

BC846 ... BC850

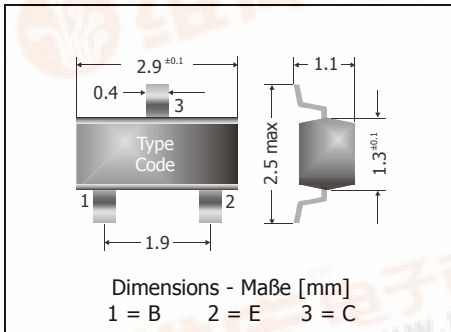
BC846 ... BC850

NPN

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

NPN

Version 2006-06-02



Power dissipation – Verlustleistung

250 mW

Plastic case
Kunststoffgehäuse

SOT-23
(TO-236)

Weight approx. – Gewicht ca.

0.01 g

Plastic material has UL classification 94V-0
Gehäusematerial UL94V-0 klassifiziert

Standard packaging taped and reeled
Standard Lieferform gegurtet auf Rolle



Maximum ratings ($T_A = 25^\circ\text{C}$)

Grenzwerte ($T_A = 25^\circ\text{C}$)

			BC846	BC847 BC850	BC848 BC849
Collector-Emitter-volt. – Kollektor-Emitter-Spannung	B open	V_{CE0}	65 V	45 V	30 V
Collector-Base-voltage – Kollektor-Basis-Spannung	E open	V_{CBO}	80 V	50 V	30 V
Emitter-Base-voltage – Emitter-Basis-Spannung	C open	V_{EB0}	6 V		5 V
Power dissipation – Verlustleistung		P_{tot}	250 mW ¹⁾		
Collector current – Kollektorstrom (dc)		I_C	100 mA		
Peak Collector current – Kollektor-Spitzenstrom		I_{CM}	200 mA		
Junction temperature – Sperrschichttemperatur		T_j	-55...+150°C		
Storage temperature – Lagerungstemperatur		T_S	-55...+150°C		

Characteristics ($T_j = 25^\circ\text{C}$)

Kennwerte ($T_j = 25^\circ\text{C}$)

			Min.	Typ.	Max.
DC current gain – Kollektor-Basis-Stromverhältnis					
$V_{CE} = 5 \text{ V}, I_C = 10 \mu\text{A}$	Group A	h_{FE}	–	90	–
	Group B	h_{FE}	–	150	–
	Group C	h_{FE}	–	270	–
$V_{CE} = 5 \text{ V}, I_C = 2 \text{ mA}$	Group A	h_{FE}	110	180	220
	Group B	h_{FE}	200	290	450
	Group C	h_{FE}	420	520	800
Collector-Emitter saturation voltage – Kollektor-Sättigungsspannung ²⁾					
$I_C = 10 \text{ mA}, I_B = 0.5 \text{ mA}$ $I_C = 100 \text{ mA}, I_B = 5 \text{ mA}$	V_{CEsat}		–	90 mV	250 mV
	V_{CEsat}		–	200 mV	600 mV
Base-Emitter saturation voltage – Basis-Sättigungsspannung ²⁾					
$I_C = 10 \text{ mA}, I_B = 0.5 \text{ mA}$ $I_C = 100 \text{ mA}, I_B = 5 \text{ mA}$	V_{BEsat}		–	700 mV	–
	V_{BEsat}		–	900 mV	–

Mounted on P.C. board with 3 mm² copper pad at each terminal

Montage auf Leiterplatte mit 3 mm² Kupferbelag (Lötpad) an jedem Anschluss

Tested with pulses $t_p = 300 \mu\text{s}$, duty cycle $\leq 2\%$ – Gemessen mit Impulsen $t_p = 300 \mu\text{s}$, Schaltverhältnis $\leq 2\%$



Characteristics ($T_j = 25^\circ\text{C}$)
Kennwerte ($T_j = 25^\circ\text{C}$)

			Min.	Typ.	Max.
Base-Emitter-voltage – Basis-Emitter-Spannung ²⁾					
V _{CE} = 5 V, I _C = 2 mA	V _{BE}		580 mV	660 mV	700 mV
V _{CE} = 5 V, I _C = 10 mA	V _{BE}		–	–	720 mV
Collector-Base cutoff current – Kollektor-Basis-Reststrom					
V _{CB} = 30 V, (E open)	I _{CB0}		–	–	15 nA
V _{CE} = 30 V, T _j = 125°C, (E open)	I _{CB0}		–	–	5 µA
Emitter-Base cutoff current					
V _{EB} = 5 V, (C open)	I _{EB0}		–	–	100 nA
Gain-Bandwidth Product – Transitfrequenz					
V _{CE} = 5 V, I _C = 10 mA, f = 100 MHz	f _T		–	300 MHz	–
Collector-Base Capacitance – Kollektor-Basis-Kapazität					
V _{CB} = 10 V, I _E = i _e = 0, f = 1 MHz	C _{CB0}		–	3.5 pF	6 pF
Emitter-Base Capacitance – Emitter-Basis-Kapazität					
V _{EB} = 0.5 V, I _C = i _c = 0, f = 1 MHz	C _{EB0}		–	9 pF	–
Noise figure – Rauschzahl					
V _{CE} = 5 V, I _C = 200 µA, R _G = 2 kΩ	BC846 ... BC848	F	–	2 dB	10 dB
f = 1 kHz, Δf = 200 Hz	BC849 ... BC850	F	–	1.2 dB	4 dB
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft		R _{thA}	< 420 K/W ¹⁾		
Recommended complementary PNP transistors Empfohlene komplementäre PNP-Transistoren			BC856 ... BC859		
Marking of available current gain groups per type Stempelung der lieferbare Stromverstärkungs- gruppen pro Typ	BC846A = 1A BC847A = 1E BC848A = 1J	BC846B = 1B BC847B = 1F BC848B = 1K BC849B = 2B BC850B = 2F	BC847C = 1G BC848C = 1L BC849C = 2C BC850C = 2G		

²⁾ Tested with pulses $t_p = 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$ – Gemessen mit Impulsen $t_p = 300\text{ }\mu\text{s}$, Schaltverhältnis $\leq 2\%$

¹⁾ Mounted on P.C. board with 3 mm² copper pad at each terminal
Montage auf Leiterplatte mit 3 mm² Kupferbelag (Lötpad) an jedem Anschluss