

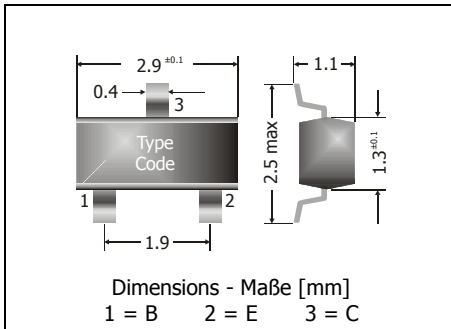
## BC856 ... BC860

PNP

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

PNP

Version 2011-11-07



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 Rolle

### Maximum ratings (T<sub>A</sub> = 25°C)

### Grenzwerte (T<sub>A</sub> = 25°C)

			BC856	BC857 BC860	BC858 BC859
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>	250 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		
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>	–	90	–
		Group B	h <sub>FE</sub>	–	150	–
		Group C	h <sub>FE</sub>	–	270	–
	- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 2 mA	Group A	H <sub>FE</sub>	125	180	250
		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	- V <sub>CEsat</sub>		–	–	300 mV	
		I <sub>C</sub> = 100 mA, I <sub>B</sub> = 5 mA		–	–	650 mV
Base-Emitter saturation voltage – Basis-Sättigungsspannung <sup>2)</sup>						
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		–	900 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)**

		Min.	Typ.	Max.
Base-Emitter-voltage – Basis-Emitter-Spannung <sup>2)</sup>				
- V <sub>CE</sub> = 5 V, I <sub>C</sub> = - 2 mA	- V <sub>BE</sub>	600 mV	–	750 mV
- V <sub>CE</sub> = 5 V, I <sub>C</sub> = - 10 mA	- V <sub>BE</sub>	–	–	720 mV
Collector-Base cutoff current – Kollektor-Basis-Reststrom				
- 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>	–	–	4 µA
Emitter-Base cutoff current				
- V <sub>EB</sub> = 5 V, (C open)	- I <sub>EB0</sub>	–	–	100 nA
Gain-Bandwidth Product – Transitfrequenz				
- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 10 mA, f = 100 MHz	f <sub>T</sub>	100 MHz	–	–
Collector-Base Capacitance – Kollektor-Basis-Kapazität				
- V <sub>CB</sub> = 10 V, I <sub>E</sub> = i <sub>e</sub> = 0, f = 1 MHz	C <sub>CBO</sub>	–	–	4.5 pF
Emitter-Base Capacitance – Emitter-Basis-Kapazität				
- V <sub>EB</sub> = 0.5 V, I <sub>C</sub> = i <sub>c</sub> = 0, f = 1 MHz	C <sub>EB0</sub>	–	9 pF	–
Noise figure – Rauschzahl				
- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 200 µA	BC856 ... BC858	F	–	2 dB
R <sub>G</sub> = 2 kΩ, f = 1 kHz, Δf = 200 Hz	BC859 ... BC860	F	–	1.2 dB
				10 dB
				4 dB
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft		R <sub>thA</sub>	< 420 K/W <sup>1)</sup>	
Recommended complementary NPN transistors Empfohlene komplementäre NPN-Transistoren		BC846 ... BC850		
Marking of available current gain groups Stempelung der lieferbaren Stromverstärkungsgruppen	BC856A = 3A BC856B = 3B BC856C = 3C	BC857A = 3E BC857B = 3F BC857C = 3G  BC860B = 3F BC860C = 3G or 4G	BC858A = 3E BC858B = 3F BC858C = 3G  BC859B = 3F BC859C = 3G or 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