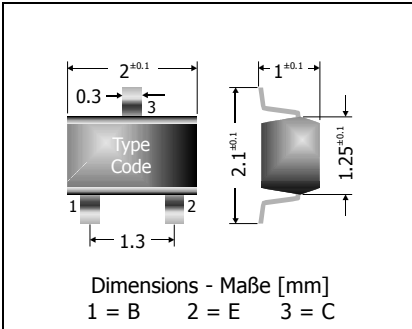


**BC856W ... BC859W**

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

Version 2011-07-11



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<sub>A</sub> = 25°C)**

**Grenzwerte (T<sub>A</sub> = 25°C)**

			BC856W	BC857W	BC858W BC859W
Collector-Emitter-volt. – Kollektor-Emitter-Spannung	B open	- V <sub>CEO</sub>	65 V	45 V	30 V
Collector-Base-voltage – Kollektor-Basis-Spannung	E open	- V <sub>CBO</sub>	80 V	50 V	30 V
Emitter-Base-voltage – Emitter-Basis-Spannung	C open	- V <sub>EBO</sub>	5 V		
Power dissipation – Verlustleistung		P <sub>tot</sub>	200 mW <sup>1)</sup>		
Collector current – Kollektorstrom (dc)		- I <sub>C</sub>	100 mA		
Peak Collector current – Kollektor-Spitzenstrom		- I <sub>CM</sub>	200 mA		
Peak Base current – Basis-Spitzenstrom		- I <sub>BM</sub>	200 mA		
Peak Emitter current – Emitter-Spitzenstrom		I <sub>EM</sub>	200 mA		
Junction temperature – Sperrschichttemperatur		T <sub>j</sub>	-55...+150°C		
Storage temperature – Lagerungstemperatur		T <sub>s</sub>	-55...+150°C		

**Characteristics (T<sub>j</sub> = 25°C)**

**Kennwerte (T<sub>j</sub> = 25°C)**

			Min.	Typ.	Max.
DC current gain – Kollektor-Basis-Stromverhältnis - V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 10 µA	Group A	H <sub>FE</sub>	–	140	–
	Group B	h <sub>FE</sub>	–	250	–
	Group C	h <sub>FE</sub>	–	480	–
	Group A	H <sub>FE</sub>	125	180	250
- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 2 mA	Group B	h <sub>FE</sub>	220	290	475
	Group C	h <sub>FE</sub>	420	520	800
	Collector-Emitter saturation voltage – Kollektor-Sättigungsspannung <sup>2)</sup>				
- I <sub>C</sub> = 10 mA, - I <sub>B</sub> = 0.5 mA - I <sub>C</sub> = 100 mA, - I <sub>B</sub> = 5 mA		- V <sub>CEsat</sub>	–	75 mV	300 mV
		- V <sub>CEsat</sub>	–	250 mV	650 mV

1 Mounted on P.C. board with 3 mm<sup>2</sup> copper pad at each terminal  
 Montage auf Leiterplatte mit 3 mm<sup>2</sup> Kupferbelag (Löt-pad) an jedem Anschluss  
 2 Tested with pulses t<sub>p</sub> = 300 µs, duty cycle ≤ 2% – Gemessen mit Impulsen t<sub>p</sub> = 300 µs, Schaltverhältnis ≤ 2%

**Characteristics (T<sub>j</sub> = 25°C)**
**Kennwerte (T<sub>j</sub> = 25°C)**

		<b>Min.</b>	<b>Typ.</b>	<b>Max.</b>
<b>Base-Emitter saturation voltage – Basis-Sättigungsspannung <sup>2)</sup></b>				
- I <sub>C</sub> = 10 mA, - I <sub>B</sub> = 0.5 mA	- V <sub>BEsat</sub>	–	700 mV	–
- I <sub>C</sub> = 100 mA, - I <sub>B</sub> = 5 mA	- V <sub>BEsat</sub>	–	850 mV	–
<b>Base-Emitter-voltage – Basis-Emitter-Spannung <sup>2)</sup></b>				
- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 2 mA	- V <sub>BE</sub>	600 mV	650 mV	750 mV
- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 10 mA	- V <sub>BE</sub>	–	–	820 mV
<b>Collector-Base cutoff current – Kollektor-Basis-Reststrom</b>				
- V <sub>CB</sub> = 30 V, (E open)	- I <sub>CBO</sub>	–	–	15 nA
- V <sub>CE</sub> = 30 V, T <sub>j</sub> = 125°C, (E open)	- I <sub>CBO</sub>	–	–	5 µA
<b>Emitter-Base cutoff current</b>				
- V <sub>EB</sub> = 5 V, (C open)	- I <sub>EBO</sub>	–	–	100 nA
<b>Gain-Bandwidth Product – Transitfrequenz</b>				
- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 10 mA, f = 100 MHz	f <sub>T</sub>	100 MHz	–	–
<b>Collector-Base Capacitance – Kollektor-Basis-Kapazität</b>				
- V <sub>CB</sub> = 10 V, I <sub>E</sub> = i <sub>e</sub> = 0, f = 1 MHz	C <sub>CB0</sub>	–	–	4.5 pF
<b>Emitter-Base Capacitance – Emitter-Basis-Kapazität</b>				
- V <sub>EB</sub> = 0.5 V, I <sub>C</sub> = i <sub>c</sub> = 0, f = 1 MHz	C <sub>EBO</sub>	–	10 pF	15 pF
<b>Noise figure – Rauschzahl</b>				
- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 200 µA, R <sub>G</sub> = 2 kΩ	BC856W ... BC858W	F	–	10 dB
f = 1 kHz, Δf = 200 Hz	BC859W	F	1 dB	4 dB
<b>Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft</b>				
	R <sub>thA</sub>	< 620 K/W <sup>1)</sup>		
<b>Recommended complementary NPN transistors Empfohlene komplementäre NPN-Transistoren</b>				
		BC846W ... BC849W		
<b>Marking of available current gain groups per type Stempelung der lieferbare Stromverstärkungs- gruppen pro Typ</b>	BC856AW = 3A BC857AW = 3E BC858AW = 3J	BC856BW = 3B BC857BW = 3F BC858BW = 3K BC859BW = 4B	BC857CW = 3G BC858CW = 3L BC859CW = 4C	

<sup>2)</sup> Tested with pulses t<sub>p</sub> = 300 µs, duty cycle ≤ 2% – Gemessen mit Impulsen t<sub>p</sub> = 300 µs, Schaltverhältnis ≤ 2%

<sup>1)</sup> Mounted on P.C. board with 3 mm<sup>2</sup> copper pad at each terminal  
Montage auf Leiterplatte mit 3 mm<sup>2</sup> Kupferbelag (Löt-pad) an jedem Anschluss