

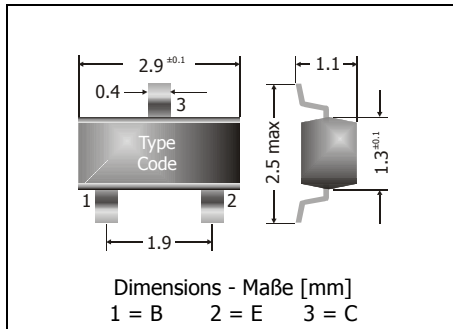
## BC846 ... BC850

**NPN**

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

**NPN**

Version 2011-07-07



Power dissipation – Verlustleistung

250 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)**

			BC846	BC847 BC850	BC848 BC849
Collector-Emitter-volt. – Kollektor-Emitter-Spannung	B open	V <sub>CEO</sub>	65 V	45 V	30 V
Collector-Base-voltage – Kollektor-Basis-Spannung	E open	V <sub>CB0</sub>	80 V	50 V	30 V
Emitter-Base-voltage – Emitter-Basis-Spannung	C open	V <sub>EBO</sub>	6 V		5 V
Power dissipation – Verlustleistung		P <sub>tot</sub>	250 mW <sup>1)</sup>		
Collector current – Kollektorstrom (dc)		I <sub>C</sub>	100 mA		
Peak Collector current – Kollektor-Spitzenstrom		I <sub>CM</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 V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10 μA	Group A	h <sub>FE</sub>	–	90	–
	Group B	h <sub>FE</sub>	–	150	–
	Group C	h <sub>FE</sub>	–	270	–
V <sub>CE</sub> = 5 V, I <sub>C</sub> = 2 mA	Group A	h <sub>FE</sub>	110	180	220
	Group B	h <sub>FE</sub>	200	290	450
	Group C	h <sub>FE</sub>	420	520	800
Collector-Emitter saturation voltage – Kollektor-Sättigungsspannung <sup>2)</sup>					
I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0.5 mA I <sub>C</sub> = 100 mA, I <sub>B</sub> = 5 mA		V <sub>CEsat</sub>	–	90 mV	250 mV
		V <sub>CEsat</sub>	–	200 mV	600 mV
Base-Emitter saturation voltage – Basis-Sättigungsspannung <sup>2)</sup>					
I <sub>C</sub> = 10 mA, I <sub>B</sub> = 0.5 mA I <sub>C</sub> = 100 mA, I <sub>B</sub> = 5 mA		V <sub>BEsat</sub>	–	700 mV	–
		V <sub>BEsat</sub>	–	900 mV	–

1 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 (Löt-pad) an jedem Anschluss

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>				
V <sub>CE</sub> = 5 V, I <sub>C</sub> = 2 mA	V <sub>BE</sub>	580 mV	660 mV	700 mV
V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10 mA	V <sub>BE</sub>	–	–	720 mV
Collector-Base cutoff current – Kollektor-Basis-Reststrom				
V <sub>CB</sub> = 30 V, (E open)	I <sub>CBO</sub>	–	–	15 nA
V <sub>CE</sub> = 30 V, T <sub>j</sub> = 125°C, (E open)	I <sub>CBO</sub>	–	–	5 µA
Emitter-Base cutoff current				
V <sub>EB</sub> = 5 V, (C open)	I <sub>EBO</sub>	–	–	100 nA
Gain-Bandwidth Product – Transitfrequenz				
V <sub>CE</sub> = 5 V, I <sub>C</sub> = 10 mA, f = 100 MHz	f <sub>T</sub>	–	300 MHz	–
Collector-Base Capacitance – Kollektor-Basis-Kapazität				
V <sub>CB</sub> = 10 V, I <sub>E</sub> = i <sub>e</sub> = 0, f = 1 MHz	C <sub>CBO</sub>	–	3.5 pF	6 pF
Emitter-Base Capacitance – Emitter-Basis-Kapazität				
V <sub>EB</sub> = 0.5 V, I <sub>C</sub> = i <sub>c</sub> = 0, f = 1 MHz	C <sub>EBO</sub>	–	9 pF	–
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft		R <sub>thA</sub>	< 420 K/W <sup>1)</sup>	
Recommended complementary PNP transistors Empfohlene komplementäre PNP-Transistoren		BC856 ... BC860		
Marking of available current gain groups Stempelung der lieferbaren Stromverstärkungsgruppen		BC846A = 1A BC846B = 1B	BC847A = 1E BC847B = 1F BC847C = 1G  BC850B = 1F BC850C = 1G	BC848A = 1E BC848B = 1F BC848C = 1G  BC849B = 1F BC849C = 1G

<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 (Löt-pad) an jedem Anschluss