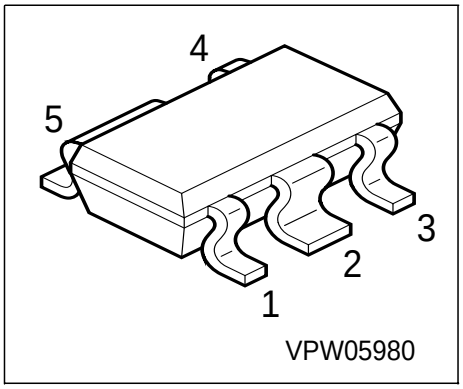
**PNP Silicon AF Power Transistor**

**Preliminary data**

- For AF driver and output stages
- High collector current
- Low collector-emitter saturation voltage




| Type | Marking | Ordering Code | Pin Configuration | | | | | Package |
|---|---|---|---|---|---|---|---|---|
| BCP 70M | PBs | Q62702-C2596 | 1 = E | 2 = C | 3 = E | 4 = B | 5 = C | SCT-595 |

**Maximum Ratings**

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Collector-emitter voltage | $V_{CEO}$ | 32 | V |
| Collector-base voltage | $V_{CBO}$ | 32 | |
| Emitter-base voltage | $V_{EBO}$ | 5 | |
| DC collector current | $I_C$ | 3 | A |
| Peak collector current | $I_{CM}$ | 6 | |
| Base current | $I_B$ | 200 | mA |
| Peak base current | $I_{BM}$ | 500 | |
| Total power dissipation, $T_S \leq 94$ °C | $P_{tot}$ | 1.7 | W |
| Junction temperature | $T_j$ | 150 | °C |
| Storage temperature | $T_{stg}$ | -65...+150 | |

**Thermal Resistance**

| | | | |
|---|---|---|---|
| Junction ambient [1)] | $R_{thJA}$ | ≤ 88 | K/W |
| Junction - soldering point | $R_{thJS}$ | ≤ 33 | |

1) Package mounted on pcb 40mm x 40mm x 1.5mm / 6cm$^2$ Cu

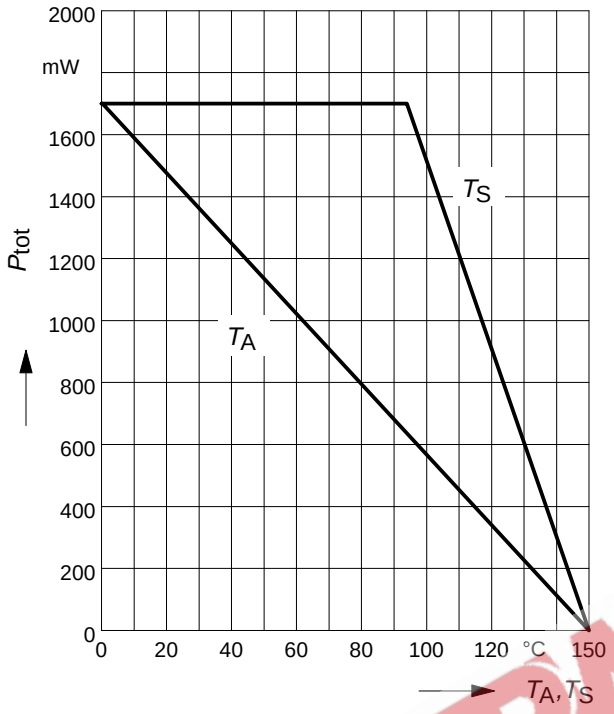
**Electrical Characteristics** at $T_A$ = 25°C, unless otherwise specified.

| Parameter | Symbol | Values | | | Unit |
|---|---|---|---|---|---|
| | | min. | typ. | max. | |
| **DC Characteristics** | | | | | |
| Collector-emitter breakdown voltage<br>$I_C$ = 100 µA, $I_B$ = 0 | $V_{(BR)CEO}$ | 32 | - | - | V |
| Collector-base breakdown voltage<br>$I_C$ = 100 µA, $I_B$ = 0 | $V_{(BR)CBO}$ | 32 | - | - | |
| Emitter-base breakdown voltage<br>$I_E$ = 10 µA, $I_C$ = 0 | $V_{(BR)EBO}$ | 5 | - | - | |
| Collector cutoff current<br>$V_{CB}$ = 30 V, $I_E$ = 0 | $I_{CBO}$ | - | - | 100 | nA |
| Collector cutoff current<br>$V_{CB}$ = 30 V, $I_E$ = 0 , $T_A$ = 150 °C | $I_{CBO}$ | - | - | 20 | µA |
| Emitter cutoff current<br>$V_{EB}$ = 4 V, $I_C$ = 0 | $I_{EBO}$ | - | - | 100 | nA |
| DC current gain 1)<br>$I_C$ = 10 mA, $V_{CE}$ = 5 V<br>$I_C$ = 500 mA, $V_{CE}$ = 1 V<br>$I_C$ = 2 A, $V_{CE}$ = 2 V | $h_{FE}$ | <br>25<br>85<br>50 | <br>-<br>-<br>- | <br>-<br>475<br>- | - |
| Collector-emitter saturation voltage1)<br>$I_C$ = 2 A, $I_B$ = 0.2 A | $V_{CEsat}$ | - | 0.18 | - | V |
| Base-emitter saturation voltage 1)<br>$I_C$ = 2 A, $I_B$ = 0.2 A | $V_{BEsat}$ | - | - | 1.2 | |
| **AC Characteristics** | | | | | |
| Transition frequency<br>$I_C$ = 50 mA, $V_{CE}$ = 10 V, $f$ = 100 MHz | $f_T$ | - | 100 | - | MHz |
| Collector-base capacitance<br>$V_{CB}$ = 10 V, $f$ = 1 MHz | $C_{cb}$ | - | 80 | - | pF |

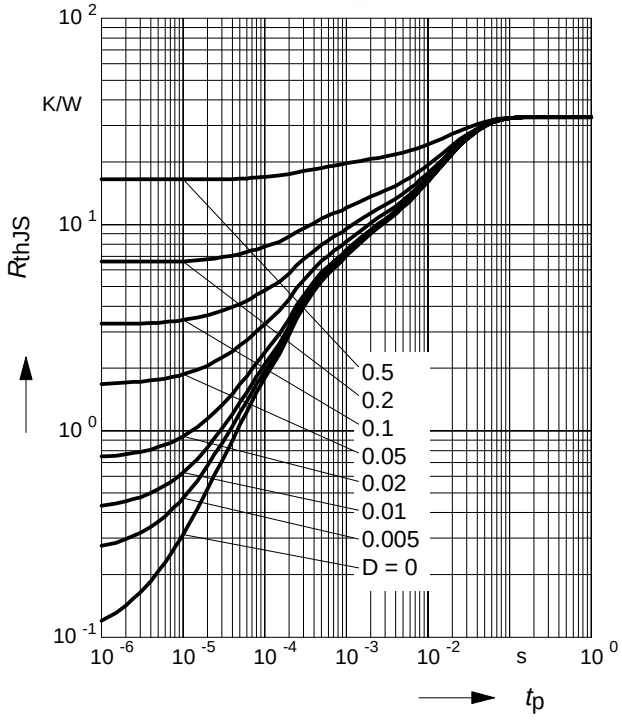
1) Pulse test: t < 300µs; D < 2%

**Total power dissipation** $P_{tot} = f(T_A^*; T_S)$

* Package mounted on epoxy

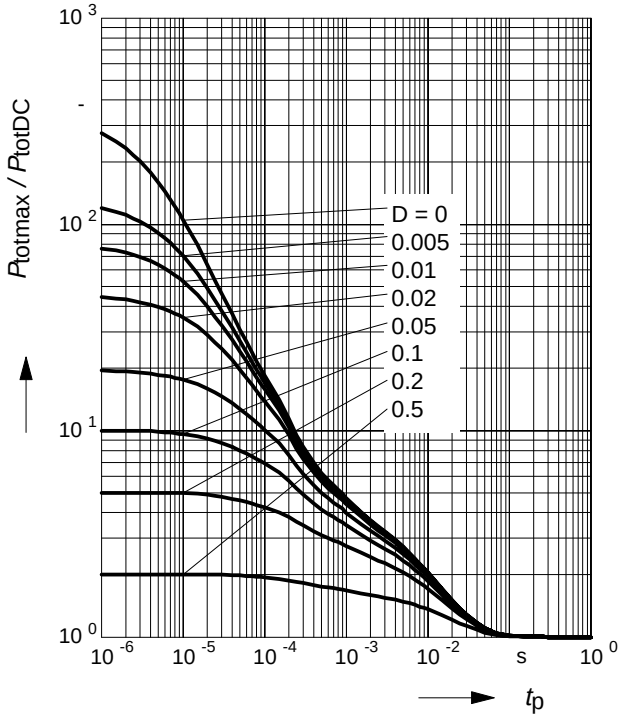



**Permissible Pulse Load** $R_{thJS} = f(t_p)$



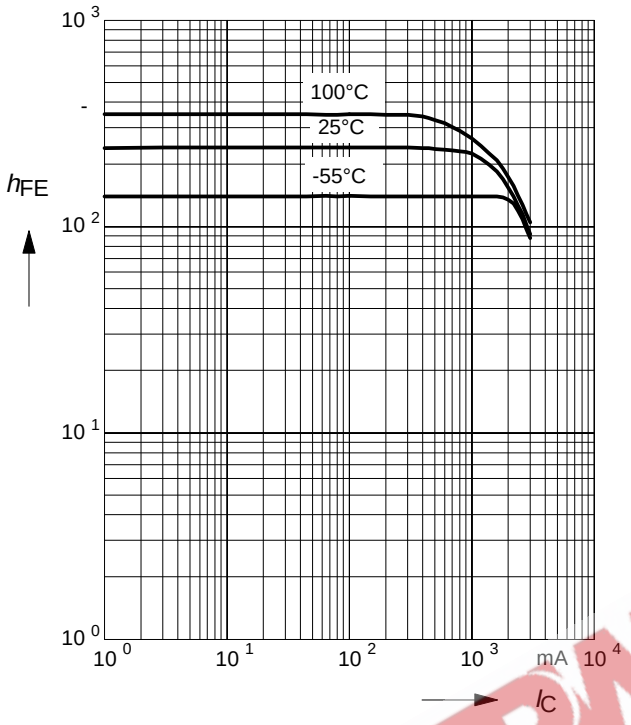

**Permissible Pulse Load**

$P_{totmax} / P_{totDC} = f(t_p)$



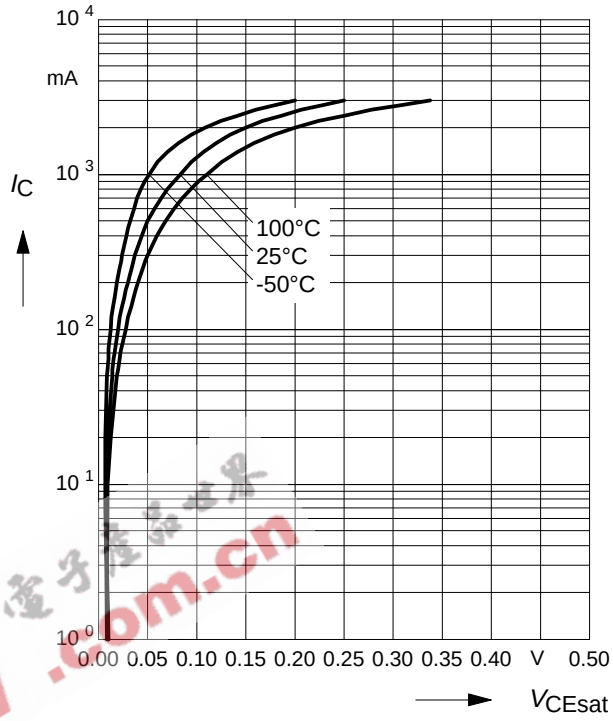
**DC current gain** $h_{FE} = f(I_C)$

$V_{CE}$ = 2V



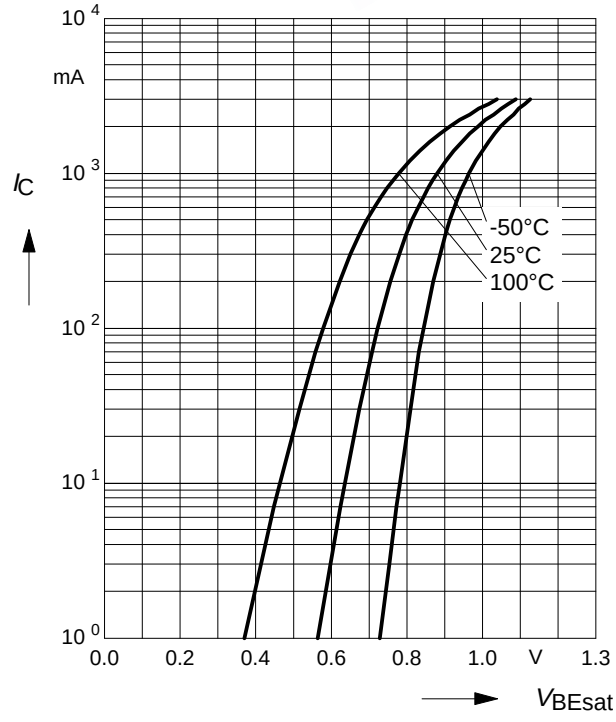

**Collector-emitter saturation voltage**

$I_C = f(V_{CEsat})$, $h_{FE}$ = 10




**Base-emitter saturation voltage**

$I_C = f(V_{BEsat})$, $h_{FE}$ = 10




**Collector current** $I_C = f(V_{BE})$

$V_{CE}$ = 2V