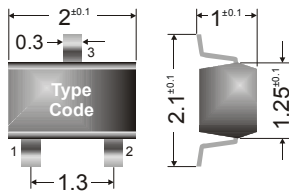


NPN

Surface mount Si-Epitaxial Planar Transistors
Si-Epitaxial Planar Transistoren für die Oberflächenmontage

NPN



Dimensions / Maße in mm
 1 = B 2 = E 3 = C

Power dissipation – Verlustleistung 200 mW

Plastic case SOT-323

Kunststoffgehäuse

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

			BC 846W	BC 847W BC 850W	BC 848W BC 849W
Collector-Emitter-voltage	B open	V_{CE0}	65 V	45 V	30 V
Collector-Base-voltage	E open	V_{CB0}	80 V	50 V	30 V
Emitter-Base-voltage	C open	V_{EB0}	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		T_j	150°C		
Storage temperature – Lagerungstemperatur		T_s	- 65...+ 150°C		

Characteristics ($T_j = 25^\circ\text{C}$)**Kennwerte ($T_j = 25^\circ\text{C}$)**

		Group A	Group B	Group C
DC current gain – Kollektor-Basis-Stromverhältnis ²⁾				
$V_{CE} = 5\text{ V}, I_C = 10\text{ }\mu\text{A}$	h_{FE}	typ. 90	typ. 150	typ. 270
$V_{CE} = 5\text{ V}, I_C = 2\text{ mA}$	h_{FE}	110...220	200...450	420...800
h-Parameters at $V_{CE} = 5\text{ V}, I_C = 2\text{ mA}, f = 1\text{ kHz}$				
Small signal current gain – Stromverstärkung	h_{fe}	typ. 220	typ. 330	typ. 600
Input impedance – Eingangs-Impedanz	h_{ie}	1.6...4.5 k Ω	3.2...8.5 k Ω	6...15 k Ω
Output admittance – Ausgangs-Leitwert	h_{oe}	18 < 30 μS	30 < 60 μS	60 < 110 μS
Reverse voltage transfer ratio Spannungsrückwirkung	h_{re}	typ. 1.5 * 10 ⁻⁴	typ. 2 * 10 ⁻⁴	typ. 3 * 10 ⁻⁴

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

²⁾ Tested with pulses $t_p = 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$ – Gemessen mit Impulsen $t_p = 300\text{ }\mu\text{s}$, Schaltverhältnis $\leq 2\%$

Characteristics ($T_j = 25^\circ\text{C}$)Kennwerte ($T_j = 25^\circ\text{C}$)

			Min.	Typ.	Max.
Collector saturation volt. – Kollektor-Sättigungsspannung ¹⁾					
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
Base saturation voltage – Basis-Sättigungsspannung ¹⁾					
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 ¹⁾					
V _{CE} = 5 V, I _C = 2 mA	V _{BEon}		580 mV	660 mV	700 mV
V _{CE} = 5 V, I _C = 10 mA	V _{BEon}		–	–	770 mV
Collector-Base cutoff current – Kollektorreststrom					
I _E = 0, V _{CB} = 30 V	I _{CB0}		–	–	15 nA
I _E = 0, V _{CB} = 30 V, T _j = 150°C	I _{CB0}		–	–	5 µA
Emitter-Base cutoff current – Emitterreststrom					
I _C = 0, V _{EB} = 5 V	I _{EB0}		–	–	100 nA
Gain-Bandwidth Product – Transittfrequenz					
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 _c = 0, f = 1 MHz	C _{CB0}		–	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 _{EB0}		–	9 pF	–
Noise figure – Rauschzahl					
V _{CE} = 5 V, I _C = 200 µA R _G = 2 kΩ, f = 1 kHz, Δf = 200 Hz	BC 846W... BC 848W	F	–	2 dB	10 dB
	BC 849W... BC 850W	F		1.2 dB	4 dB
V _{CE} = 5 V, I _C = 200 µA R _G = 2 kΩ, f = 1 kHz,	BC 849W	F	–	1.4 dB	4 dB
f = 30 ... 15000 Hz	BC 850W	F	–	1.4 dB	4 dB
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft			R _{thA}	620 K/W ²⁾	
Recommended complementary PNP transistors Empfohlene komplementäre PNP-Transistoren			BC 856W ... BC 860W		

	BC 846AW = 1A	BC 846BW = 1B		
Marking of available current gain groups per type	BC 847AW = 1E	BC 847BW = 1F	BC 847CW = 1G	
Stempelung der lieferbaren Stromverstärkungsgruppen pro Typ	BC 848AW = 1J	BC 848BW = 1K	BC 848CW = 1L	
		BC 849BW = 2B	BC 849CW = 2C	
		BC 850BW = 2F	BC 850CW = 2G	

¹⁾ Tested with pulses $t_p = 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$ – Gemessen mit Impulsen $t_p = 300\text{ }\mu\text{s}$, Schaltverhältnis $\leq 2\%$

²⁾ Mounted on P.C. board with 3 mm² copper pad at each terminal
Montage auf Leiterplatte mit 3 mm² Kupferbelag (Lötpad) an jedem Anschluß