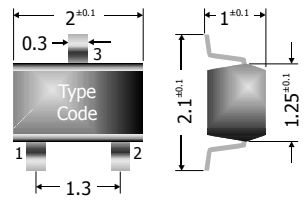
Diotec Semiconductor

BC846W ... BC849W

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

Version 2011-07-07



Dimensions - Maße [mm]
1 = B 2 = E 3 = C

Power dissipation – Verlustleistung	200 mW
Plastic case Kunststoffgehäuse	SOT-323
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°C) Grenzwerte (T_A = 25°C)

			BC846W	BC847W	BC848W BC849W
Collector-Emitter-volt. – Kollektor-Emitter-Spannung	B open	V_{CEO}	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_{EBO}	6 V		5 V
Power dissipation – Verlustleistung		P_{tot}	200 mW [1])		
Collector current – Kollektorstrom (dc)		I_C	100 mA		
Peak Collector current – Kollektor-Spitzenstrom		I_{CM}	200 mA		
Peak Base current – Basis-Spitzenstrom		I_{BM}	200 mA		
Peak Emitter current – Emitter-Spitzenstrom		$-I_{EM}$	200 mA		
Junction temperature – Sperrschichttemperatur Storage temperature – Lagerungstemperatur		T_j T_S	-55...+150°C -55...+150°C		

Characteristics (T_j = 25°C) Kennwerte (T_j = 25°C)

			Min.	Typ.	Max.
DC current gain – Kollektor-Basis-Stromverhältnis					
V_{CE} = 5 V, I_C = 10 µA	Group A	h_{FE}	–	90	–
	Group B	h_{FE}	–	150	–
	Group C	h_{FE}	–	270	–
V_{CE} = 5 V, I_C = 2 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 mA, I_B = 0.5 mA		V_{CEsat}	–	90 mV	250 mV
I_C = 100 mA, I_B = 5 mA		V_{CEsat}	–	200 mV	600 mV

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
2 Tested with pulses t_p = 300 µs, duty cycle ≤ 2% – Gemessen mit Impulsen t_p = 300 µs, Schaltverhältnis ≤ 2%

Characteristics (T_j = 25°C) **Kennwerte (T_j = 25°C)**

		Min.	Typ.	Max.
Base-Emitter saturation voltage – Basis-Sättigungsspannung [2]				
I_C = 10 mA, I_B = 0.5 mA	V_{BEsat}	–	700 mV	–
I_C = 100 mA, I_B = 5 mA	V_{BEsat}	–	900 mV	–
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_{CBO}	–	–	15 nA
V_{CE} = 30 V, T_j = 125°C, (E open)	I_{CBO}	–	–	5 µA
Emitter-Base cutoff current				
V_{EB} = 5 V, (C open)	I_{EBO}	–	–	100 nA
Gain-Bandwidth Product – Transitfrequenz				
V_{CE} = 5 V, I_C = 10 mA, f = 100 MHz	f_T	100 MHz	–	–
Collector-Base Capacitance – Kollektor-Basis-Kapazität				
V_{CB} = 10 V, I_E = i_e = 0, f = 1 MHz	C_{CBO}	–	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_{EBO}	–	9 pF	–
Noise figure – Rauschzahl				
V_{CE} = 5 V, I_C = 200 µA, R_G = 2 kΩ BC846W ... BC848W	F	–	2 dB	10 dB
f = 1 kHz, Δf = 200 Hz BC849W	F	–	1.2 dB	4 dB
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft	R_{thA}	< 620 K/W [1]		
Recommended complementary PNP transistors Empfohlene komplementäre PNP-Transistoren		BC856W ... BC859W		

Marking of available current gain groups per type Stempelung der lieferbare Stromverstärkungs-gruppen pro Typ	BC846AW = 1A BC847AW = 1E BC848AW = 1J	BC846BW = 1B BC847BW = 1F BC848BW = 1K BC849BW = 2B	BC847CW = 1G BC848CW = 1L BC849CW = 2C

2 Tested with pulses t_p = 300 µs, duty cycle ≤ 2% – Gemessen mit Impulsen t_p = 300 µs, Schaltverhältnis ≤ 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