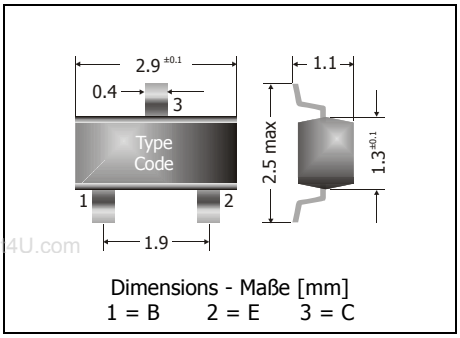
Diotec Semiconductor

BCW61A ... BCW61D

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

Version 2006-07-31



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

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	

RoHS Pb WEEE ELV

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	BCW61A	h_{FE}	20	140	–
	BCW61B	h_{FE}	30	200	–
	BCW61C	h_{FE}	40	300	–
	BCW61D	h_{FE}	100	460	–
$-V_{CE}$ = 5 V, $-I_C$ = 2 mA	BCW61A	h_{FE}	120	170	220
	BCW61B	h_{FE}	180	250	310
	BCW61C	h_{FE}	250	350	460
	BCW61D	h_{FE}	380	500	630
$-V_{CE}$ = 1 V, $-I_C$ = 50 mA	BCW61A	h_{FE}	60	–	–
	BCW61B	h_{FE}	80	–	–
	BCW61C	h_{FE}	100	–	–
	BCW61D	h_{FE}	110	–	–

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}	–	4.5 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 NPN transistors Empfohlene komplementäre NPN-Transistoren		BCW60A ... BCW60D		
Marking - Stempelung		BCW61A = BA BCW61B = BB BCW61C = BC BCW61D = BD		

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