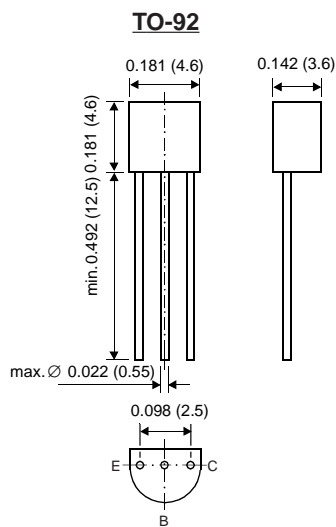


# MPSA56

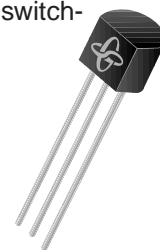
## Small Signal Transistors (PNP)



Dimensions in inches and (millimeters)

### FEATURES

- ◆ PNP Silicon Epitaxial Planar Transistor for switching and amplifier applications.
- ◆ As complementary type, the NPN transistor MPSA06 is recommended.
- ◆ On special request, this transistor is also manufactured in the pin configuration TO-18.
- ◆ This transistor is also available in the SOT-23 case with the type designation MMBTA56.



### MECHANICAL DATA

**Case:** TO-92 Plastic Package

**Weight:** approx. 0.18g

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified

|  | SYMBOL          | VALUE              | UNIT             |
|--|-----------------|--------------------|------------------|
| Collector-Base Voltage   | $-V_{CB0}$      | 80                 | V                |
| Collector-Emitter Voltage  | $-V_{CEO}$      | 80                 | V                |
| Emitter-Base Voltage   | $-V_{EBO}$      | 4.0                | V                |
| Collector Current  | $-I_C$          | 500                | mA               |
| Power Dissipation at $T_A = 25\text{ }^\circ\text{C}$<br>at $T_C = 25\text{ }^\circ\text{C}$ | $P_{tot}$       | 625<br>1.5         | mW<br>W          |
| Thermal Resistance Junction to Ambient Air   | $R_{\theta JA}$ | 200 <sup>(1)</sup> | K/W              |
| Junction Temperature   | $T_j$           | 150                | $^\circ\text{C}$ |
| Storage Temperature Range  | $T_S$           | - 55 to +150       | $^\circ\text{C}$ |

<sup>1)</sup>Valid provided that leads are kept at ambient temperature

# MPSA56

## ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified

|   | <i>SYMBOL</i>        | <i>MIN.</i> | <i>.MAX.</i> | <i>UNIT</i> |
|---|----------------------|-------------|--------------|-------------|
| Collector-Emitter Breakdown Voltage<br>at $-I_C = 1 \text{ mA}$ , $I_B = 0 \text{ mA}$  | $-V_{BR(CEO)}$       | 80          | –            | V           |
| Emitter-Base Breakdown Voltage<br>at $I_E = 100 \text{ mA}$ , $I_C = 0$   | $-V_{(BR)EBO}$       | 4.0         | –            | V           |
| Collector-Emitter Cutoff Current<br>$-V_{CE} = 60 \text{ V}$ , $-I_B = 0$   | $-I_{CES}$           | –           | 100          | nA          |
| Collector-Base Cutoff Current<br>$-V_{CB} = 80 \text{ V}$ , $I_E = 0$   | $-I_{CBO}$           | –           | 100          | nA          |
| Collector Saturation Voltage<br>at $-I_C = 100 \text{ mA}$ , $-I_B = 10 \text{ mA}$   | $-V_{CEsat}$         | –           | 0.25         | V           |
| Base-Emitter On Voltage<br>at $-I_C = 100 \text{ mA}$ , $-I_B = 10 \text{ mA}$<br>at $-I_C = 50 \text{ mA}$ , $-I_B = 5 \text{ mA}$ | $-V_{BE(on)}$        | –           | 1.2          | V           |
| DC Current Gain<br>at $V_{CE} = 1 \text{ V}$ , $-I_C = 10 \text{ mA}$<br>at $V_{CE} = 1 \text{ V}$ , $-I_C = 100 \text{ mA}$        | $h_{FE}$<br>$h_{FE}$ | 100<br>100  | –<br>–       | –<br>–      |
| Gain-Bandwidth Product<br>at $V_{CE} = 1 \text{ V}$ , $I_C = 100 \text{ mA}$ , $f = 100 \text{ MHz}$                                | $f_T$                | 50          | –            | MHz         |

1) Valid provided that electrodes are kept at ambient temperature