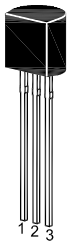
# MPSA92 / 93

## PNP Silicon Expitaxial Planar Transistor

for high voltage switching and amplifier applications.

As complementary type the NPN transistor MPSA42 and MPSA 43 are recommended.

On special request, these transistors can be manufactured in different pin configurations.




1. Emitter 2. Base 3. Collector
TO-92 Plastic Package

**Absolute Maximum Ratings ($T_a$ = 25 °C)**

| Parameter | | Symbol | Value | Unit |
|---|---|---|---|---|
| Collector Base Voltage | MPSA92<br>MPSA93 | $-V_{CBO}$ | 300<br>200 | V |
| Collector Emitter Voltage | MPSA92<br>MPSA93 | $-V_{CEO}$ | 300<br>200 | V |
| Emitter Base Voltage | | $-V_{EBO}$ | 5 | V |
| Collector Current | | $-I_C$ | 500 | mA |
| Power Dissipation | | $P_{tot}$ | 625 | mW |
| Junction Temperature | | $T_j$ | 150 | °C |
| Storage Temperature Range | | $T_{stg}$ | - 55 to + 150 | °C |

**Characteristics at $T_a$ = 25 °C**

| Parameter | | Symbol | Min. | Max. | Unit |
|---|---|---|---|---|---|
| DC Current Gain | | | | | |
| at $-I_C$ = 1 mA, $-V_{CE}$ = 10 V | | $h_{FE}$ | 25 | - | - |
| at $-I_C$ = 10 mA, $-V_{CE}$ = 10 V | | $h_{FE}$ | 40 | - | - |
| at $-I_C$ = 30 mA, $-V_{CE}$ = 10 V | | $h_{FE}$ | 25 | - | - |
| Collector Base Cutoff Current | | | | | |
| at $-V_{CB}$ = 200 V | MPSA92 | $-I_{CBO}$ | - | 0.25 | µA |
| at $-V_{CB}$ = 160 V | MPSA93 | $-I_{CBO}$ | - | 0.25 | µA |
| Emitter Base Cutoff Current<br>at $-V_{EB}$ = 3 V | | $-I_{EBO}$ | - | 0.1 | µA |
| Collector Base Breakdown Voltage | | | | | |
| at $-I_C$ = 100 µA | MPSA92 | $-V_{(BR)CBO}$ | 300 | - | V |
| | MPSA93 | $-V_{(BR)CBO}$ | 200 | - | V |
| Collector Emitter Breakdown Voltage | | | | | |
| at $-I_C$ = 1 mA | MPSA92 | $-V_{(BR)CEO}$ | 300 | - | V |
| | MPSA93 | $-V_{(BR)CEO}$ | 200 | - | V |
| Emitter Base Breakdown Voltage<br>at $-I_E$ = 100 µA | | $-V_{(BR)EBO}$ | 5 | - | V |
| Collector Emitter Saturation Voltage<br>at $-I_C$ = 20 mA, $-I_B$ = 2 mA | | $-V_{CE(sat)}$ | - | 0.5 | V |
| Base Emitter Saturation Voltage<br>at $-I_C$ = 20 mA, $-I_B$ = 2 mA | | $-V_{BE(sat)}$ | - | 0.9 | V |
| Gain Bandwidth Product<br>at $-I_C$ = 10 mA, $-V_{CE}$ = 20 V, f = 100 MHz | | $f_T$ | 50 | - | MHz |
| Collector Output Capacitance | | | | | |
| at $-V_{CB}$ = 20 V, f = 1 MHz | MPSA92 | $C_{ob}$ | - | 6 | pF |
| | MPSA93 | $C_{ob}$ | - | 8 | pF |

*Dated: 16/06/2004*

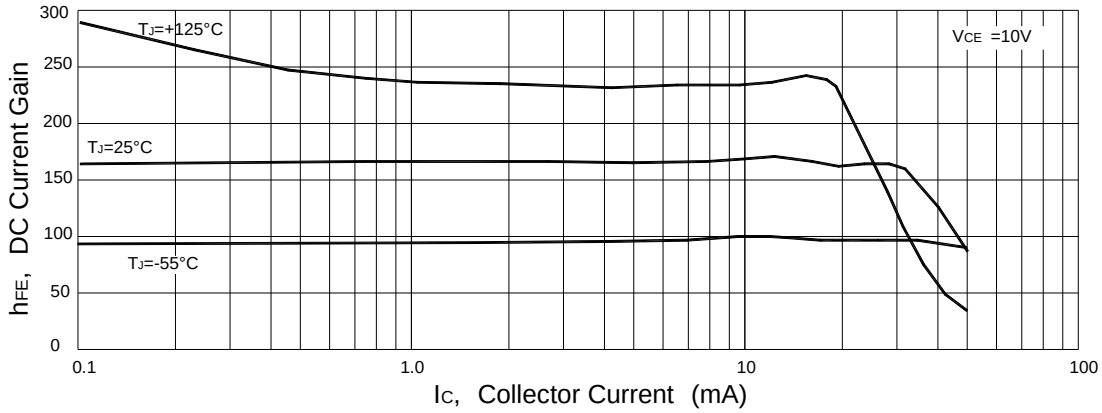



**Figure 1. DC Current Gain**

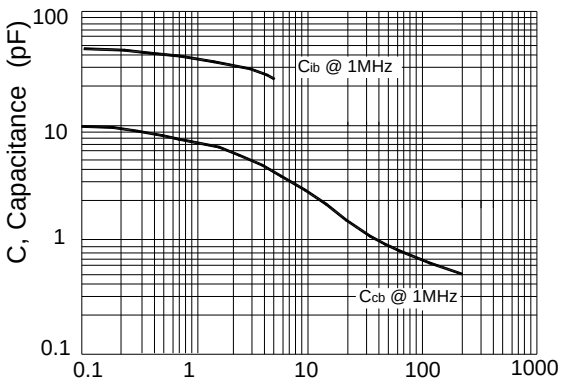



**Figure 2. Capacitance**

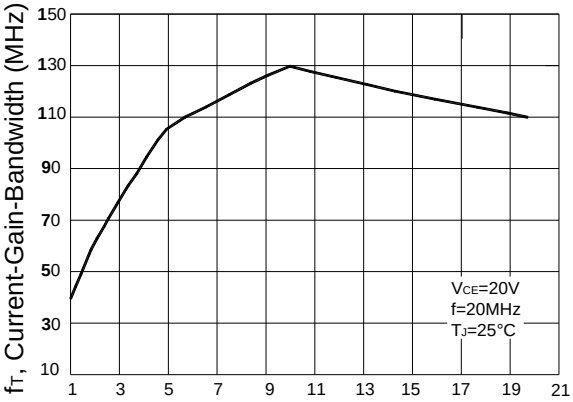



**Figure 3. Current-Gain-Bandwidth**