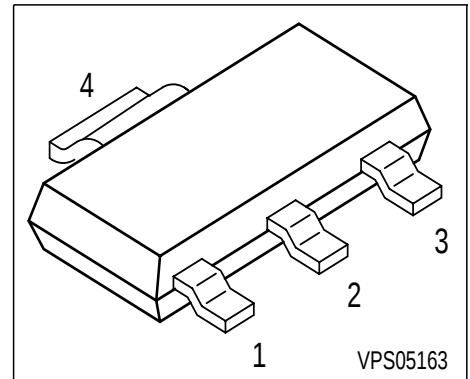


## PNP Silicon High-Voltage Transistors

- Suited for video output stages in TV sets and switching power supplies
- High breakdown voltage
- Low collector-emitter saturation voltage
- Complementary types: BFN36, BFN38 (NPN)



| Type  | Marking | Pin Configuration |       |       |       | Package |
|-------|---------|-------------------|-------|-------|-------|---------|
| BFN37 | BFN 37  | 1 = B             | 2 = C | 3 = E | 4 = C | SOT223  |
| BFN39 | BFN 39  | 1 = B             | 2 = C | 3 = E | 4 = C | SOT223  |

### Maximum Ratings

| Parameter                                      | Symbol    | BFN37       | BFN39 | Unit |
|------------------------------------------------|-----------|-------------|-------|------|
| Collector-emitter voltage                      | $V_{CEO}$ | 250         | 300   | V    |
| Collector-base voltage                         | $V_{CBO}$ | 250         | 300   |      |
| Emitter-base voltage                           | $V_{EBO}$ | 5           | 5     |      |
| DC collector current                           | $I_C$     | 200         |       | mA   |
| Peak collector current                         | $I_{CM}$  | 500         |       |      |
| Base current                                   | $I_B$     | 100         |       |      |
| Peak base current                              | $I_{BM}$  | 200         |       |      |
| Total power dissipation, $T_S = 124\text{ °C}$ | $P_{tot}$ | 1.5         |       | W    |
| Junction temperature                           | $T_j$     | 150         |       | °C   |
| Storage temperature                            | $T_{sta}$ | -65 ... 150 |       |      |

### Thermal Resistance

|                                          |            |     |     |
|------------------------------------------|------------|-----|-----|
| Junction - soldering point <sup>1)</sup> | $R_{thJS}$ | ≤17 | K/W |
|------------------------------------------|------------|-----|-----|

<sup>1)</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

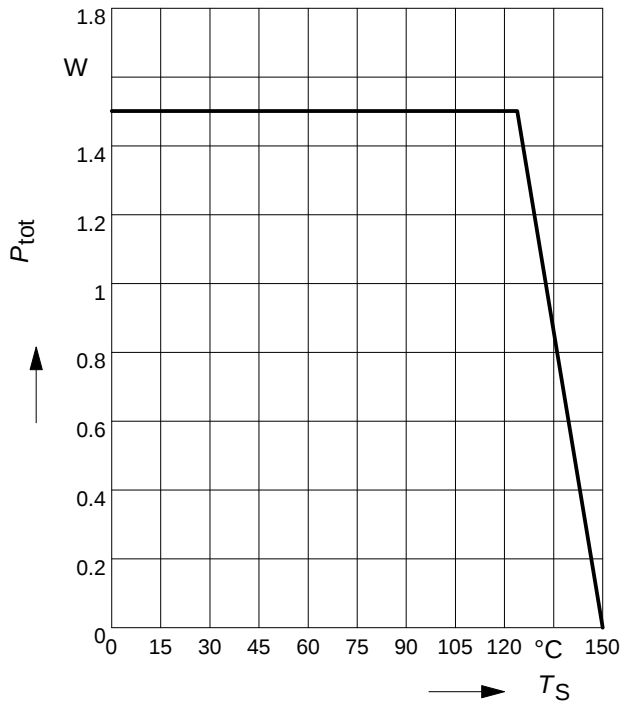
**Electrical Characteristics** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified.

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

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

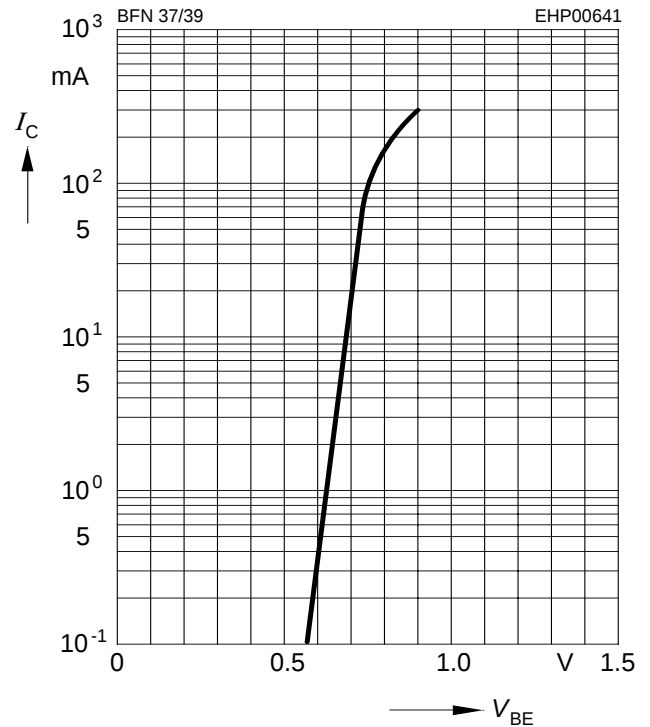
| Parameter                                                                                    | Symbol   | Values |      |      | Unit |
|----------------------------------------------------------------------------------------------|----------|--------|------|------|------|
|                                                                                              |          | min.   | typ. | max. |      |
| AC Characteristics                                                                           |          |        |      |      |      |
| Transition frequency<br>$I_C = 20\text{ mA}$ , $V_{CE} = 10\text{ V}$ , $f = 100\text{ MHz}$ | $f_T$    | -      | 100  | -    | MHz  |
| Collector-base capacitance<br>$V_{CB} = 300\text{ V}$ , $f = 1\text{ MHz}$                   | $C_{cb}$ | -      | 2.5  | -    | pF   |

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



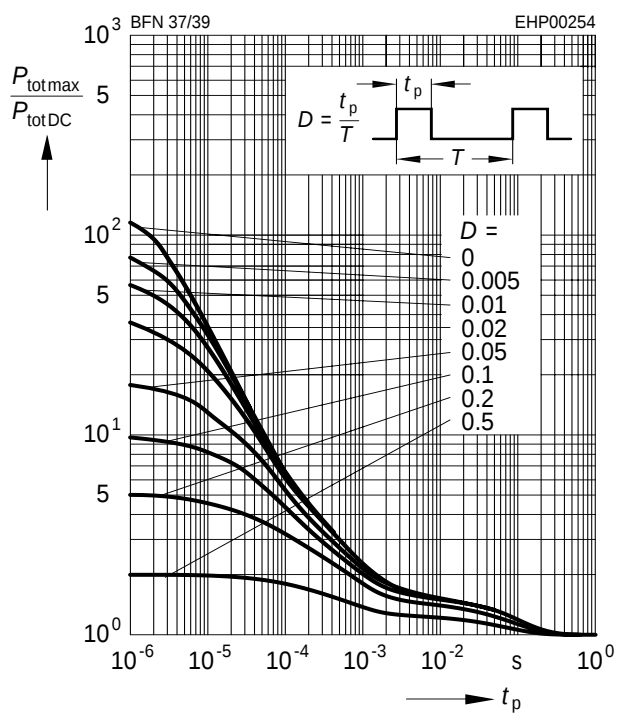
**Collector current  $I_C = f(V_{\text{BE}})$**

$V_{\text{CE}} = 10\text{V}$



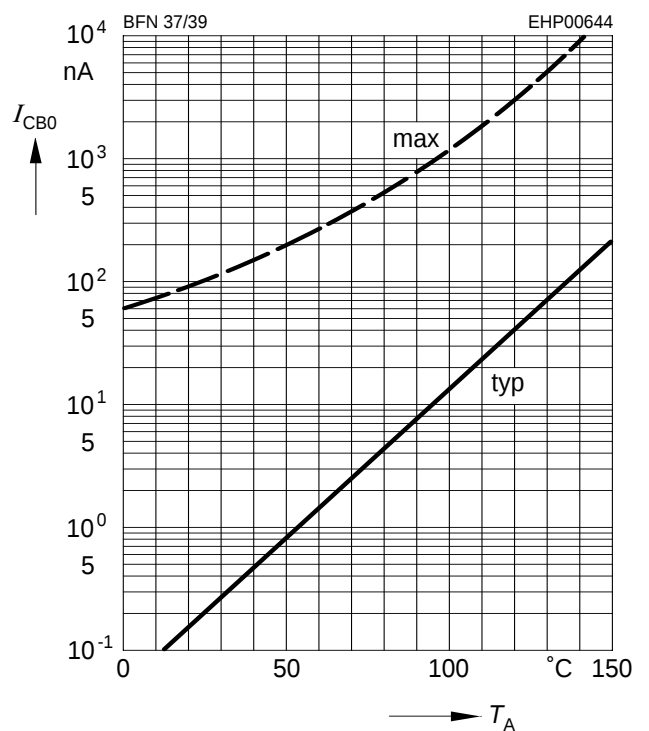
**Permissible pulse load**

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



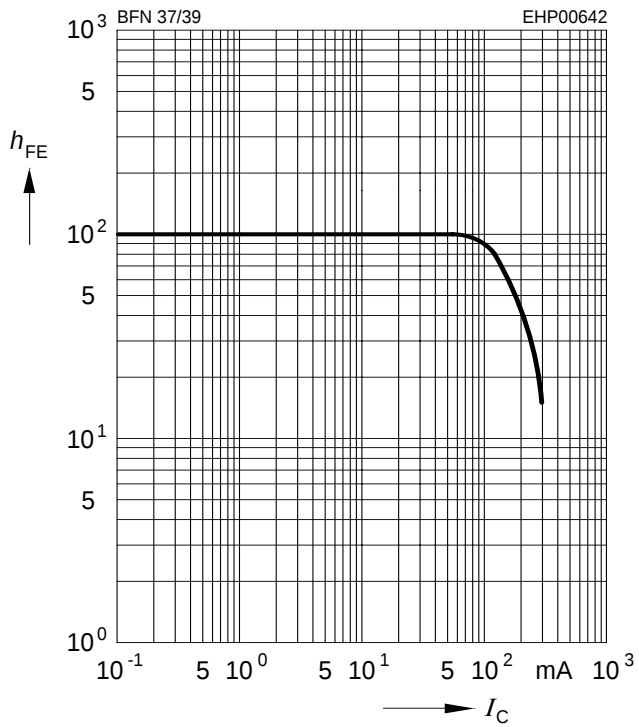
**Collector cutoff current  $I_{\text{CBO}} = f(T_A)$**

$V_{\text{CB}} = 200\text{V}$



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

$V_{CE} = 10V$



**Transition frequency  $f_T = f(I_C)$**

$V_{CE} = 10V$

