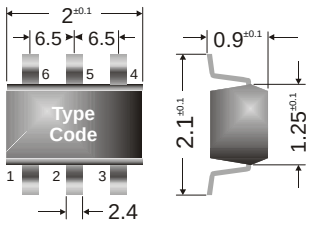
NPN **Surface mount Si-Epitaxial PlanarTransistors** **NPN**
Si-Epitaxial PlanarTransistoren für die Oberflächenmontage

Version 2004-04-09

Dimensions / Maße in mm



6 = C1 5 = B2 4 = E2
1 = E1 2 = B1 3 = C2

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˚C) **Grenzwerte (T_A = 25˚C)**

			BC846S	BC847S	BC848S
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}	6 V		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˚C) **Kennwerte (T_j = 25˚C)**

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

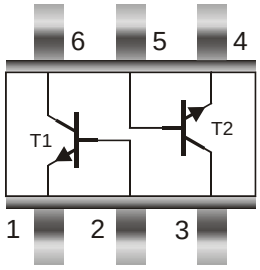
[1]) Mounted on P.C. board with 3 mm² copper pad at each terminal
Montage auf Leiterplatte mit 3 mm² Kupferbelag (Lötpad) an jedem Anschluß
[2]) Tested with pulses t_p = 300 µs, duty cycle ≤ 2% – Gemessen mit Impulsen t_p = 300 µs, Schaltverhältnis ≤ 2%

Characteristics (T_j = 25˚C) **Kennwerte (T_j = 25˚C)**

		Min.	Typ.	Max.
Collector saturation volt. – Kollektor-Sättigungsspg. [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}	580 mV	660 mV	700 mV
V_{CE} = 5 V, I_C = 10 mA	V_{BEon}	–	–	770 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 Capacit. – Kollektor-Basis-Kapazität				
V_{CB} = 10 V, I_E = i_e = 0, f = 1 MHz	C_{CB0}	–	3.5 pF	6 pF
Emitter-Base Capacitance – Emitter-Basis-Kapazität				
V_{EB} = 0.5 V, I_C = i_c = 0, f = 1 MHz	C_{EB0}	–	9 pF	–
Noise figure – Rauschzahl				
V_{CE} = 5 V, I_C = 200 µA R_G = 2 kΩ, f = 1 kHz, Δf = 200 Hz	F	–	2 dB	10 dB

Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft	R_{thA}	420 K/W [2]
Recommended complementary PNP transistors Empfohlene komplementäre PNP-Transistoren		BC856S ... BC858S

Pinning – Anschlußbelegung



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Montage auf Leiterplatte mit 3 mm² Kupferbelag (Lötpad) an jedem Anschluß

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