

## Features

- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

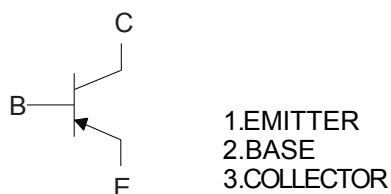
## Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 200°C/W Junction to Ambient
- Thermal Resistance: 83.3°C/W Junction to Case

| Parameter                    | Symbol    | Rating | Unit  |
|------------------------------|-----------|--------|-------|
| Collector-Base Voltage       | $V_{CBO}$ | -80    | V     |
| Collector-Emitter Voltage    | $V_{CEO}$ | -80    | V     |
| Emitter-Base Voltage         | $V_{EBO}$ | -4     | V     |
| Continuous Collector Current | $I_C$     | -500   | mA    |
| Power Dissipation            | $P_D$     | 625    | mW    |
|                              |           | 5      | mW/°C |
|                              |           | 1.5    | W     |
|                              |           | 12     | mW/°C |

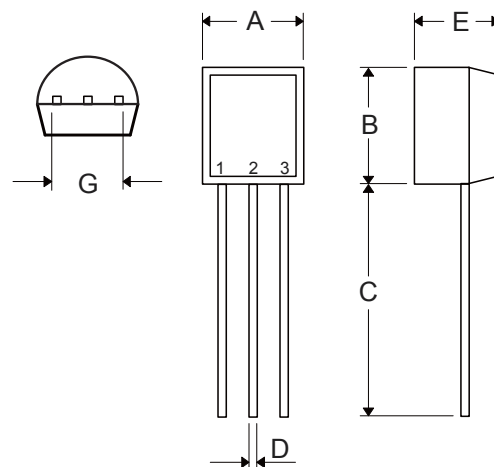
**Marking Code:** MPSA55,MPSA56

## Internal Structure



# PNP Silicon Amplifier Transistor

## TO-92



| DIMENSIONS |        |       |       |       |               |
|------------|--------|-------|-------|-------|---------------|
| DIM        | INCHES |       | MM    |       | NOTE          |
|            | MIN    | MAX   | MIN   | MAX   |               |
| A          | 0.169  | 0.185 | 4.30  | 4.70  |               |
| B          | 0.169  | 0.185 | 4.30  | 4.70  |               |
| C          | 0.500  | ----- | 12.70 | ----- |               |
| D          | 0.015  | 0.022 | 0.38  | 0.55  |               |
| E          | 0.130  | 0.146 | 3.30  | 3.70  |               |
| G          | 0.095  | 0.105 | 2.42  | 2.67  | Straight Lead |
|            | 0.173  | 0.220 | 4.40  | 5.60  | Bent          |

Electrical Characteristics @  $T_A=25^{\circ}\text{C}$  Unless Otherwise Specified

| Parameter                            |        | Symbol        | Min | Typ | Max   | Units         | Conditions  |
|--------------------------------------|--------|---------------|-----|-----|-------|---------------|---|
| Collector-Emitter Breakdown Voltage* | MPSA55 | $V_{(BR)CEO}$ | -60 |     |       | V             | $I_C=-1\text{mA}, I_B=0$                                |
|                                      | MPSA56 |               | -80 |     |       |               |   |
| Emitter-Base Breakdown Voltage       |        | $V_{(BR)EBO}$ | -4  |     |       | V             | $I_E=-100\mu\text{A}, I_C=0$                            |
| Collector Cutoff Current             |        | $I_{CES}$     |     |     | -0.1  | $\mu\text{A}$ | $V_{CE}=-60\text{V}, I_B=0$                             |
| Collector Cutoff Current             | MPSA55 | $I_{CBO}$     |     |     | -0.1  | $\mu\text{A}$ | $V_{CB}=-60\text{V}, I_E=0$                             |
|                                      | MPSA56 |               |     |     | -0.1  | $\mu\text{A}$ | $V_{CB}=-80\text{V}, I_E=0$                             |
| DC Current Gain*                     |        | $h_{FE(1)}$   | 100 |     |       |               | $V_{CE}=-1\text{V}, I_C=-10\text{mA}$                   |
|                                      |        | $h_{FE(2)}$   | 100 |     |       |               | $V_{CE}=-1\text{V}, I_C=-100\text{mA}$                  |
| Collector-Emitter Saturation Voltage |        | $V_{CE(sat)}$ |     |     | -0.25 | V             | $I_C=-100\text{mA}, I_B=-10\text{mA}$                   |
| Base-Emitter Saturation Voltage      |        | $V_{BE(on)}$  |     |     | -1.2  | V             | $V_{CE}=-1\text{V}, I_C=-100\text{mA}$                  |
| Transition Frequency                 |        | $f_T$         | 50  |     |       | MHz           | $V_{CE}=-1\text{V}, I_C=-100\text{mA}, f=100\text{MHz}$ |

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

## Curve Characteristics

Fig. 1 - Static Characteristics

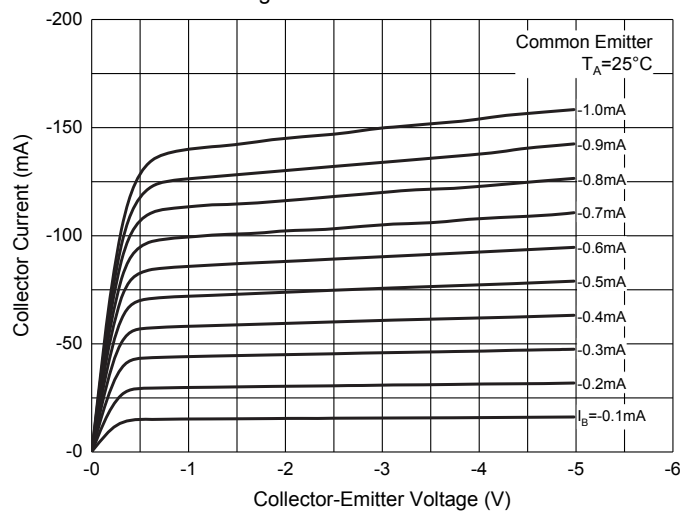


Fig. 2 - DC Current Gain Characteristics

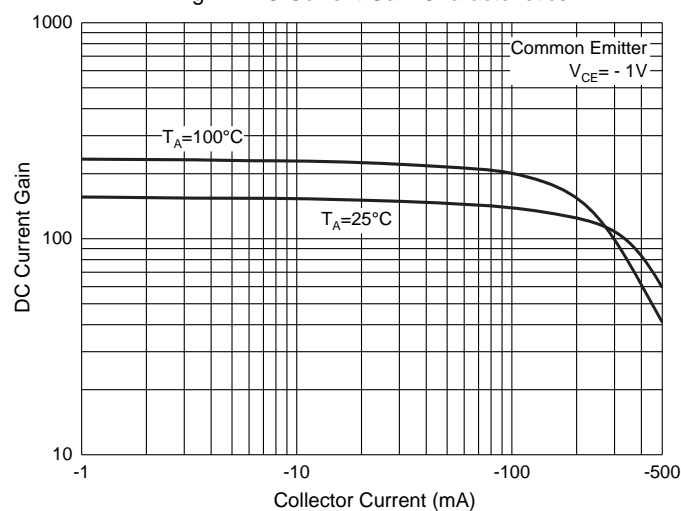


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

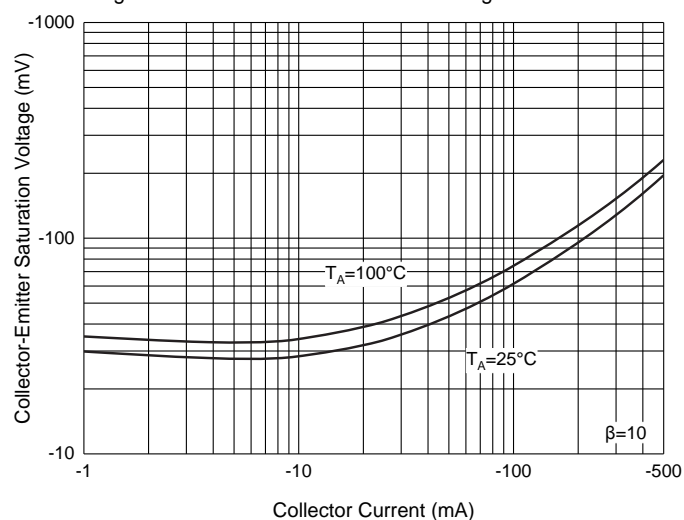


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

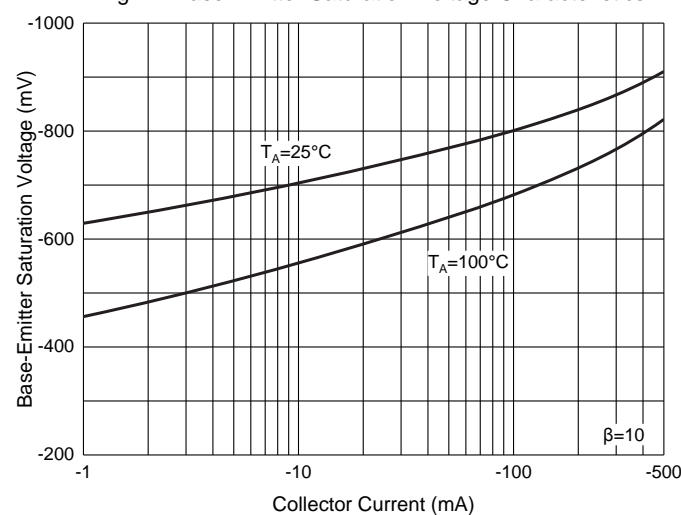


Fig. 5 - Base-Emitter Voltage Characteristics

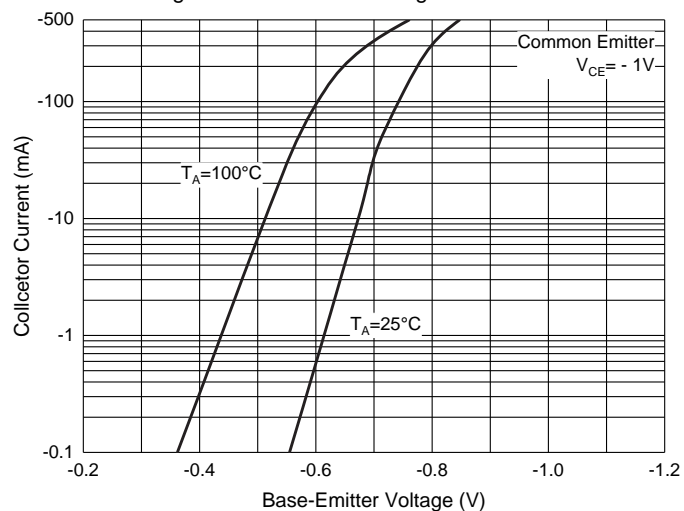
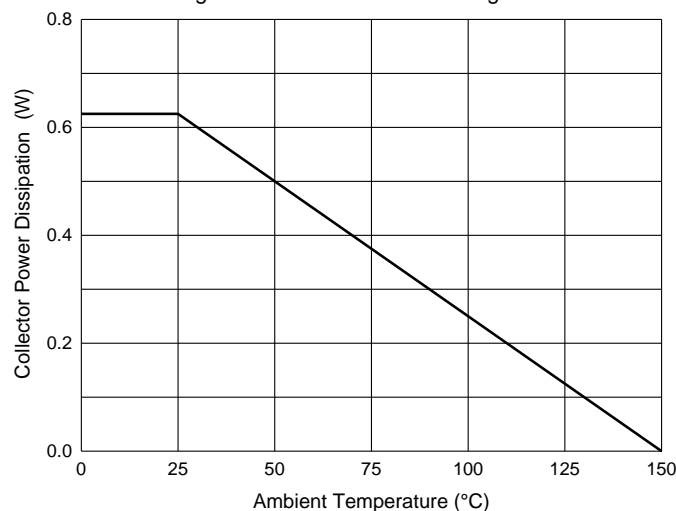


Fig. 6 - Collector Power Derating Curve



## 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-TP-HF

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