

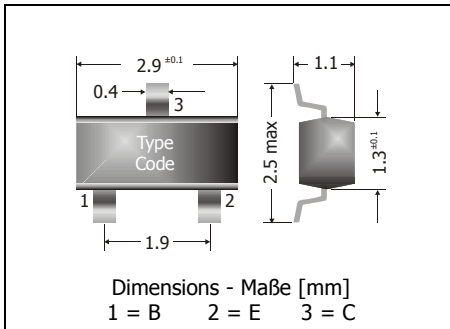
BCW31 ... BCW33

NPN

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

NPN

Version 2006-07-28



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

			BCW31	BCW32	BCW33
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 $V_{CE} = 5\text{ V}, I_C = 10\ \mu\text{A}$	BCW31	h_{FE}	–	90	–
	BCW32	h_{FE}	–	150	–
	BCW33	h_{FE}	–	270	–
$V_{CE} = 5\text{ V}, I_C = 2\text{ mA}$	BCW31	h_{FE}	110	–	220
	BCW32	h_{FE}	200	–	450
	BCW33	h_{FE}	420	–	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}	–	120 mV	250 mV
		V_{CEsat}	–	210 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 $t_p = 300\ \mu\text{s}$, duty cycle $\leq 2\%$ – Gemessen mit Impulsen $t_p = 300\ \mu\text{s}$, Schaltverhältnis $\leq 2\%$

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 I _C = 100 mA, I _B = 5 mA	V _{BEsat} V _{BEsat}	– 750 mV 850 mV	– –
Base-Emitter-voltage – Basis-Emitter-Spannung ²⁾ I _C = 2 mA, V _{CE} = 5 V	V _{BE}	550 mV	700 mV
Collector-Base cutoff current – Kollektor-Basis-Reststrom V _{CB} = 30 V, (E open) V _{CE} = 30 V, T _j = 100°C, (E open)	I _{CB0} I _{CB0}	– –	100 nA 10 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	100 MHz	–
Collector-Base Capacitance – Kollektor-Basis-Kapazität V _{CB} = 10 V, I _E = i _e = 0, f = 1 MHz	C _{CB0}	–	2.5 pF 6 pF
Noise figure – Rauschzahl V _{CE} = 5 V, I _C = 200 µA, R _G = 2 kΩ f = 1 kHz, Δf = 200 Hz	F	–	10 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	BCW29, BCW30		
Marking - Stempelung	BCW31 = D1 BCW32 = D2 BCW33 = D3		

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