

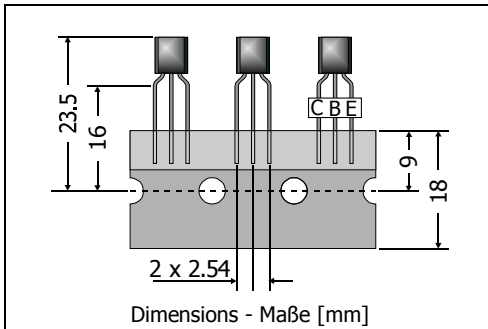
## BC556 ... BC559

PNP

**General Purpose Si-Epitaxial Planar Transistors**  
**Si-Epitaxial Planar-Transistoren für universellen Einsatz**

PNP

Version 2011-08-19



Power dissipation – Verlustleistung

500 mW

Plastic case  
KunststoffgehäuseTO-92  
(10D3)

Weight approx. – Gewicht ca.

0.18 g

Plastic material has UL classification 94V-0  
Gehäusematerial UL94V-0 klassifiziertStandard packaging taped in ammo pack  
Standard Lieferform gegurtet in Ammo-PackMaximum ratings ( $T_A = 25^\circ\text{C}$ )Grenzwerte ( $T_A = 25^\circ\text{C}$ )

			BC556	BC557	BC558/559
Collector-Emitter-voltage	E-B short	- $V_{CES}$	80 V	50 V	30 V
Collector-Emitter-voltage	B open	- $V_{CEO}$	65 V	45 V	30 V
Collector-Base-voltage	E open	- $V_{CBO}$	80 V	50 V	30 V
Emitter-Base-voltage	C open	- $V_{EB0}$	5 V		
Power dissipation – Verlustleistung		$P_{tot}$	500 mW <sup>1)</sup>		
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		$T_j$	-55...+150°C		
Storage temperature – Lagerungstemperatur		$T_s$	-55...+150°C		

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

		Group A	Group B	Group C
DC current gain – Kollektor-Basis-Stromverhältnis <sup>2)</sup>				
- $V_{CE} = 5\text{ V}$ , - $I_C = 10\ \mu\text{A}$	$h_{FE}$	typ. 90	typ. 150	typ. 270
- $V_{CE} = 5\text{ V}$ , - $I_C = 2\text{ mA}$	$h_{FE}$	110 ... 220	200 ... 450	420 ... 800
- $V_{CE} = 5\text{ V}$ , - $I_C = 100\text{ mA}$	$h_{FE}$	typ. 120	typ. 200	typ. 400
h-Parameters at/bei - $V_{CE} = 5\text{ V}$ , - $I_C = 2\text{ mA}$ , $f = 1\text{ kHz}$				
Small signal current gain Kleinsignal-Stromverstärkung	$h_{fe}$	typ. 220	typ. 330	typ. 600
Input impedance – Eingangs-Impedanz	$h_{ie}$	1.6 ... 4.5 k $\Omega$	3.2 ... 8.5 k $\Omega$	6 ... 15 k $\Omega$
Output admittance – Ausgangs-Leitwert	$h_{oe}$	18 < 30 $\mu\text{S}$	30 < 60 $\mu\text{S}$	60 < 110 $\mu\text{S}$
Reverse voltage transfer ratio Spannungsrückwirkung	$h_{re}$	typ. 1.5*10 <sup>-4</sup>	typ. 2*10 <sup>-4</sup>	typ. 3*10 <sup>-4</sup>

1 Valid, if leads are kept at ambient temperature at a distance of 2 mm from case  
 Gültig wenn die Anschlussdrähte in 2 mm Abstand vom Gehäuse auf Umgebungstemperatur gehalten werden

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

		<b>Min.</b>	<b>Typ.</b>	<b>Max.</b>	
<b>Collector-Emitter cutoff current – Kollektor-Emitter-Reststrom</b>					
- V <sub>CE</sub> = 80 V, (B-E short)	BC556	- I <sub>CEs</sub>	–	0.2 nA	15 nA
- V <sub>CE</sub> = 50 V, (B-E short)	BC557	- I <sub>CEs</sub>	–	0.2 nA	15 nA
- V <sub>CE</sub> = 30 V, (B-E short)	BC558 / BC559	- I <sub>CEs</sub>	–	0.2 nA	15 nA
- V <sub>CE</sub> = 80 V, T <sub>j</sub> = 125°C, (B-E short)	BC556	- I <sub>CEs</sub>	–	–	4 µA
- V <sub>CE</sub> = 50 V, T <sub>j</sub> = 125°C, (B-E short)	BC557	- I <sub>CEs</sub>	–	–	4 µA
- V <sub>CE</sub> = 30 V, T <sub>j</sub> = 125°C, (B-E short)	BC558 / BC559	- I <sub>CEs</sub>	–	–	4 µA
<b>Collector-Emitter saturation voltage – Kollektor-Emitter-Sättigungsspg<sup>2)</sup></b>					
- I <sub>C</sub> = 10 mA, - I <sub>B</sub> = 0.5 mA		- V <sub>CEsat</sub>	–	80 mV	300 mV
- I <sub>C</sub> = 100 mA, - I <sub>B</sub> = 5 mA		- V <sub>CEsat</sub>	–	250 mV	650 mV
<b>Base-Emitter saturation voltage – Basis-Emitter-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>	–	900 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	660 mV	750 mV
- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 10 mA		- V <sub>BE</sub>	–	–	800 mV
<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>	–	150 MHz	–
<b>Collector-Base Capacitance – Kollektor-Basis-Kapazität</b>					
- V <sub>CB</sub> = 10 V, I <sub>E</sub> = I <sub>C</sub> = 0, f = 1 MHz		C <sub>CB0</sub>	–	3.5 pF	6 pF
<b>Emitter-Base Capacitance – Emitter-Basis-Kapazität</b>					
- V <sub>EB</sub> = 0.5 V, I <sub>C</sub> = I <sub>E</sub> = 0, f = 1 MHz		C <sub>EB0</sub>	–	10 pF	–
<b>Noise figure – Rauschzahl</b>					
- V <sub>CE</sub> = 5 V, - I <sub>C</sub> = 200 µA, R <sub>G</sub> = 2 kΩ	BC556 ... BC558	F	–	2 dB	10 dB
f = 1 kHz, Δf = 200 Hz	BC559	F	–	1 dB	4 dB
<b>Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft</b>					
		R <sub>thA</sub>	< 200 K/W <sup>1)</sup>		
<b>Recommended complementary NPN transistors Empfohlene komplementäre NPN-Transistoren</b>					
			BC546 ... BC549		
<b>Available current gain groups per type Lieferbare Stromverstärkungsgruppen pro Typ</b>					
			BC556A BC557A BC558A	BC556B BC557B BC558B BC559B	BC557C BC558C BC559C

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

1 Valid, if leads are kept at ambient temperature at a distance of 2 mm from case

Gültig wenn die Anschlussdrähte in 2 mm Abstand vom Gehäuse auf Umgebungstemperatur gehalten werden