

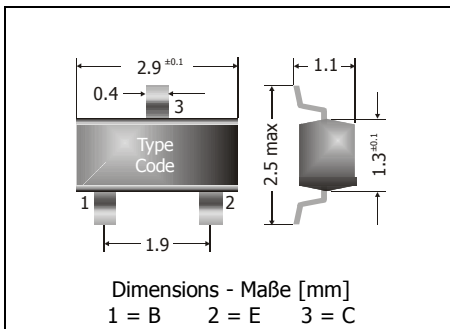
## BC817 / BC818

**NPN**

**Surface Mount General Purpose Si-Epi-Planar Transistors**  
**Si-Epi-Planar Universaltransistoren für die Oberflächenmontage**

**NPN**

Version 2007-04-13



Power dissipation – Verlustleistung

310 mW

Plastic case  
KunststoffgehäuseSOT-23  
(TO-236)

Weight approx. – Gewicht ca.

0.01 g

Plastic material has UL classification 94V-0  
Gehäusematerial UL94V-0 klassifiziertStandard packaging taped and reeled  
Standard Lieferform getupet auf Rolle
**Maximum ratings (T<sub>A</sub> = 25°C)**
**Grenzwerte (T<sub>A</sub> = 25°C)**

|  |           |                   | BC817                | BC818 |
|--|-----------|-------------------|----------------------|-------|
| Collector-Emitter-volt. – Kollektor-Emitter-Spannung | E-B short | V <sub>CES</sub>  | 50 V                 | 30 V  |
| Collector-Emitter-volt. – Kollektor-Emitter-Spannung | B open    | V <sub>CEO</sub>  | 45 V                 | 25 V  |
| Emitter-Base-voltage – Emitter-Basis-Spannung        | C open    | V <sub>EBO</sub>  | 5 V                  |       |
| Power dissipation – Verlustleistung                  |           | P <sub>tot</sub>  | 310 mW <sup>1)</sup> |       |
| Collector current – Kollektorstrom (dc)              |           | I <sub>C</sub>    | 800 mA               |       |
| Peak Collector current – Kollektor-Spitzenstrom      |           | I <sub>CM</sub>   | 1 A                  |       |
| Peak Emitter current – Emitter-Spitzenstrom          |           | - I <sub>EM</sub> | 1 A                  |       |
| Peak Base current – Basis-Spitzenstrom               |           | I <sub>BM</sub>   | 200 mA               |       |
| Junction temperature – Sperrschichttemperatur        |           | T <sub>j</sub>    | -55...+150°C         |       |
| Storage temperature – Lagerungstemperatur            |           | T <sub>S</sub>    | -55...+150°C         |       |

**Characteristics (T<sub>j</sub> = 25°C)**
**Kennwerte (T<sub>j</sub> = 25°C)**

|   |            |                    | Min. | Typ. | Max.  |
|---|------------|--------------------|------|------|-------|
| DC current gain – Kollektor-Basis-Stromverhältnis <sup>2)</sup>                       |            |                    |      |      |       |
| V <sub>CE</sub> = 1 V, I <sub>C</sub> = 100 mA  | Group -16  | h <sub>FE</sub>    | 100  | –    | 250   |
|   | Group -25  | h <sub>FE</sub>    | 160  | –    | 400   |
|   | Group -40  | h <sub>FE</sub>    | 250  | –    | 630   |
| V <sub>CE</sub> = 1 V, I <sub>C</sub> = 500 mA  | all groups | h <sub>FE</sub>    | 40   | –    | –     |
| Collector-Emitter saturation voltage – Kollektor-Emitter-Sättigungsspg. <sup>2)</sup> |            |                    |      |      |       |
| I <sub>C</sub> = 500 mA, I <sub>B</sub> = 50 mA                                       |            | V <sub>CEsat</sub> | –    | –    | 0.7 V |
| Base-Emitter saturation voltage – Basis-Emitter-Sättigungsspannung <sup>2)</sup>      |            |                    |      |      |       |
| I <sub>C</sub> = 500 mA, I <sub>B</sub> = 50 mA                                       |            | V <sub>BEsat</sub> | –    | –    | 1.3 V |

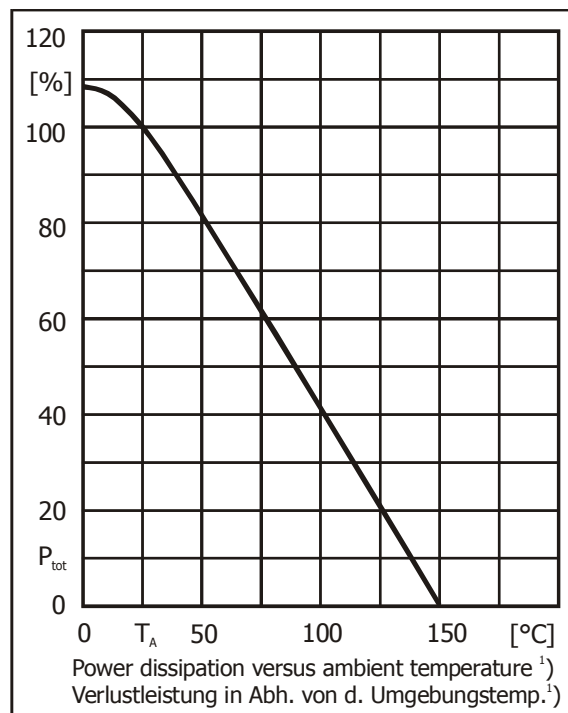
1 Valid, if leads are kept at ambient temperature at a distance of 2 mm from case

Gültig wenn die Anschlussdrähte in 2 mm Abstand vom Gehäuse auf Umgebungstemperatur gehalten werden

2 Tested with pulses t<sub>p</sub> = 300 μs, duty cycle ≤ 2% – Gemessen mit Impulsen t<sub>p</sub> = 300 μs, Schaltverhältnis ≤ 2%

**Characteristics (T<sub>j</sub> = 25°C)**
**Kennwerte (T<sub>j</sub> = 25°C)**

|   | Min.   | Typ.   | Max.   |
|---|--|--|--------|
| Base-Emitter-voltage – Basis-Emitter-Spannung <sup>2)</sup><br>V <sub>CE</sub> = 1 V, I <sub>C</sub> = 500 mA   |  |  | 1.2 V  |
| Collector-Base cutoff current – Kollektor-Basis-Reststrom<br>V <sub>CB</sub> = 20 V, (E open)<br>V <sub>CB</sub> = 20 V, T <sub>j</sub> = 125°C, (E open) | I <sub>CB0</sub>   | –  | 100 nA |
|   | I <sub>CB0</sub>   | –  | 5 μA   |
| Emitter-Base cutoff current – Emitter-Basis-Reststrom<br>V <sub>EB</sub> = 4 V, (C open)  | I <sub>EB0</sub>   | –  | 100 nA |
| Gain-Bandwidth Product – Transitfrequenz<br>V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10 mA, f = 50 MHz   | f <sub>T</sub>   | 100 MHz  | –      |
| Collector-Base Capacitance – Kollektor-Basis-Kapazität<br>V <sub>CB</sub> = 10 V, I <sub>E</sub> = i <sub>e</sub> = 0, f = 1 MHz                          | C <sub>CB0</sub>   | 12 pF  | –      |
| Thermal resistance junction to ambient air<br>Wärmewiderstand Sperrschicht – umgebende Luft   | R <sub>thA</sub>   | < 420 K/W <sup>1)</sup>  |        |
| Recommended complementary PNP transistors<br>Empfohlene komplementäre PNP-Transistoren  | BC807 / BC808  |  |        |
| Marking of available current gain groups per type<br>Stempelung der lieferbaren Stromverstärkungsgruppen pro Typ  | BC817-16 = 6A or 6CR<br>BC817-25 = 6B or 6CS<br>BC817-40 = 6C or 6CT | BC818-16 = 6E or 6CR<br>BC818-25 = 6F or 6CS<br>BC818-40 = 6G or 6CT |        |



<sup>2)</sup> Tested with pulses t<sub>p</sub> = 300 μs, duty cycle ≤ 2% – Gemessen mit Impulsen t<sub>p</sub> = 300 μs, Schaltverhältnis ≤ 2%

<sup>1)</sup> Mounted on P.C. board with 3 mm<sup>2</sup> copper pad at each terminal  
Montage auf Leiterplatte mit 3 mm<sup>2</sup> Kupferbelag (Lötpad) an jedem Anschluss