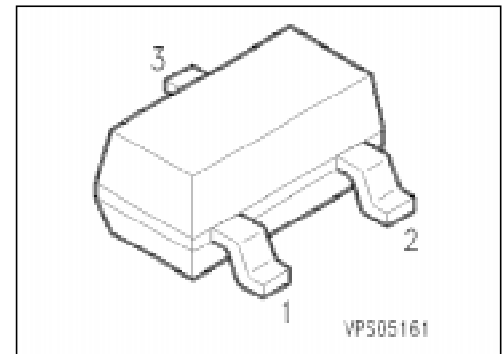


## PNP Silicon Darlington Transistors

**BCV 26**  
**BCV 46**

- For general AF applications
- High collector current
- High current gain
- Complementary types: BCV 27, BCV 47 (NPN)



| Type             | Marking    | Ordering Code<br>(tape and reel) | Pin Configuration |   |   | Package <sup>1)</sup> |
|------------------|------------|----------------------------------|-------------------|---|---|-----------------------|
|                  |            |                                  | 1                 | 2 | 3 |                       |
| BCV 26<br>BCV 46 | FDs<br>FEs | Q62702-C1493<br>Q62702-C1475     | B                 | E | C | SOT-23                |

### Maximum Ratings

| Parameter                                     | Symbol    | Values<br>BCV 26 | BCV 46 | Unit |
|-----------------------------------------------|-----------|------------------|--------|------|
| Collector-emitter voltage                     | $V_{CE0}$ | 30               | 60     | V    |
| Collector-base voltage                        | $V_{CB0}$ | 40               | 80     |      |
| Emitter-base voltage                          | $V_{EB0}$ | 10               | 10     |      |
| Collector current                             | $I_C$     | 500              |        | mA   |
| Peak collector current                        | $I_{CM}$  | 800              |        |      |
| Base current                                  | $I_B$     | 100              |        |      |
| Peak base current                             | $I_{BM}$  | 200              |        |      |
| Total power dissipation, $T_S = 74\text{ °C}$ | $P_{tot}$ | 360              |        | mW   |
| Junction temperature                          | $T_j$     | 150              |        | °C   |
| Storage temperature range                     | $T_{stg}$ | − 65 ... + 150   |        |      |

### Thermal Resistance

|                                  |              |       |     |
|----------------------------------|--------------|-------|-----|
| Junction - ambient <sup>2)</sup> | $R_{th\ JA}$ | ≤ 280 | K/W |
| Junction - soldering point       | $R_{th\ JS}$ | ≤ 210 |     |

<sup>1)</sup> For detailed information see chapter Package Outlines.

<sup>2)</sup> Package mounted on epoxy pcb 40 mm × 40 mm × 1.5 mm/6 cm<sup>2</sup> Cu.

## 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<br>$I_C = 10\text{ mA}$                                      | $V_{(BR)CE0}$ |       |   |     | V             |
| BCV 26                                                                                           |               | 30    | — | —   |               |
| BCV 46                                                                                           |               | 60    | — | —   |               |
| Collector-base breakdown voltage<br>$I_C = 100\text{ }\mu\text{A}$                               | $V_{(BR)CB0}$ |       |   |     |               |
| BCV 26                                                                                           |               | 40    | — | —   |               |
| BCV 46                                                                                           |               | 80    | — | —   |               |
| Emitter-base breakdown voltage, $I_E = 10\text{ }\mu\text{A}$                                    | $V_{(BR)EB0}$ | 10    | — | —   |               |
| Collector cutoff current<br>$V_{CB} = 30\text{ V}$                                               | $I_{CB0}$     | —     | — | 100 | nA            |
| BCV 26                                                                                           |               | —     | — | 100 | nA            |
| $V_{CB} = 60\text{ V}$                                                                           |               | —     | — | 100 | nA            |
| BCV 46                                                                                           |               | —     | — | 10  | $\mu\text{A}$ |
| $V_{CB} = 30\text{ V}, T_A = 150^\circ\text{C}$                                                  |               | —     | — | 10  | $\mu\text{A}$ |
| BCV 26                                                                                           |               | —     | — | 10  | $\mu\text{A}$ |
| BCV 46                                                                                           |               | —     | — | 10  | $\mu\text{A}$ |
| Emitter cutoff current, $V_{EB} = 4\text{ V}$                                                    | $I_{EB0}$     | —     | — | 100 | nA            |
| DC current gain <sup>1)</sup><br>$I_C = 100\text{ }\mu\text{A}, V_{CE} = 1\text{ V}$             | $h_{FE}$      | 4000  | — | —   | —             |
| BCV 26                                                                                           |               | 2000  | — | —   |               |
| BCV 46                                                                                           |               | 10000 | — | —   |               |
| $I_C = 10\text{ mA}, V_{CE} = 5\text{ V}$                                                        |               | 4000  | — | —   |               |
| BCV 26                                                                                           |               | 20000 | — | —   |               |
| BCV 46                                                                                           |               | 10000 | — | —   |               |
| $I_C = 100\text{ mA}, V_{CE} = 5\text{ V}$                                                       |               | 4000  | — | —   |               |
| BCV 26                                                                                           |               | 2000  | — | —   |               |
| BCV 46                                                                                           |               | 2000  | — | —   |               |
| Collector-emitter saturation voltage <sup>1)</sup><br>$I_C = 100\text{ mA}, I_B = 0.1\text{ mA}$ | $V_{CEsat}$   | —     | — | 1   | V             |
| Base-emitter saturation voltage <sup>1)</sup><br>$I_C = 100\text{ mA}, I_B = 0.1\text{ mA}$      | $V_{BEsat}$   | —     | — | 1.5 |               |

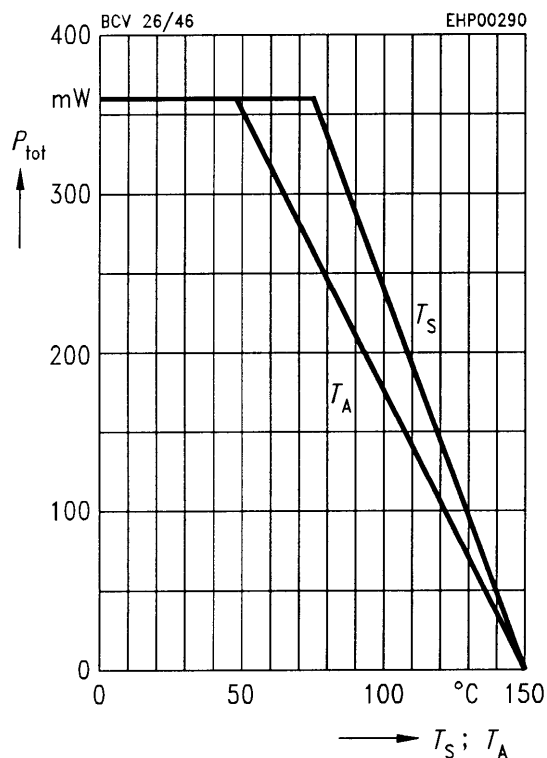
## AC characteristics

|                                                                                      |           |   |     |   |     |
|--------------------------------------------------------------------------------------|-----------|---|-----|---|-----|
| Transition frequency<br>$I_C = 50\text{ mA}, V_{CE} = 5\text{ V}, f = 20\text{ MHz}$ | $f_T$     | — | 200 | — | MHz |
| Output capacitance<br>$V_{CB} = 10\text{ V}, f = 1\text{ MHz}$                       | $C_{obo}$ | — | 4.5 | — | pF  |

<sup>1)</sup> Pulse test:  $t \leq 300\text{ }\mu\text{s}$ ,  $D = 2\%$ .

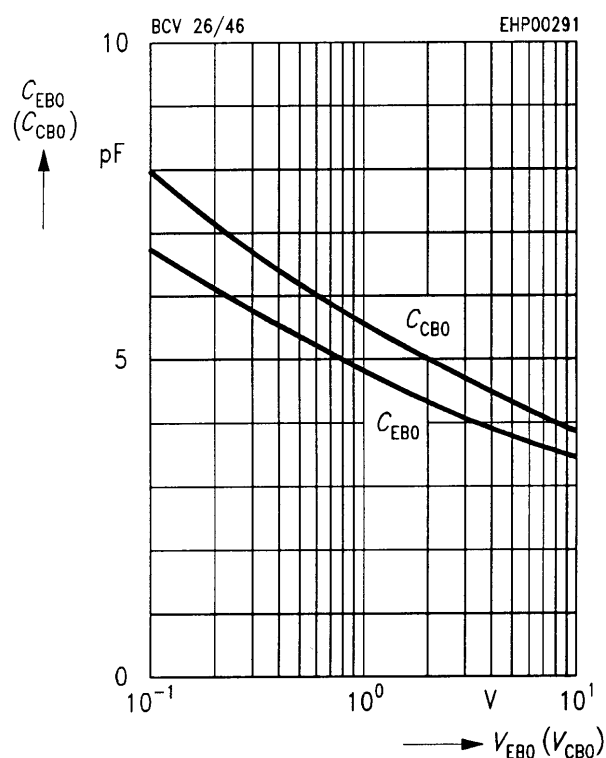
## Total power dissipation $P_{\text{tot}} = f(T_A^*; T_S)$

\* Package mounted on epoxy



## Collector-base capacitance $C_{CB0} = f(V_{CB0})$

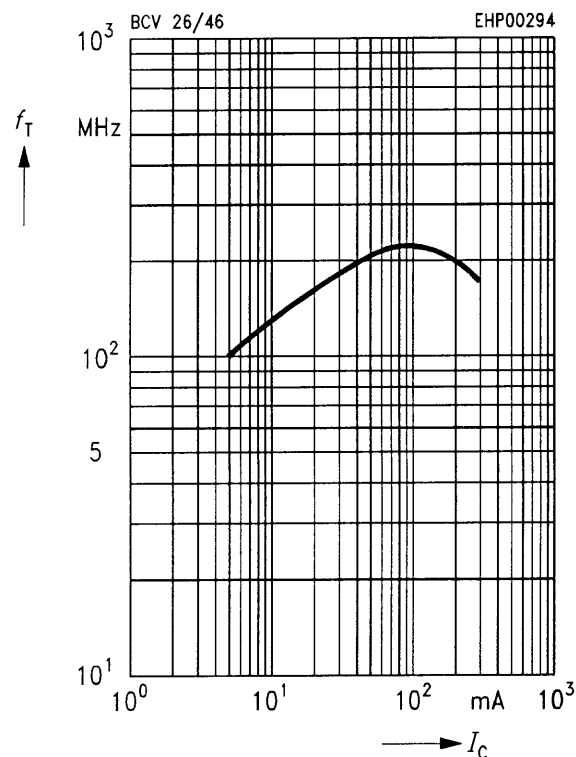
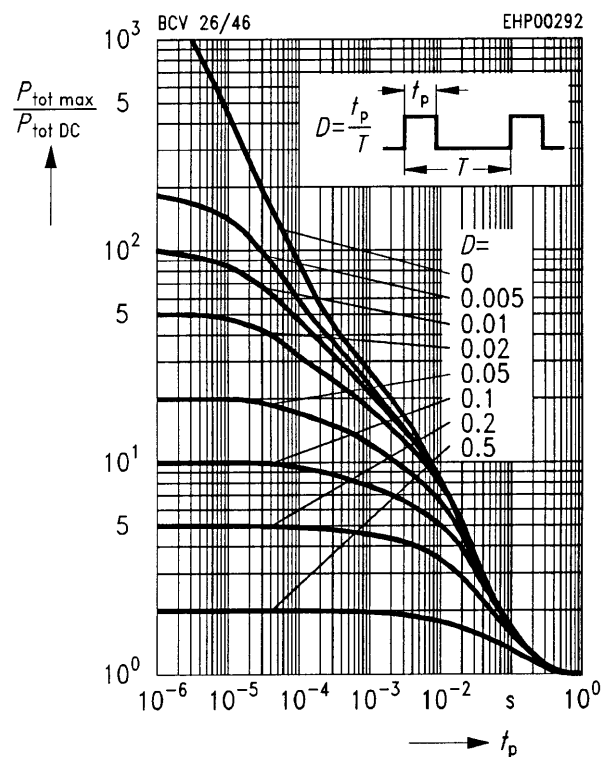
Emitter-base capacitance  $C_{EB0} = f(V_{EB0})$



## Permissible pulse load $P_{\text{tot max}}/P_{\text{tot DC}} = f(t_p)$

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

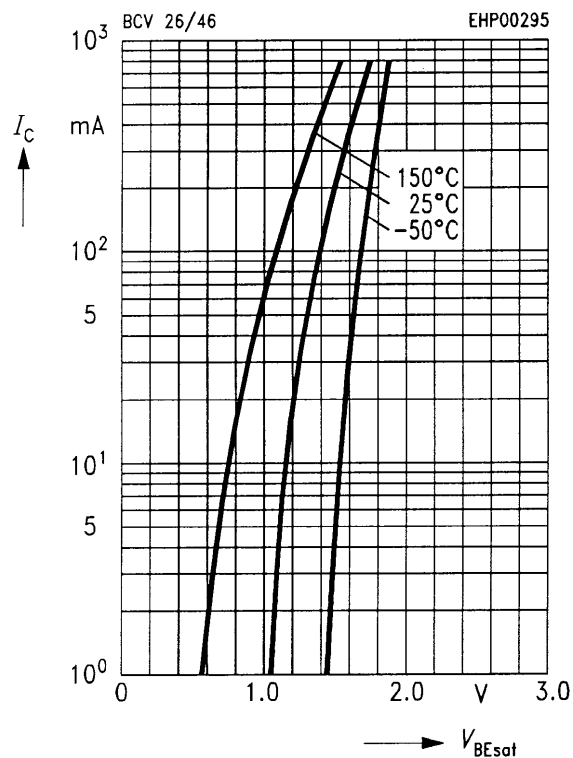
$V_{CE} = 5 \text{ V}$



## Base-emitter saturation voltage

$$I_C = f(V_{BEsat})$$

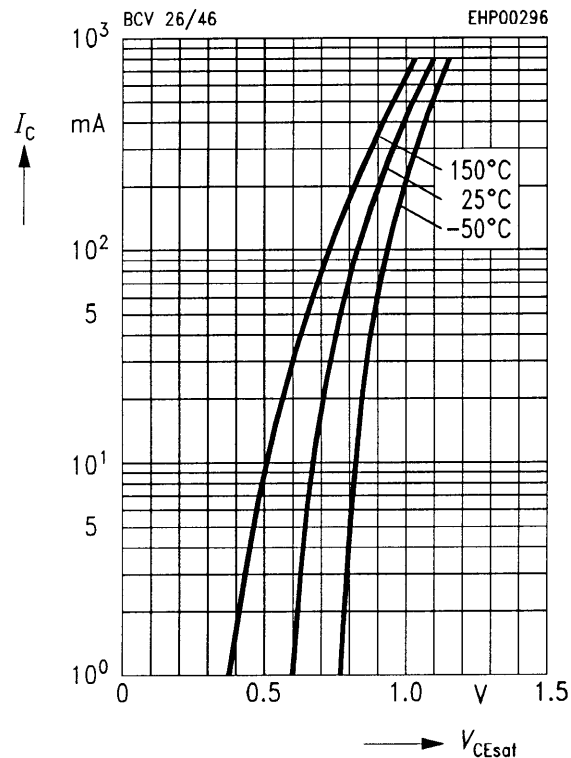
$$h_{FE} = 1000$$



## Collector-emitter saturation voltage

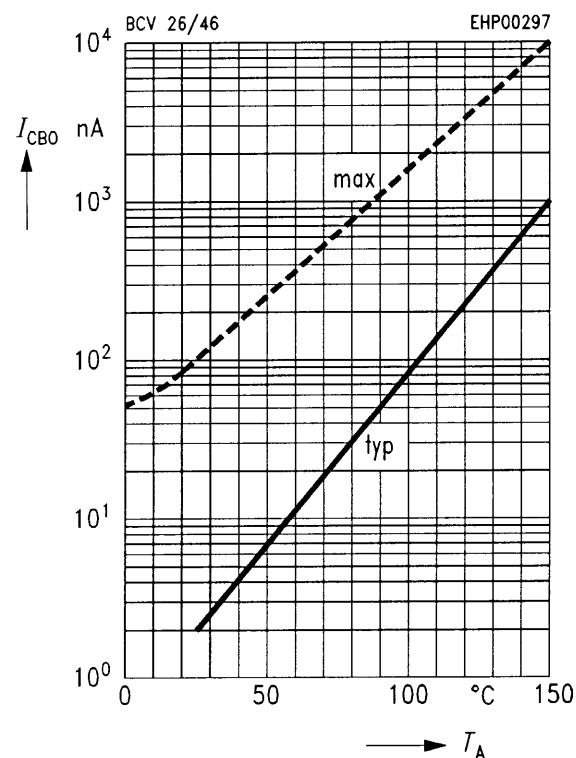
$$I_C = f(V_{CEsat})$$

$$h_{FE} = 1000$$



## Collector cutoff current $I_{CB0} = f(T_A)$

$$V_{CB} = V_{CE max}$$



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

$$V_{CE} = 5 V$$

