

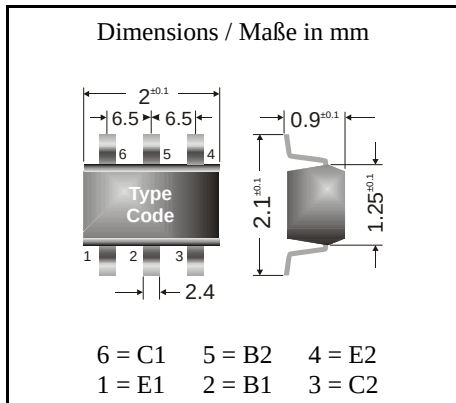
PNP

Surface mount Si-Epitaxial Planar Transistors

Si-Epitaxial Planar Transistoren für die Oberflächenmontage

PNP

Version 2004-04-09



Power dissipation – Verlustleistung 310 mW

Plastic case SOT-363

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

			BC856S	BC857S	BC858S
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}	310 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 ($T_j = 25^\circ\text{C}$)**

DC current gain – Kollektor-Basis-Stromverhältnis ²⁾		
- $V_{CE} = 5\text{ V}$, - $I_C = 10\text{ }\mu\text{A}$	h_{FE}	typ. 90 ... 270
- $V_{CE} = 5\text{ V}$, - $I_C = 2\text{ mA}$	h_{FE}	110 ... 800
h-Parameters at - $V_{CE} = 5\text{ V}$, - $I_C = 2\text{ mA}$, $f = 1\text{ kHz}$		
Small signal current gain Kleinsignal-Stromverstärkung	h_{fe}	typ. 220 ... 600
Input impedance – Eingangs-Impedanz	h_{ie}	1.6 ... 15 k Ω
Output admittance – Ausgangs-Leitwert	h_{oe}	18 ... 110 μS
Reverse voltage transfer ratio Spannungsrückwirkung	h_{re}	typ. 1.5 ... 3 * 10 ⁻⁴

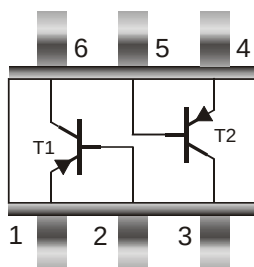
¹⁾ Mounted on P.C. board with 3 mm² copper pad at each terminal
Montage auf Leiterplatte mit 3 mm² Kupferbelag (Löt-pad) an jedem Anschluß

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-Sättigungsspag. ¹⁾			
- I _C = 10 mA, - I _B = 0.5 mA	-V _{CEsat}	90 mV	250 mV
- I _C = 100 mA, - I _B = 5 mA	-V _{CEsat}	200 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}	900 mV	–
Base-Emitter voltage – Basis-Emitter-Spannung ¹⁾			
- V _{CE} = 5 V, - I _C = 2 mA	- V _{BEon}	600 mV	650 mV
- V _{CE} = 5 V, - I _C = 10 mA	- V _{BEon}	–	750 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}	–	5 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}	–	6 pF
Noise figure – Rauschzahl			
- V _{CE} = 5 V, - I _C = 200 µA	F	–	2 dB
R _G = 2 kΩ, f = 1 kHz, Δf = 200 Hz			10 dB
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft	R _{thA}	420 K/W ²⁾	
Recommended complementary NPN transistors Empfohlene komplementäre NPN-Transistoren		BC846S ... BC848S	

Pinning – Anschlußbelegung



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 mm^2 copper pad at each terminal
Montage auf Leiterplatte mit 3 mm^2 Kupferbelag (Lötpad) an jedem Anschluß