

BCP 54, BCP 55, BCP 56

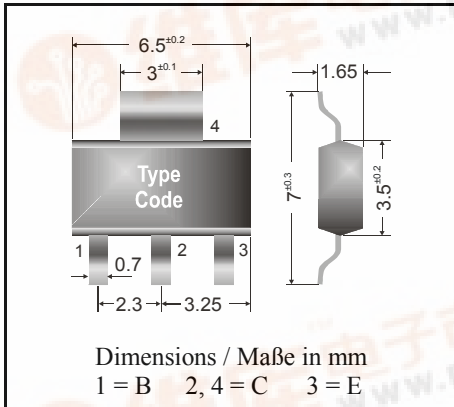


General Purpose Transistors

NPN

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

NPN



Power dissipation – Verlustleistung 1.3 W  
Plastic case SOT-223  
Kunststoffgehäuse  
Weight approx. – Gewicht ca. 0.04 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)

			BCP 54	BCP 55	BCP 56
Collector-Emitter-voltage	B open	V <sub>CE0</sub>	45 V	60 V	80 V
Collector-Base-voltage	E open	V <sub>CB0</sub>	45 V	60 V	100 V
Emitter-Base-voltage	C open	V <sub>EB0</sub>	5 V		
Power dissipation – Verlustleistung		P <sub>tot</sub>	1.3 W <sup>1)</sup>		
Collector current – Kollektorstrom (DC)		I <sub>C</sub>	1 A		
Peak Collector current – Koll.-Spitzenstrom		I <sub>CM</sub>	1.5 A		
Peak Base current – Basis-Spitzenstrom		I <sub>BM</sub>	200 mA		
Junction temp. – Sperrschichttemperatur		T <sub>j</sub>	150°C		
Storage temperature – Lagerungstemperatur		T <sub>s</sub>	- 65...+ 150°C		

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

Kennwerte (T<sub>j</sub> = 25°C)

		Min.	Typ.	Max.
Collector-Base cutoff current – Kollektorreststrom	I <sub>E</sub> = 0, V <sub>CB</sub> = 30 V	I <sub>CB0</sub>	–	100 nA
	I <sub>E</sub> = 0, V <sub>CB</sub> = 30 V, T <sub>j</sub> = 125°C	I <sub>CB0</sub>	–	10 µA
Emitter-Base cutoff current – Emitterreststrom	I <sub>C</sub> = 0, V <sub>EB</sub> = 5 V	I <sub>EB0</sub>	–	100 nA
	Collector saturation volt. – Kollektor-Sättigungsspg. <sup>2)</sup>	V <sub>CEsat</sub>	–	500 mV

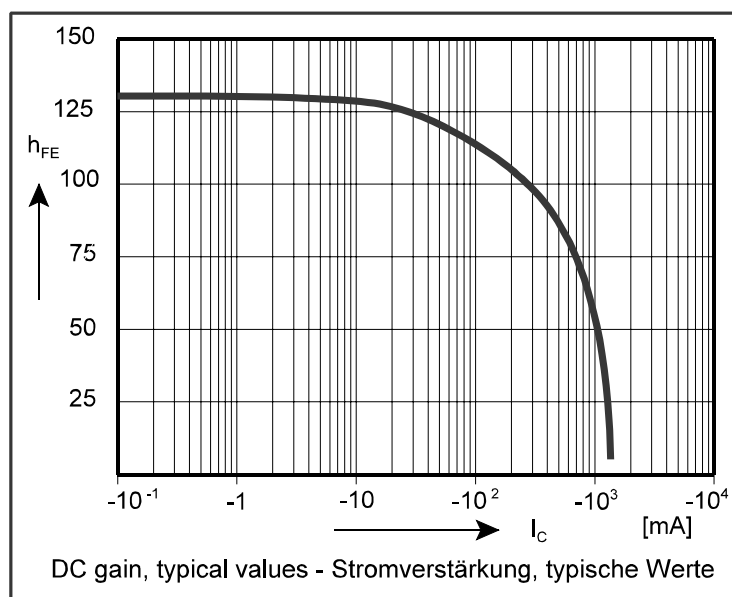


1) Mounted on P.C. board with 3 mm<sup>2</sup> copper pad at each terminal  
Montage auf Leiterplatte mit 3 mm<sup>2</sup> Kupferbelag (Löt-pad) an jedem Anschluß  
2) Tested with pulses t = 300 µs duty cycle < 2% – Gemessen mit Impulsen t = 300 µs Schaltverhältnis < 2%

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

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

		Min.	Typ.	Max.	
DC current gain – Kollektor-Basis-Stromverhältnis <sup>1)</sup>					
$V_{CE} = 2\text{ V}, I_C = 150\text{ mA}$	BCP 5x-6	$h_{FE}$	40	–	100
	BCP 5x-10	$h_{FE}$	63	–	160
	BCP 5x-16	$h_{FE}$	100	–	250
$V_{CE} = 2\text{ V}, I_C = 5\text{ mA}$	BCP 54... BCP56	$h_{FE}$	63	–	–
$V_{CE} = 2\text{ V}, I_C = 500\text{ mA}$		$h_{FE}$	40	–	–
Base-Emitter voltage – Basis-Emitter-Spannung <sup>1)</sup>					
$V_{CE} = 2\text{ V}, I_C = 500\text{ mA}$		$V_{BEon}$	–	–	1 V
Gain-Bandwidth Product – Transitfrequenz					
$V_{CE} = 5\text{ V}, I_C = 10\text{ mA}, f = 100\text{ MHz}$		$f_T$	–	130 MHz	–
DC current gain ratio of the complement. pairs Verhältnis der Stromverst. complement. Paare		$h_{FE1}/h_{FE2}$	–	–	1.6
Thermal resistance – Wärmewiderstand					
junction to ambient air – Sperrschicht zu umgebender Luft			$R_{thA}$	95 K/W <sup>2)</sup>	
junction to soldering point – Sperrschicht zu Lötpad			$R_{thS}$	14 K/W	
Recommended complementary PNP transistors Empfohlene komplementäre PNP-Transistoren			BCP 51, BCP 52, BCP 53		



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

<sup>2)</sup> Mounted on P.C. board with  $3\text{ mm}^2$  copper pad at each terminal  
Montage auf Leiterplatte mit  $3\text{ mm}^2$  Kupferbelag (Lötpad) an jedem Anschluß