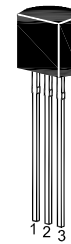


MPSA42 / 43

NPN Silicon Epitaxial Planar Transistor

for high voltage switching and amplifier applications.

complementary type the PNP transistor MPSA 92 and MPSA 93 is recommended.



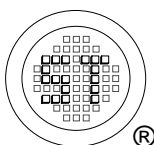
1. Emitter 2. Base 3. Collector
TO-92 Plastic Package

Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

| Parameter | Symbol | Value | Unit | |
|---------------------------|------------------|-----------|---------------|------------------|
| Collector Base Voltage | MPSA42 MPSA43 | V_{CBO} | 300 200 | V |
| Collector Emitter Voltage | MPSA42 MPSA43 | V_{CEO} | 300 200 | V |
| Emitter Base Voltage | | V_{EBO} | 6 | V |
| Collector Current | | I_C | 500 | mA |
| Power Dissipation | | P_{tot} | 625 | mW |
| Junction Temperature | | T_j | 150 | $^\circ\text{C}$ |
| Storage Temperature Range | | T_{stg} | - 55 to + 150 | $^\circ\text{C}$ |

Characteristics at $T_a = 25\text{ }^\circ\text{C}$

| Parameter | Symbol | Min. | Max. | Unit | |
|---|----------|---------------|------|------|---------------|
| DC Current Gain | | | | | |
| at $V_{CE} = 10\text{ V}$, $I_C = 1\text{ mA}$ | h_{FE} | 25 | - | - | |
| at $V_{CE} = 10\text{ V}$, $I_C = 10\text{ mA}$ | h_{FE} | 40 | - | - | |
| at $V_{CE} = 10\text{ V}$, $I_C = 30\text{ mA}$ | h_{FE} | 40 | - | - | |
| Collector Base Cutoff Current | | | | | |
| at $V_{CB} = 200\text{ V}$ | MPSA42 | I_{CBO} | - | 0.1 | μA |
| at $V_{CB} = 160\text{ V}$ | MPSA43 | I_{CBO} | - | 0.1 | μA |
| Emitter Base Cutoff Current | | | | | |
| at $V_{EB} = 6\text{ V}$ | MPSA42 | I_{EBO} | - | 0.1 | μA |
| at $V_{EB} = 4\text{ V}$ | MPSA43 | I_{EBO} | - | 0.1 | μA |
| Collector Base Breakdown Voltage | | | | | |
| at $I_C = 100\text{ }\mu\text{A}$ | MPSA42 | $V_{(BR)CBO}$ | 300 | - | V |
| | MPSA43 | $V_{(BR)CBO}$ | 200 | - | V |
| Collector Emitter Breakdown Voltage | | | | | |
| at $I_C = 1\text{ mA}$ | MPSA42 | $V_{(BR)CEO}$ | 300 | - | V |
| | MPSA43 | $V_{(BR)CEO}$ | 200 | - | V |
| Emitter Base Breakdown Voltage | | | | | |
| at $I_E = 100\text{ }\mu\text{A}$ | | $V_{(BR)EBO}$ | 6 | - | V |
| Collector Emitter Saturation Voltage | | | | | |
| at $I_C = 20\text{ mA}$, $I_B = 2\text{ mA}$ | | $V_{CE(sat)}$ | - | 0.5 | V |
| Base Emitter Saturation Voltage | | | | | |
| at $I_C = 20\text{ mA}$, $I_B = 2\text{ mA}$ | | $V_{BE(sat)}$ | - | 0.9 | V |
| Gain Bandwidth Product | | | | | |
| at $I_C = 10\text{ mA}$, $V_{CE} = 20\text{ V}$, $f = 100\text{ MHz}$ | | f_T | 50 | - | MHz |
| Collector Output Capacitance | | | | | |
| at $V_{CB} = 20\text{ V}$, $f = 1\text{ MHz}$ | MPSA42 | C_{ob} | - | 3 | pF |
| | MPSA43 | C_{ob} | - | 4 | pF |



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Dated : 18/06/2004

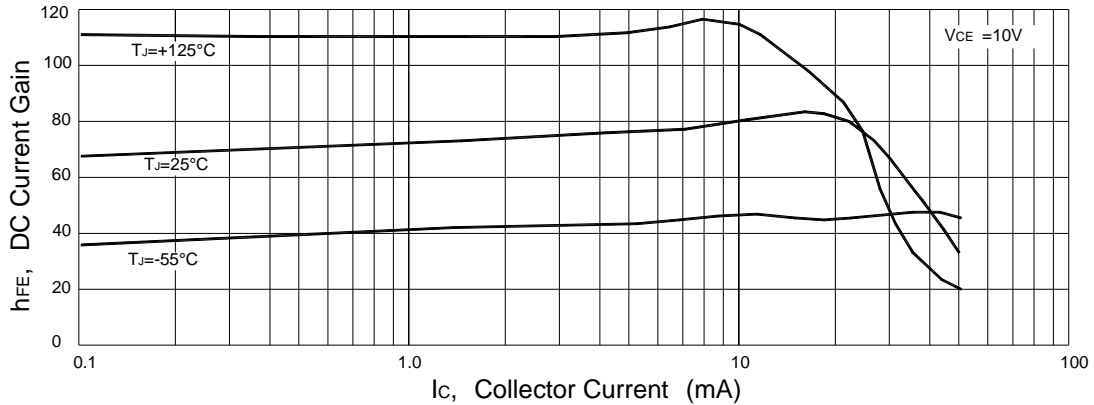


Figure 1. DC Current Gain

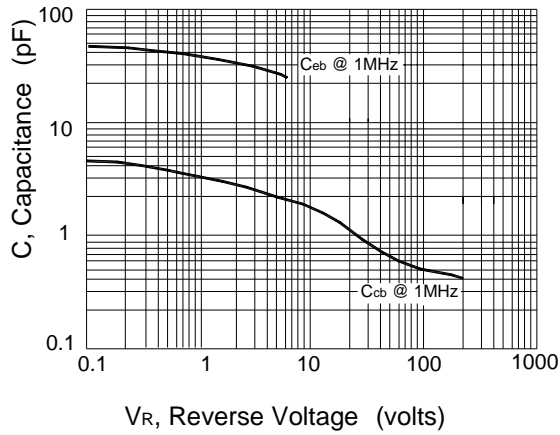


Figure 2. Capacitance

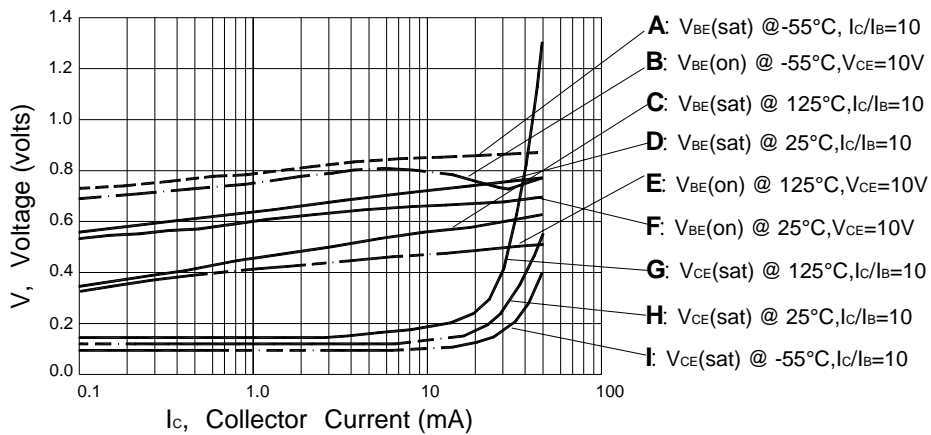
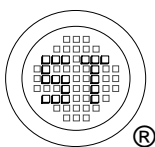


Figure 3. "on" Voltages



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