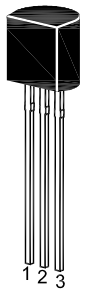
# MPS8599

## PNP Silicon Amplifier Transistor

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




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

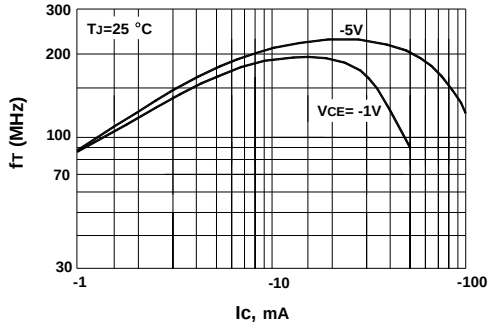
**Absolute Maximum Ratings ($T_a$ = 25 °C)**

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Collector Base Voltage | $-V_{CBO}$ | 80 | V |
| Collector Emitter Voltage | $-V_{CEO}$ | 80 | 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 |

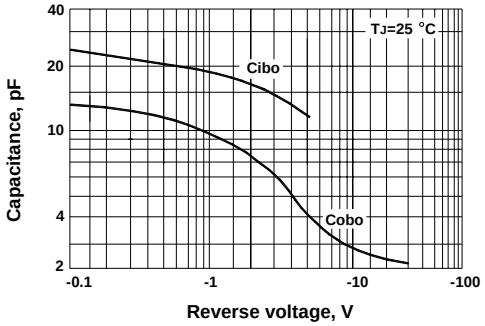
**Characteristics at $T_a$ = 25 °C**

| Parameter | Symbol | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| DC Current Gain | | | | | |
| at $-V_{CE}$ = 5 V, $-I_C$ = 1 mA | $h_{FE}$ | 100 | - | 300 | - |
| at $-V_{CE}$ = 5 V, $-I_C$ = 10 mA | $h_{FE}$ | 100 | - | - | - |
| at $-V_{CE}$ = 5 V, $-I_C$ = 100 mA | $h_{FE}$ | 75 | - | - | - |
| Collector Base Cutoff Current at $-V_{CB}$ = 80 V | $-I_{CBO}$ | - | - | 0.1 | µA |
| Collector Emitter Cutoff Current at $-V_{CE}$ = 60 V | $-I_{CES}$ | - | - | 0.1 | µA |
| Emitter Base Cutoff Current at $-V_{EB}$ = 4 V | $-I_{EBO}$ | - | - | 0.1 | µA |
| Collector Base Breakdown Voltage at $-I_C$ = 100 µA | $-V_{(BR)CBO}$ | 80 | - | - | V |
| Collector Emitter Breakdown Voltage at $-I_C$ = 10 mA | $-V_{(BR)CEO}$ | 80 | - | - | V |
| Emitter-Base Breakdown Voltage at $-I_E$ = 10 µA | $-V_{(BR)EBO}$ | 5 | - | - | V |
| Collector Emitter Saturation Voltage | | | | | |
| at $-I_C$ = 100 mA, $-I_B$ = 5 mA | $-V_{CEsat}$ | - | - | 0.4 | V |
| at $-I_C$ = 100 mA, $-I_B$ = 10 mA | $-V_{CEsat}$ | - | - | 0.3 | V |
| Base Emitter On Voltage at $-V_{CE}$ = 5 V, $-I_C$ = 10 mA | $-V_{BE(on)}$ | 0.6 | - | 0.8 | V |
| Current Gain Bandwidth Product at $-V_{CE}$ = 5 V, $-I_C$ = 10 mA, f = 100 MHz | $f_T$ | 150 | - | - | MHz |
| Output Capacitance at $-V_{CB}$ = 5 V, f = 1 MHz | $C_{obo}$ | - | - | 8 | pF |

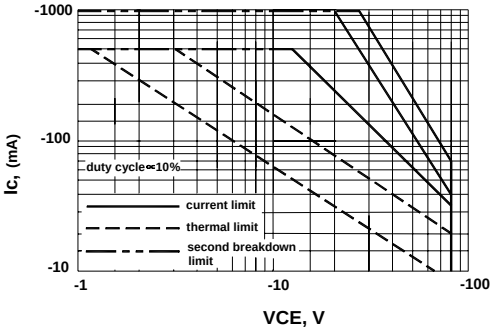
**Current gain - bandwidth product**



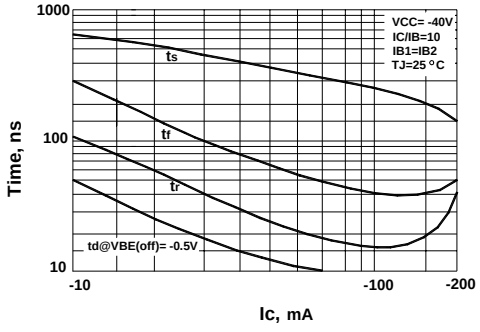

**Capacitance**



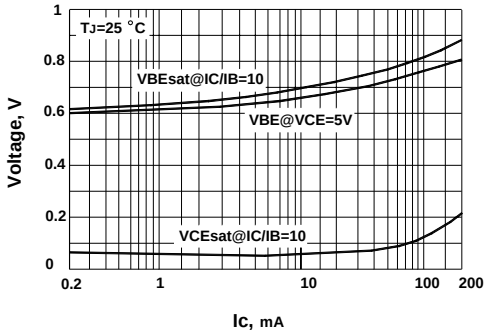

**Active - region safe operating area**



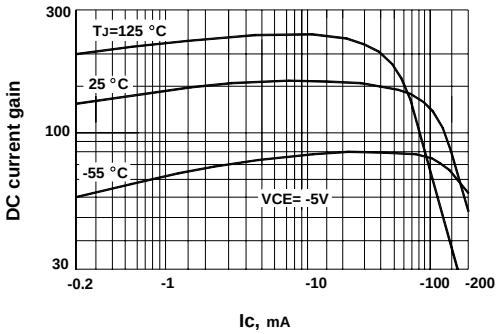

**Switching times**



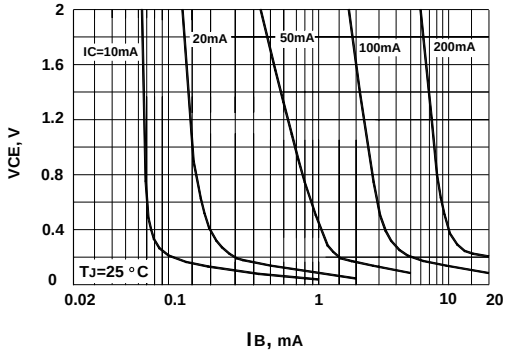

**"ON" Voltages**




**DC current gain**




**Collector saturation region**




**Base emitter temperature coefficient**