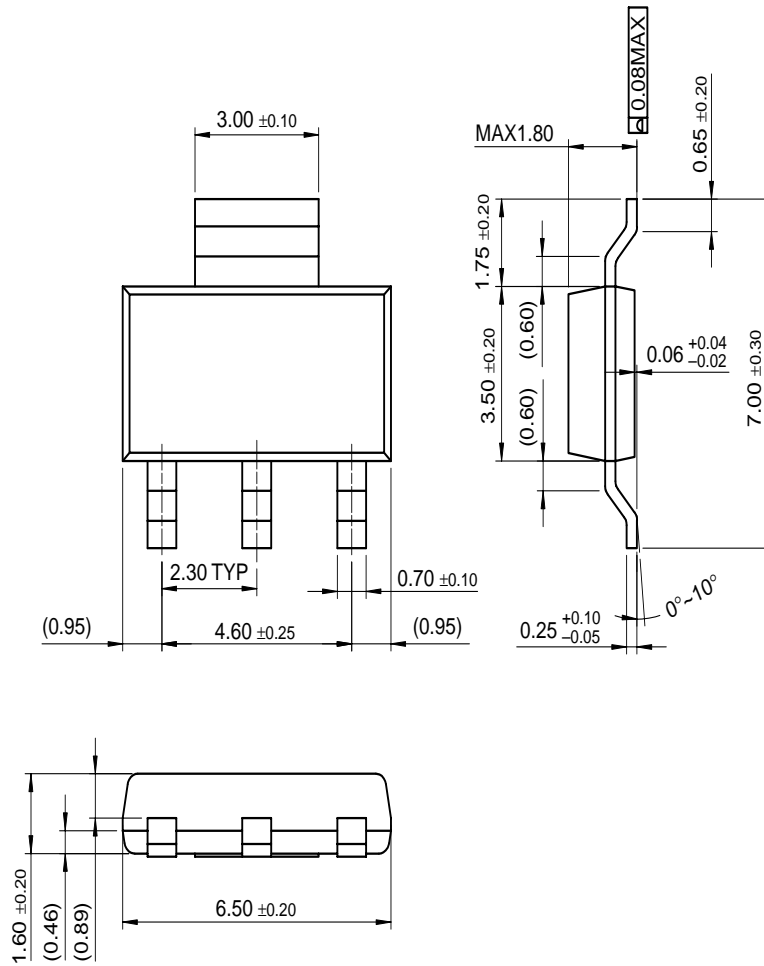
TO-92



Dimensions in Millimeters

Package Dimensions (Continued)

SOT-223



Dimensions in Millimeters

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|--------------------------|------------------------|---|
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