

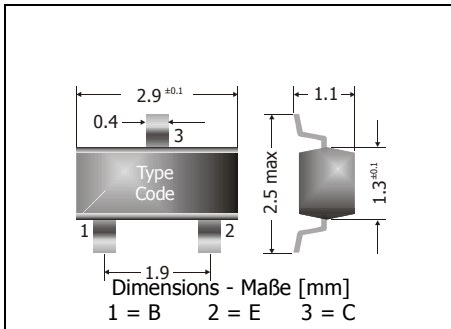
BCW60A ... BCW60D

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

			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		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 ²⁾					
$V_{CE} = 5\text{ V}, I_C = 10\ \mu\text{A}$	BCW60A	h_{FE}	20	140	–
	BCW60B	h_{FE}	20	200	–
	BCW60C	h_{FE}	40	300	–
	BCW60D	h_{FE}	100	460	–
$V_{CE} = 5\text{ V}, I_C = 2\text{ mA}$	BCW60A	h_{FE}	120	170	220
	BCW60B	h_{FE}	180	250	310
	BCW60C	h_{FE}	250	350	460
	BCW60D	h_{FE}	380	500	630
$V_{CE} = 1\text{ V}, I_C = 50\text{ mA}$	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 $t_p = 300\ \mu\text{s}$, duty cycle $\leq 2\%$ – Gemessen mit Impulsen $t_p = 300\ \mu\text{s}$, Schaltverhältnis $\leq 2\%$

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

	Min.	Typ.	Max.
Collector-Emitter saturation voltage – Kollektor-Sättigungsspannung ²⁾ I _C = 10 mA, I _B = 0.25 mA I _C = 50 mA, I _B = 1.25 mA	V _{CEsat} V _{CEsat}	– 120 mV 200 mV	250 mV 550 mV
Base-Emitter saturation voltage – Basis-Sättigungsspannung ²⁾ I _C = 10 mA, I _B = 0.25 mA I _C = 50 mA, I _B = 1.25 mA	V _{BEsat} V _{BEsat}	– 700 mV 830 mV	850 mV 1050 mV
Base-Emitter-voltage – Basis-Emitter-Spannung ²⁾ I _C = 10 μA, V _{CE} = 5 V I _C = 2 mA, V _{CE} = 5 V I _C = 50 mA, V _{CE} = 1 V	V _{BE} V _{BE} V _{BE}	– 550 mV –	520 mV 650 mV 780 mV
Collector-Base cutoff current – Kollektor-Basis-Reststrom V _{CB} = 30 V, (E open) V _{CE} = 30 V, T _j = 125°C, (E open)	I _{CB0} I _{CB0}	– –	20 nA 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 _{CB0}	–	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 (Löt-pad) an jedem Anschluss