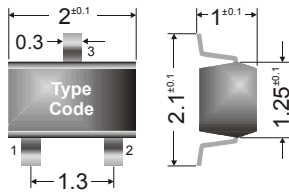


PNP

Surface mount Si-Epitaxial Planar Transistors

Si-Epitaxial Planar Transistoren für die Oberflächenmontage

PNP



Dimensions / Maße in mm
1 = B 2 = E 3 = C

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

Grenzwerte ($T_A = 25^\circ\text{C}$)

			BC 856W	BC 857W BC 860W	BC 858W BC 859W
Collector-Emitter-voltage	B open	$-V_{CE0}$	65 V	45 V	30 V
Collector-Base-voltage	E open	$-V_{CB0}$	80 V	50 V	30 V
Emitter-Base-voltage	C open	$-V_{EB0}$	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		T_j	150°C		
Storage temperature – Lagerungstemperatur		T_s	- 65...+ 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 ²⁾				
$-V_{CE} = 5\text{ V}$, $-I_C = 10\text{ }\mu\text{A}$	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
h-Parameters at $-V_{CE} = 5\text{ V}$, $-I_C = 2\text{ mA}$, $f = 1\text{ kHz}$				
Small signal current gain – Stromverstärkung	h_{fe}	typ. 220	typ. 330	typ. 600
Input impedance – Eingangs-Impedanz	h_{ie}	1.6...4.5 k Ω	3.2...8.5 k Ω	6...15 k Ω
Output admittance – Ausgangs-Leitwert	h_{oe}	18 < 30 μS	30 < 60 μS	60 < 110 μS
Reverse voltage transfer ratio Spannungsrückwirkung	h_{re}	typ. 1.5 * 10 ⁻⁴	typ. 2 * 10 ⁻⁴	typ. 3 * 10 ⁻⁴

¹⁾ Mounted on P.C. board with 3 mm² copper pad at each terminal
Montage auf Leiterplatte mit 3 mm² Kupferbelag (Löt-pad) an jedem Anschluß

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

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

			Min.	Typ.	Max.
Collector saturation volt. – Kollektor-Sättigungsspannung ¹⁾					
- 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	600 mV
Base saturation voltage – Basis-Sättigungsspannung ¹⁾					
- 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 ¹⁾					
- V _{CE} = 5 V, - I _C = 2 mA	- V _{BEon}		600 mV	650 mV	750 mV
- V _{CE} = 5 V, - I _C = 10 mA	- V _{BEon}		–	–	820 mV
Collector-Base cutoff current – Kollektorreststrom					
I _E = 0, - V _{CB} = 30 V	- I _{CB0}		–	–	15 nA
I _E = 0, - V _{CB} = 30 V, T _j = 150 °C	- I _{CB0}		–	–	4 µA
Emitter-Base cutoff current – Emitterreststrom					
I _C = 0, - V _{EB} = 5 V	- I _{EB0}		–	–	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 _{CB0}		–	10 pF	12 pF
Noise figure – Rauschzahl					
- V _{CE} = 5 V, - I _C = 200 µA R _G = 2 kΩ, f = 1 kHz, Δf = 200 Hz	BC 856W... BC 858W	F	–	–	10 dB
	BC 859W... BC860W		–	–	4 dB
- V _{CE} = 5 V, - I _C = 200 µA R _G = 2 kΩ, f = 30...15 kHz	BC 859W	F	–	–	4 dB
	BC 860W	F	–	–	4 dB
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft			R _{thA}	620 K/W ²⁾	
Recommended complementary NPN transistors Empfohlene komplementäre NPN-Transistoren			BC 846W ... BC 850W		

	BC 856AW = 3A	BC 856BW = 3B		
Marking of available current gain groups per type	BC 857AW = 3E	BC 857BW = 3F	BC 857CW = 3G	
Stempelung der lieferbaren Strom- verstärkungsgruppen pro Typ	BC 858AW = 3J	BC 858BW = 3K	BC 858CW = 3L	
		BC 859BW = 4B	BC 859CW = 4C	
		BC 860BW = 4F	BC 860CW = 4G	

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

²⁾ Mounted on P.C. board with 3 mm² copper pad at each terminal
Montage auf Leiterplatte mit 3 mm² Kupferbelag (Lötpad) an jedem Anschluß