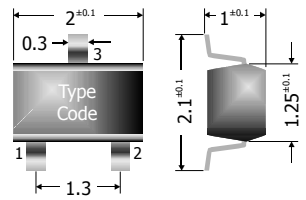
BC856W ... BC859W

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

Version 2011-07-11



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

Power dissipation – Verlustleistung	200 mW
Plastic case Kunststoffgehäuse	SOT-323
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)

			BC856W	BC857W	BC858W BC859W
Collector-Emitter-volt. – Kollektor-Emitter-Spannung	B open	$-V_{CEO}$	65 V	45 V	30 V
Collector-Base-voltage – Kollektor-Basis-Spannung	E open	$-V_{CBO}$	80 V	50 V	30 V
Emitter-Base-voltage – Emitter-Basis-Spannung	C open	$-V_{EBO}$	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 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					
$-V_{CE}$ = 5 V, $-I_C$ = 10 µA	Group A	H_{FE}	–	140	–
	Group B	h_{FE}	–	250	–
	Group C	h_{FE}	–	480	–
$-V_{CE}$ = 5 V, $-I_C$ = 2 mA	Group A	H_{FE}	125	180	250
	Group B	h_{FE}	220	290	475
	Group C	h_{FE}	420	520	800
Collector-Emitter saturation voltage – Kollektor-Sättigungsspannung [2])					
$-I_C$ = 10 mA, $-I_B$ = 0.5 mA		$-V_{CEsat}$	–	75 mV	300 mV
$-I_C$ = 100 mA, $-I_B$ = 5 mA		$-V_{CEsat}$	–	250 mV	650 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 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.
Base-Emitter saturation voltage – Basis-Sättigungsspannung [2]				
- I_C = 10 mA, - I_B = 0.5 mA	- V_{BEsat}	–	700 mV	–
- I_C = 100 mA, - I_B = 5 mA	- V_{BEsat}	–	850 mV	–
Base-Emitter-voltage – Basis-Emitter-Spannung [2]				
- V_{CE} = 5 V, - I_C = 2 mA	- V_{BE}	600 mV	650 mV	750 mV
- V_{CE} = 5 V, - I_C = 10 mA	- V_{BE}	–	–	820 mV
Collector-Base cutoff current – Kollektor-Basis-Reststrom				
- V_{CB} = 30 V, (E open)	- I_{CBO}	–	–	15 nA
- V_{CE} = 30 V, T_j = 125°C, (E open)	- I_{CBO}	–	–	5 µA
Emitter-Base cutoff current				
- V_{EB} = 5 V, (C open)	- I_{EBO}	–	–	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_{CBO}	–	–	4.5 pF
Emitter-Base Capacitance – Emitter-Basis-Kapazität				
- V_{EB} = 0.5 V, I_C = i_c = 0, f = 1 MHz	C_{EBO}	–	10 pF	15 pF
Noise figure – Rauschzahl				
- V_{CE} = 5 V, - I_C = 200 µA, R_G = 2 kΩ BC856W ... BC858W	F	–	–	10 dB
f = 1 kHz, Δf = 200 Hz BC859W	F	–	1 dB	4 dB
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft	R_{thA}	< 620 K/W [1]		
Recommended complementary NPN transistors Empfohlene komplementäre NPN-Transistoren		BC846W ... BC849W		

Marking of available current gain groups per type Stempelung der lieferbare Stromverstärkungs-gruppen pro Typ	BC856AW = 3A BC857AW = 3E BC858AW = 3J	BC856BW = 3B BC857BW = 3F BC858BW = 3K BC859BW = 4B	BC857CW = 3G BC858CW = 3L BC859CW = 4C

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

