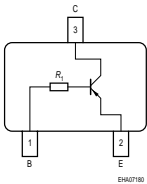


PNP Silicon Digital Transistor

- Switching circuit, inverter, interface circuit, driver circuit.
- Built in bias resistor ($R_1 = 10k\Omega$)


**BCR179F/L3
BCR179T**


| Type | Marking | Pin Configuration | | | | | | Package |
|----------|---------|-------------------|-----|-----|---|---|---|----------|
| | | 1=B | 2=E | 3=C | - | - | - | |
| BCR179F | WWs | 1=B | 2=E | 3=C | - | - | - | TSFP-3 |
| BCR179L3 | WW | 1=B | 2=E | 3=C | - | - | - | TSLP-3-4 |
| BCR179T | WWs | 1=B | 2=E | 3=C | - | - | - | SC75 |

Maximum Ratings

| Parameter | Symbol | Value | Unit |
|--|-------------|-------------------|------|
| Collector-emitter voltage | V_{CEO} | 50 | V |
| Collector-base voltage | V_{CBO} | 50 | |
| Emitter-base voltage | V_{EBO} | 5 | |
| Input on voltage | $V_{i(on)}$ | 20 | |
| Collector current | I_C | 100 | mA |
| Total power dissipation- BCR179F, $T_S \leq 128^\circ\text{C}$ BCR179L3, $T_S \leq 135^\circ\text{C}$ BCR179T, $T_S \leq 109^\circ\text{C}$ | P_{tot} | 250 250 250 | mW |
| Junction temperature | T_j | 150 | °C |
| Storage temperature | T_{stg} | 150 ... -65 | |

Thermal Resistance

| Parameter | Symbol | Value | Unit |
|--|------------|-------|------|
| Junction - soldering point ¹⁾ | R_{thJS} | | K/W |
| BCR179F | | ≤ 90 | |
| BCR179L3 | | ≤ 60 | |
| BCR179T | | ≤ 109 | |

Electrical Characteristics at $T_A = 25^\circ\text{C}$, unless otherwise specified

| Parameter | Symbol | Values | | | Unit |
|-----------|--------|--------|------|------|------|
| | | min. | typ. | max. | |

DC Characteristics

| | | | | | |
|---|---------------|-----|----|-----|------------|
| Collector-emitter breakdown voltage $I_C = 100 \mu\text{A}, I_B = 0$ | $V_{(BR)CEO}$ | 50 | - | - | V |
| Collector-base breakdown voltage $I_C = 10 \mu\text{A}, I_E = 0$ | $V_{(BR)CBO}$ | 50 | - | - | |
| Emitter-base breakdown voltage $I_E = 10 \mu\text{A}, I_C = 0$ | $V_{(BR)EBO}$ | 5 | - | - | |
| Collector-base cutoff current $V_{CB} = 40 \text{ V}, I_E = 0$ | I_{CBO} | - | - | 100 | nA |
| DC current gain ²⁾ $I_C = 5 \text{ mA}, V_{CE} = 5 \text{ V}$ | h_{FE} | 120 | - | 630 | - |
| Collector-emitter saturation voltage ²⁾ $I_C = 10 \text{ mA}, I_B = 0,5 \text{ mA}$ | V_{CEsat} | - | - | 0,3 | V |
| Input off voltage $I_C = 100 \mu\text{A}, V_{CE} = 5 \text{ V}$ | $V_{i(off)}$ | 0,4 | - | 1 | |
| Input on voltage $I_C = 2 \text{ mA}, V_{CE} = 0,3 \text{ V}$ | $V_{i(on)}$ | 0,5 | - | 1,1 | |
| Input resistor | R_1 | 7 | 10 | 13 | k Ω |

AC Characteristics

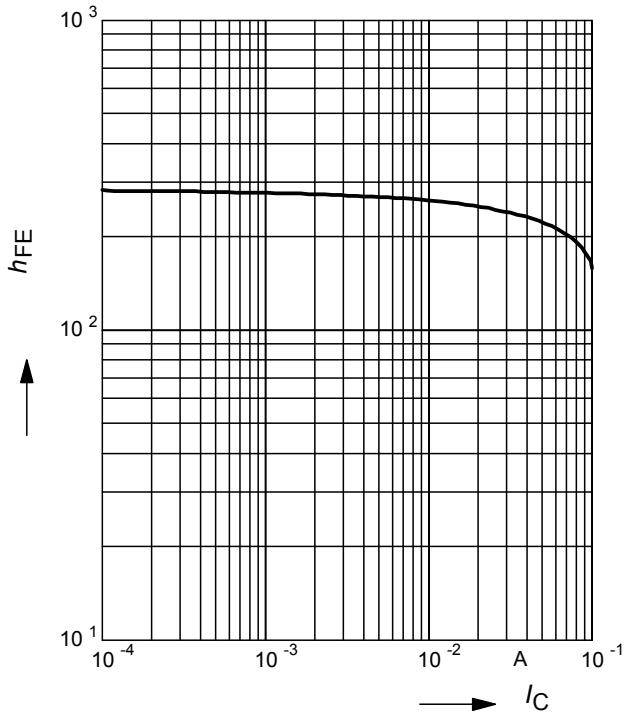
| | | | | | |
|--|----------|---|-----|---|-----|
| Transition frequency $I_C = 10 \text{ mA}, V_{CE} = 5 \text{ V}, f = 100 \text{ MHz}$ | f_T | - | 150 | - | MHz |
| Collector-base capacitance $V_{CB} = 10 \text{ V}, f = 1 \text{ MHz}$ | C_{cb} | - | 1,2 | - | pF |

¹For calculation of R_{thJA} please refer to Application Note Thermal Resistance

²Pulse test: $t < 300 \mu\text{s}; D < 2\%$

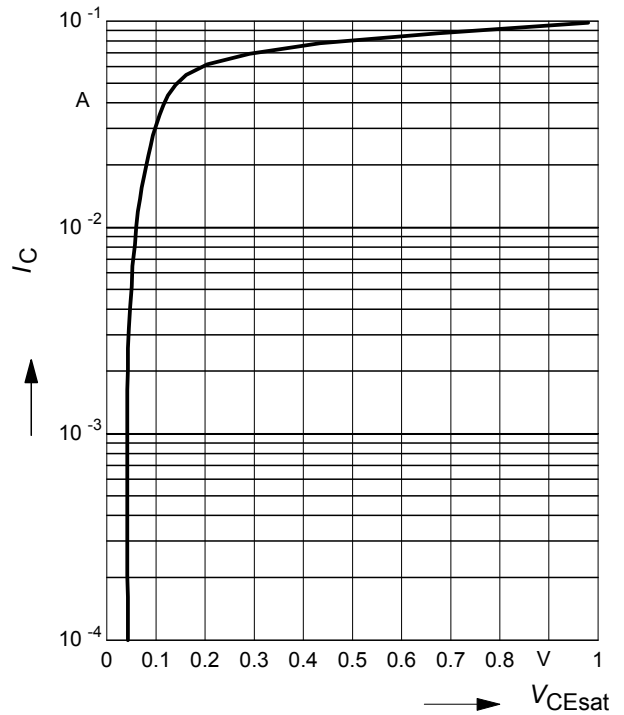
DC current gain $h_{FE} = f(I_C)$

$V_{CE} = 5\text{ V}$ (common emitter configuration)



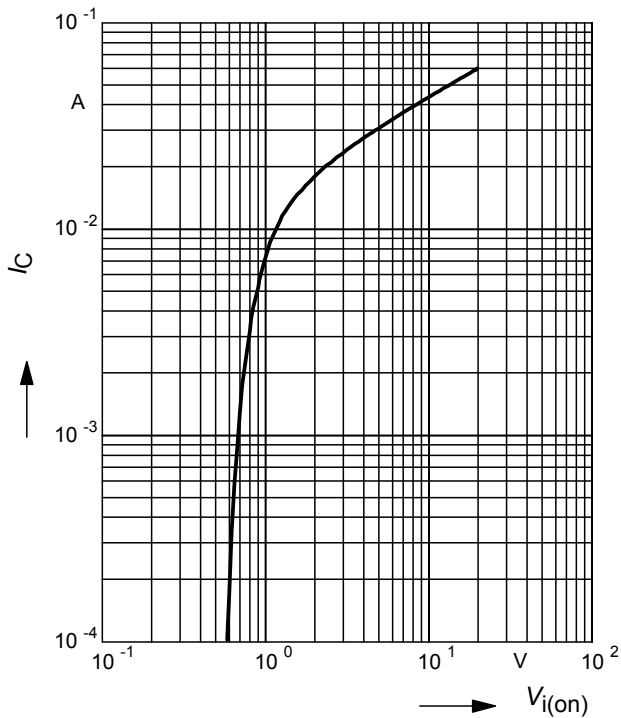
Collector-emitter saturation voltage

$V_{CEsat} = f(I_C), h_{FE} = 20$



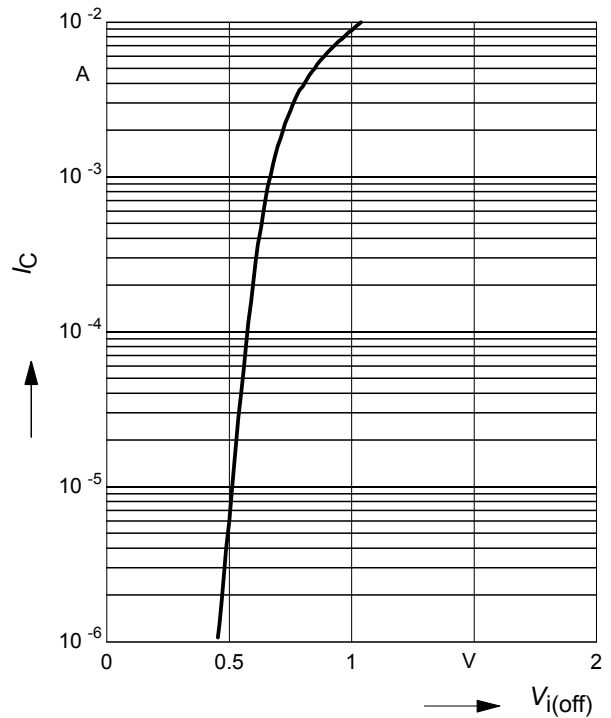
Input on Voltage $V_{i(on)} = f(I_C)$

$V_{CE} = 0.3\text{ V}$ (common emitter configuration)



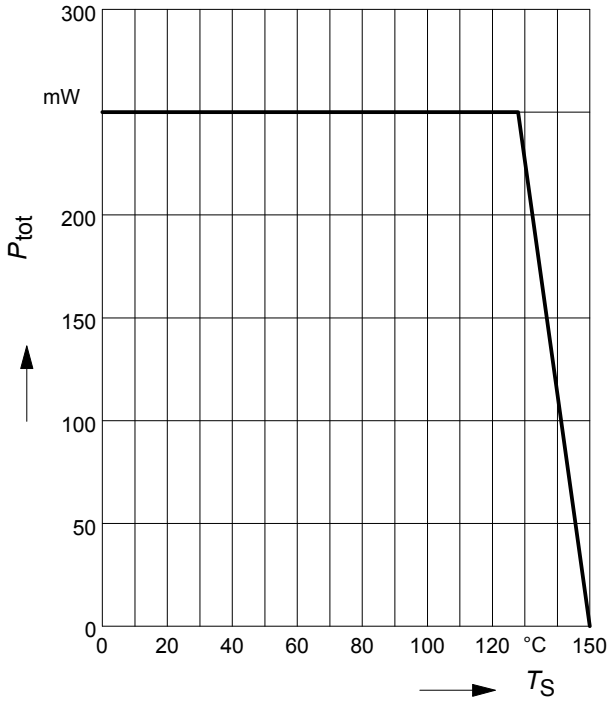
Input off voltage $V_{i(off)} = f(I_C)$

$V_{CE} = 5\text{ V}$ (common emitter configuration)



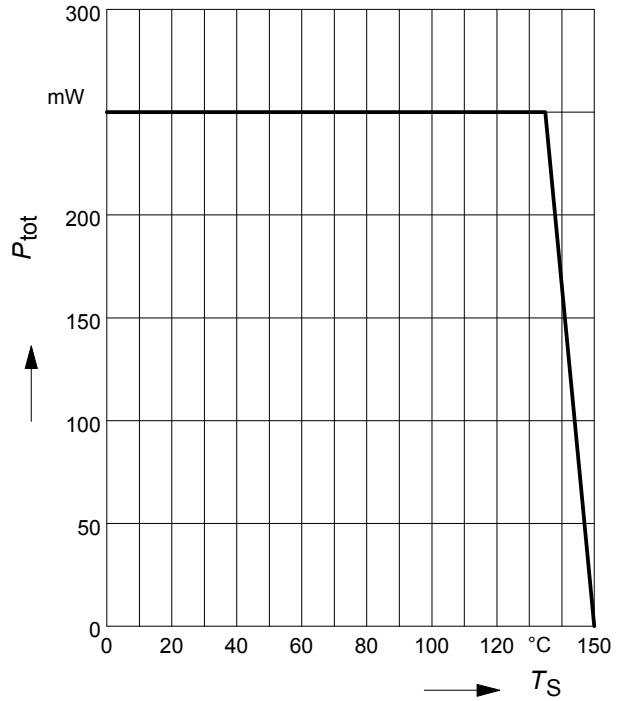
Total power dissipation $P_{tot} = f(T_S)$

BCR179F



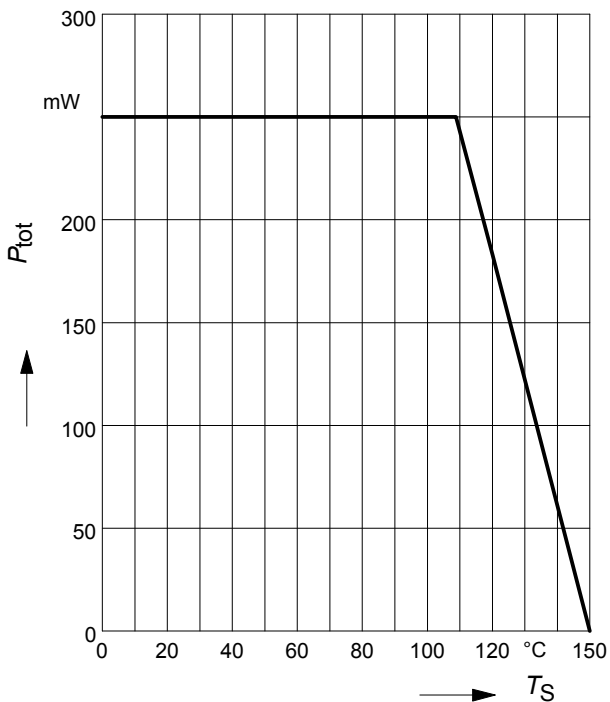
Total power dissipation $P_{tot} = f(T_S)$

BCR179L3



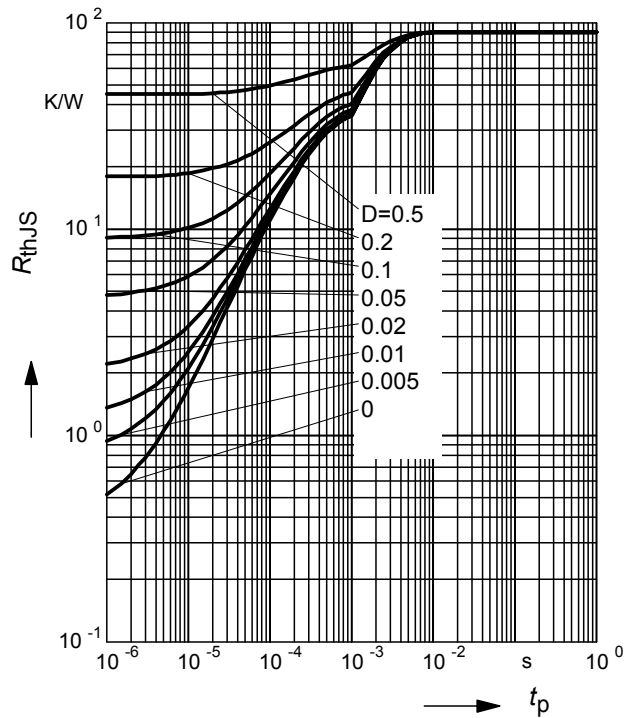
Total power dissipation $P_{tot} = f(T_S)$

BCR179T



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

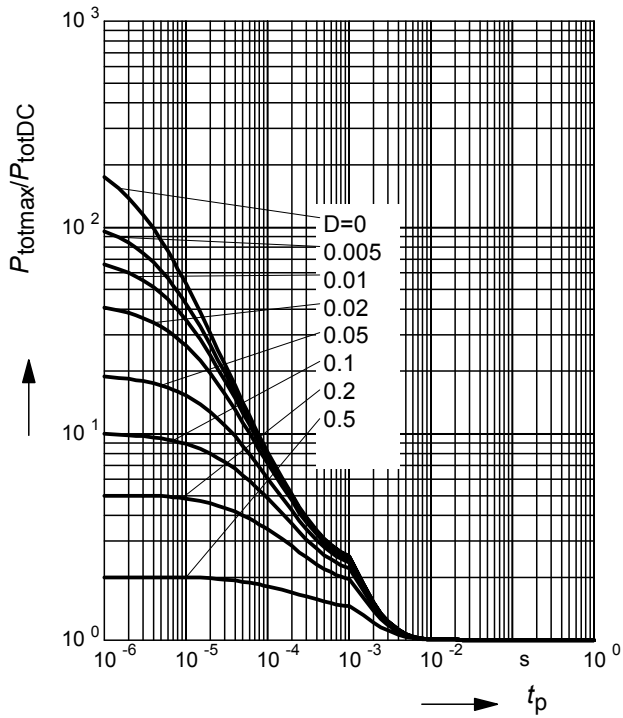
BCR179F



Permissible Pulse Load

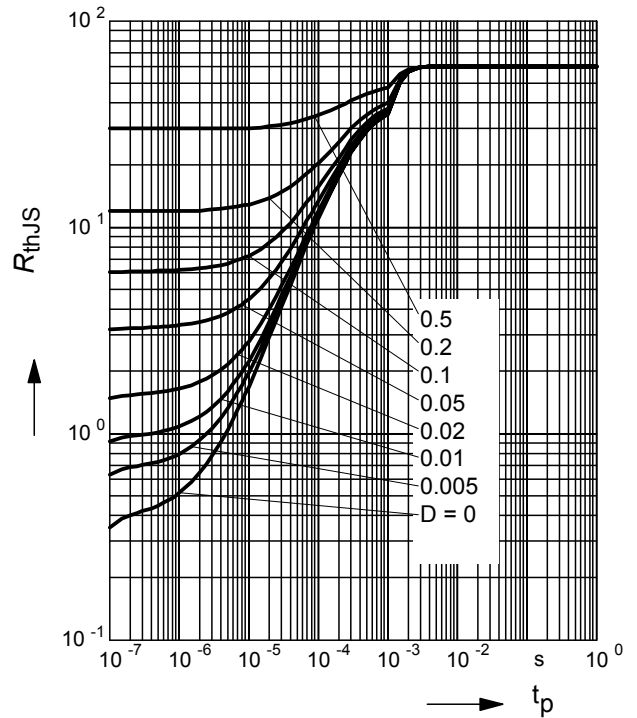
$$P_{\text{totmax}}/P_{\text{totDC}} = f(t_p)$$

BCR179F



Permissible Puls Load $R_{\text{thJS}} = f(t_p)$

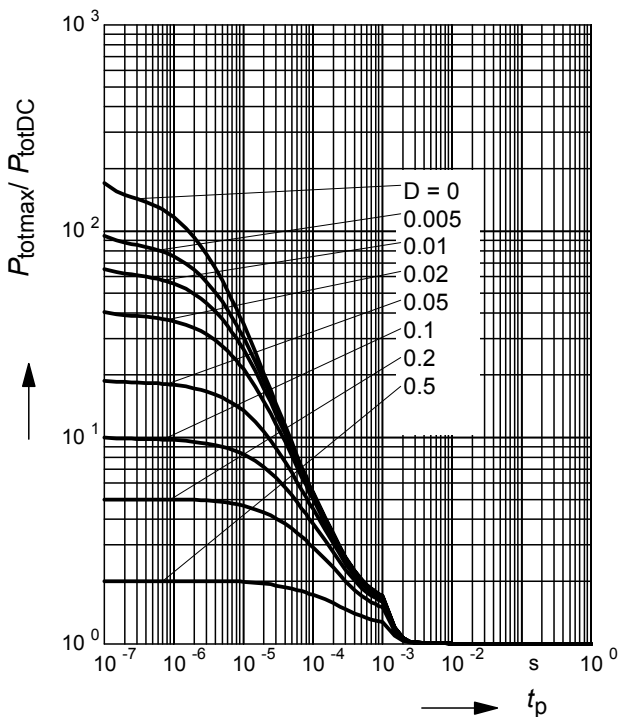
BCR179L3



Permissible Pulse Load

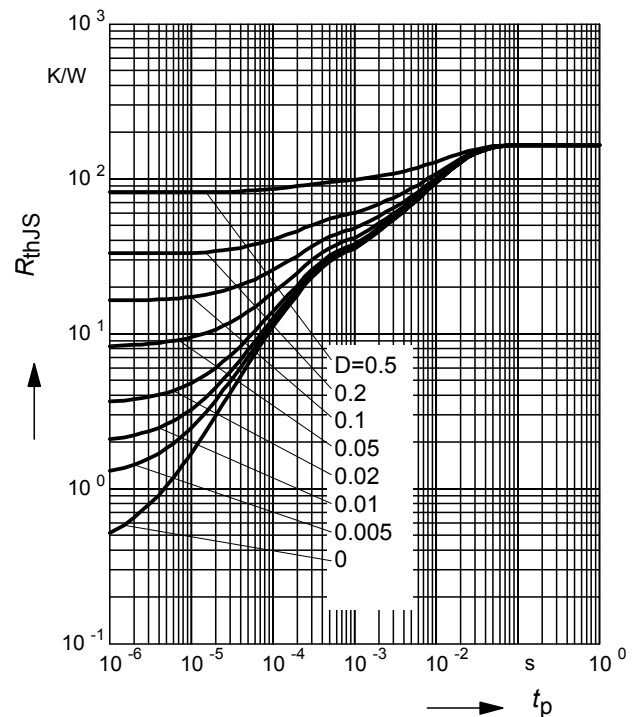
$$P_{\text{totmax}}/P_{\text{totDC}} = f(t_p)$$

BCR179L3



Permissible Puls Load $R_{\text{thJS}} = f(t_p)$

BCR179T



Permissible Pulse Load

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

BCR179T

