

# MPSA92

## Features

- Halogen free available upon request by adding suffix "-HF"
- Through Hole Package
- Operating & Storage Temperature: -55°C to +150°C
- Marking : A92
- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

## PNP Silicon High Voltage Transistor

### Electrical Characteristics @ 25°C Unless Otherwise Specified

| Symbol                     | Parameter   | Min  | Max   | Units         |
|----------------------------|---|------|-------|---------------|
| <b>OFF CHARACTERISTICS</b> |   |      |       |               |
| $V_{(BR)CEO}$              | Collector-Emitter Breakdown Voltage*<br>( $I_C = -1.0\text{mA}$ , $I_B = 0$ ) | -300 |       | Vdc           |
| $V_{(BR)CBO}$              | Collector-Base Breakdown Voltage<br>( $I_C = -100\mu\text{A}$ , $I_E = 0$ )   | -300 |       | Vdc           |
| $V_{(BR)EBO}$              | Emitter -Base Breakdown Voltage<br>( $I_E = -10\mu\text{A}$ , $I_C = 0$ )     | -5.0 |       | Vdc           |
| $I_{EBO}$                  | Emitter Cutoff Current<br>( $V_{EB} = -3.0\text{V}$ , $I_C = 0$ )             |      | -0.25 | $\mu\text{A}$ |
| $I_{CBO}$                  | Collector Cutoff Current<br>( $V_{CB} = -200\text{V}$ , $I_E = 0$ )           |      | -0.25 | $\mu\text{A}$ |

### ON CHARACTERISTICS

|               |  |                |      |     |
|---------------|--|----------------|------|-----|
| $h_{FE}$      | DC Current Gain*<br>( $I_C = -1.0\text{mA}$ , $V_{CE} = -10\text{V}$ )<br>( $I_C = -10\text{mA}$ , $V_{CE} = -10\text{V}$ )<br>( $I_C = -50\text{mA}$ , $V_{CE} = -10\text{V}$ ) | 25<br>80<br>25 | 250  |     |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage<br>( $I_C = -20\text{mA}$ , $I_B = -2.0\text{mA}$ )   |                | -0.5 | Vdc |
| $V_{BE(sat)}$ | Base-Emitter Saturation Voltage<br>( $I_C = -20\text{mA}$ , $I_B = -2.0\text{mA}$ )  |                | -0.9 | Vdc |

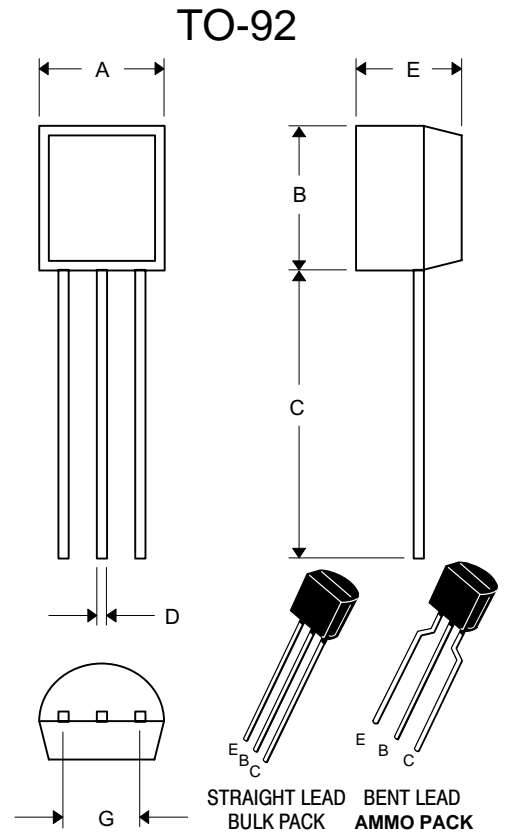
### SMALL-SIGNAL CHARACTERISTICS

|          |   |    |     |     |
|----------|---|----|-----|-----|
| $f_T$    | Current Gain-Bandwidth Product<br>( $I_C = -10\text{mA}$ , $V_{CE} = -5\text{V}$ , $f = 30\text{MHz}$ ) | 50 |     | MHz |
| $C_{cb}$ | Collector-Base Capacitance<br>( $V_{CB} = -20\text{V}$ , $I_E = 0$ , $f = 1.0\text{MHz}$ )              |    | 6.0 | pF  |

\*Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$

### MAXIMUM RATINGS

| Symbol          | Characteristic   | MPSA92     | Unit           |
|-----------------|--|------------|----------------|
| $V_{CEO}$       | Collector-Emitter Voltage  | -300       | Vdc            |
| $V_{CBO}$       | Collector-Base Voltage   | -300       | Vdc            |
| $V_{EBO}$       | Emitter-Base Voltage   | -5.0       | Vdc            |
| $I_C$           | Collector Current — Continuous   | -300       | mA             |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient                                  | 200        | °C/W           |
| $R_{\theta JC}$ | Thermal Resistance, Junction to Case                                     | 83.3       | °C/W           |
| $P_D$           | Total Device Dissipation @ $T_A = 25^\circ\text{C}$<br>Derate above 25°C | 625<br>5.0 | mW<br>mW/°C    |
| $P_D$           | Total Device Dissipation @ $T_C = 25^\circ\text{C}$<br>Derate above 25°C | 1.5<br>12  | Watts<br>mW/°C |



| DIM | INCHES |      | MM    |      | NOTE          |
|-----|--------|------|-------|------|---------------|
|     | MIN    | MAX  | MIN   | MAX  |               |
| A   | .175   | .185 | 4.45  | 4.70 |               |
| B   | .175   | .185 | 4.45  | 4.70 |               |
| C   | .500   | ---  | 12.70 | ---  |               |
| D   | .016   | .020 | 0.41  | 0.63 |               |
| E   | .135   | .145 | 3.43  | 3.68 |               |
| G   | .095   | .105 | 2.42  | 2.67 | Straight Lead |
|     | .173   | .220 | 4.40  | 5.60 | Bent Lead     |

\* For ammo packing detailed specification, click here to visit our website of product packaging for details.

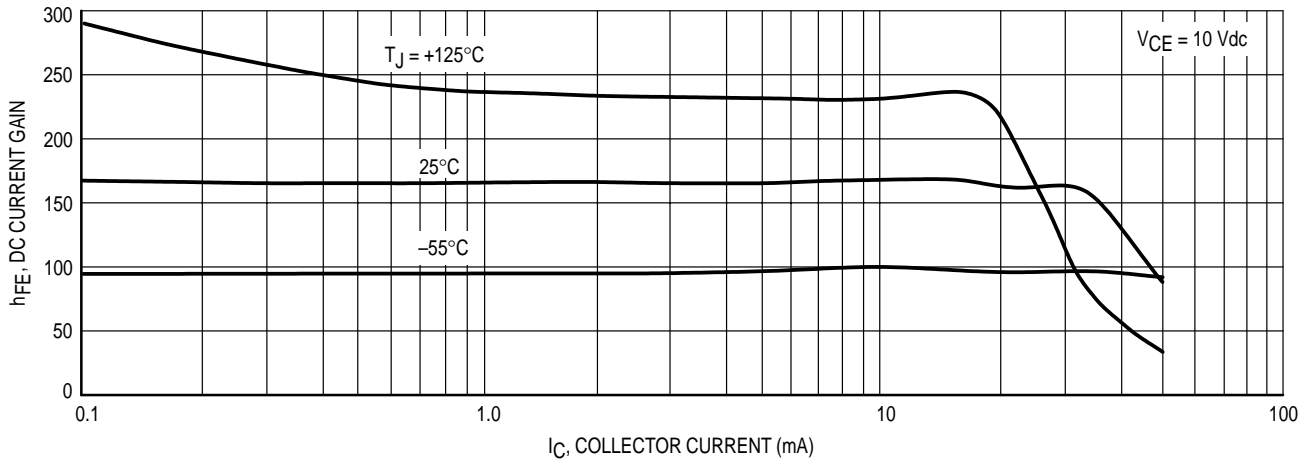


Figure 1. DC Current Gain

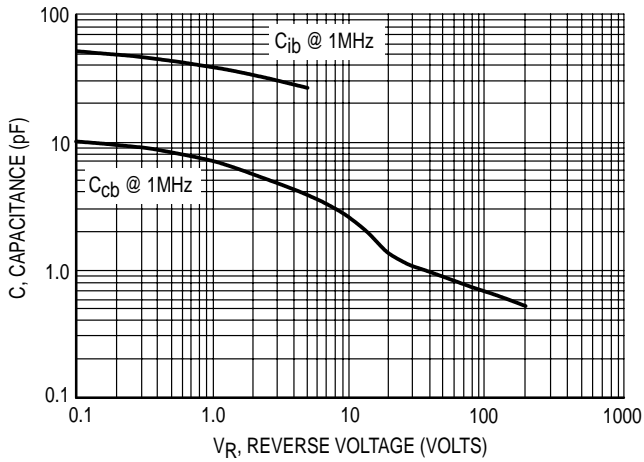


Figure 2. Capacitance

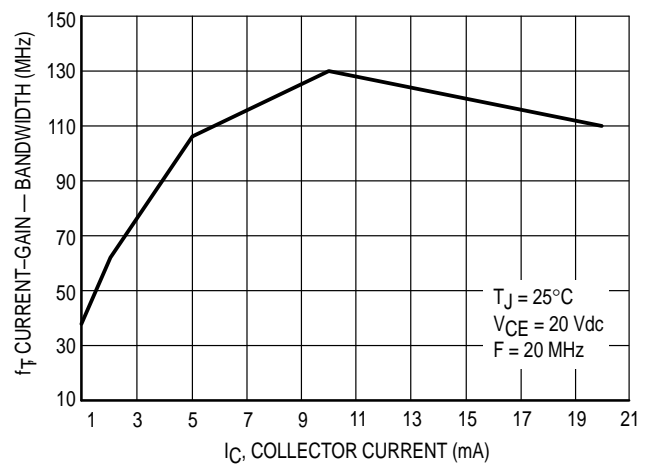


Figure 3. Current-Gain — Bandwidth

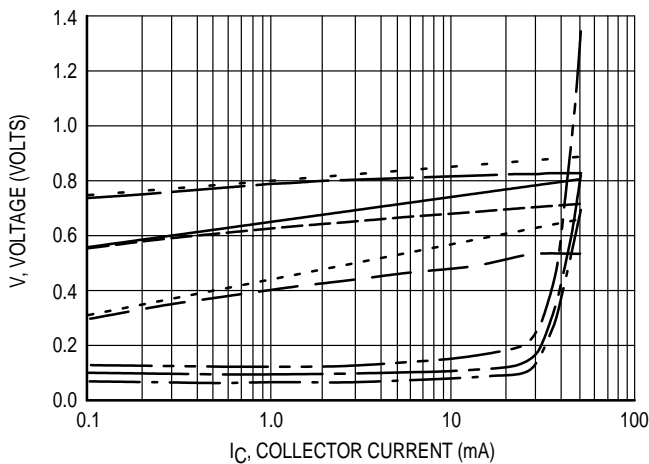


Figure 4. "ON" Voltages

- VCE(sat) @ 25°C, IC/IB = 10
- VCE(sat) @ 125°C, IC/IB = 10
- VCE(sat) @ -55°C, IC/IB = 10
- VBE(sat) @ 25°C, IC/IB = 10
- VBE(sat) @ 125°C, IC/IB = 10
- VBE(sat) @ -55°C, IC/IB = 10
- VBE(on) @ 25°C, VCE = 10 V
- VBE(on) @ 125°C, VCE = 10 V
- VBE(on) @ -55°C, VCE = 10 V



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### Ordering Information :

| Device         | Packing                     |
|----------------|-----------------------------|
| Part Number-AP | Ammo Packing: 20Kpcs/Carton |
| Part Number-BP | Bulk: 100Kpcs/Carton        |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-AP-HF

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