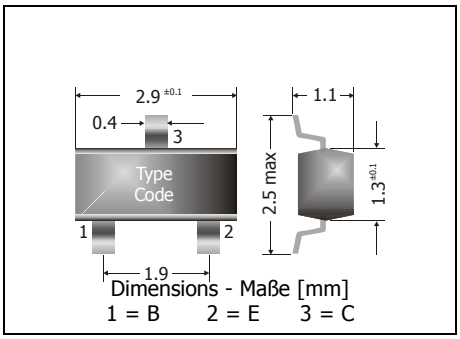
Diotec Semiconductor

BCW60A ... BCW60D

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

Version 2006-07-31



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°C) Grenzwerte (T_A = 25°C)

			BCW60A ... BCW60D
Collector-Emitter-volt. – Kollektor-Emitter-Spannung	B open	V_{CEO}	32 V
Collector-Base-voltage – Kollektor-Basis-Spannung	E open	V_{CBO}	32 V
Collector-Base-voltage – Kollektor-Basis-Spannung	C open	V_{EB0}	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
Peak Base current – Basis-Spitzenstrom		I_{BM}	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 [2]					
V_{CE} = 5 V, I_C = 10 µA	BCW60A	h_{FE}	20	140	–
	BCW60B	h_{FE}	20	200	–
	BCW60C	h_{FE}	40	300	–
	BCW60D	h_{FE}	100	460	–
V_{CE} = 5 V, I_C = 2 mA	BCW60A	h_{FE}	120	170	220
	BCW60B	h_{FE}	180	250	310
	BCW60C	h_{FE}	250	350	460
	BCW60D	h_{FE}	380	500	630
V_{CE} = 1 V, I_C = 50 mA	BCW60A	h_{FE}	50	–	–
	BCW60B	h_{FE}	70	–	–
	BCW60C	h_{FE}	90	–	–
	BCW60D	h_{FE}	100	–	–

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.**
Collector-Emitter saturation voltage – Kollektor-Sättigungsspannung [2]				
I_C = 10 mA, I_B = 0.25 mA	V_{CEsat}	–	120 mV	250 mV
I_C = 50 mA, I_B = 1.25 mA	V_{CEsat}	–	200 mV	550 mV
Base-Emitter saturation voltage – Basis-Sättigungsspannung [2]				
I_C = 10 mA, I_B = 0.25 mA	V_{BEsat}	–	700 mV	850 mV
I_C = 50 mA, I_B = 1.25 mA	V_{BEsat}	–	830 mV	1050 mV
Base-Emitter-voltage – Basis-Emitter-Spannung [2]				
I_C = 10 µA, V_{CE} = 5 V	V_{BE}	–	520 mV	–
I_C = 2 mA, V_{CE} = 5 V	V_{BE}	550 mV	650 mV	750 mV
I_C = 50 mA, V_{CE} = 1 V	V_{BE}	–	780 mV	–
Collector-Base cutoff current – Kollektor-Basis-Reststrom				
V_{CB} = 30 V, (E open)	I_{CB0}	–	–	20 nA
V_{CE} = 30 V, T_j = 125°C, (E open)	I_{CB0}	–	–	20 µA
Emitter-Base cutoff current				
V_{EB} = 4 V, (C open)	I_{EB0}	–	–	20 nA
Gain-Bandwidth Product – Transitfrequenz				
V_{CE} = 5 V, I_C = 10 mA, f = 100 MHz	f_T	100 MHz	250 MHz	–
Collector-Base Capacitance – Kollektor-Basis-Kapazität				
V_{CB} = 10 V, I_E = i_e = 0, f = 1 MHz	C_{CBO}	–	2 pF	–
Emitter-Base Capacitance – Emitter-Basis-Kapazität				
V_{EB} = 10 V, I_C = i_c = 0, f = 1 MHz	C_{EBO}	–	11 pF	–
Noise figure – Rauschzahl				
V_{CE} = 5 V, I_C = 200 µA, R_G = 2 kΩ f = 1 kHz, Δf = 200 Hz	F	–	2 dB	6 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		BCW61A ... BCW61D		
Marking - Stempelung		BCW60A = AA BCW60B = AB BCW60C = AC BCW60D = AD		

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