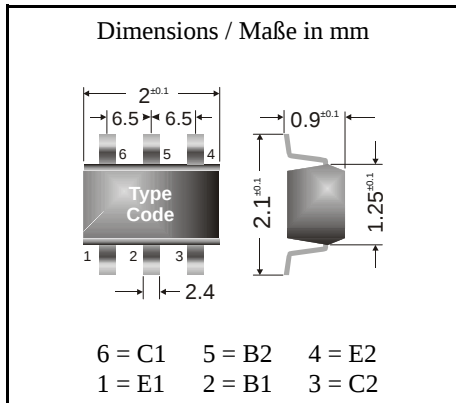


NPN

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

NPN

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

			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 ($T_j = 25^\circ\text{C}$)**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-Sättigungsspg. ¹⁾			
$I_C = 10\text{ mA}, I_B = 0.5\text{ mA}$ $I_C = 100\text{ mA}, I_B = 5\text{ mA}$	V_{CEsat} V_{CEsat}	– 90 mV 200 mV	250 mV 600 mV
Base saturation voltage – Basis-Sättigungsspannung ¹⁾			
$I_C = 10\text{ mA}, I_B = 0.5\text{ mA}$ $I_C = 100\text{ mA}, I_B = 5\text{ mA}$	V_{BEsat} V_{BEsat}	– 700 mV 900 mV	– –
Base-Emitter voltage – Basis-Emitter-Spannung ¹⁾			
$V_{CE} = 5\text{ V}, I_C = 2\text{ mA}$ $V_{CE} = 5\text{ V}, I_C = 10\text{ mA}$	V_{BEon} V_{BEon}	580 mV –	660 mV 700 mV 770 mV
Collector-Base cutoff current – Kollektorreststrom			
$I_E = 0, V_{CB} = 30\text{ V}$ $I_E = 0, V_{CB} = 30\text{ V}, T_j = 150^\circ\text{C}$	I_{CB0} I_{CB0}	– –	15 nA 5 μA
Emitter-Base cutoff current – Emitterreststrom			
$I_C = 0, V_{EB} = 5\text{ V}$	I_{EB0}	–	100 nA
Gain-Bandwidth Product – Transistfrequenz			
$V_{CE} = 5\text{ V}, I_C = 10\text{ mA}, f = 100\text{ MHz}$	f_T	100 MHz	–
Collector-Base Capacit. – Kollektor-Basis-Kapazität			
$V_{CB} = 10\text{ V}, I_E = i_e = 0, f = 1\text{ MHz}$	C_{CB0}	–	3.5 pF 6 pF
Emitter-Base Capacitance – Emitter-Basis-Kapazität			
$V_{EB} = 0.5\text{ V}, I_C = i_c = 0, f = 1\text{ MHz}$	C_{EB0}	–	9 pF –
Noise figure – Rauschzahl			
$V_{CE} = 5\text{ V}, I_C = 200\text{ }\mu\text{A}$ $R_G = 2\text{ k}\Omega, f = 1\text{ kHz}, \Delta f = 200\text{ Hz}$	F	–	2 dB 10 dB

Thermal resistance junction to ambient air

Wärmewiderstand Sperrschicht – umgebende Luft

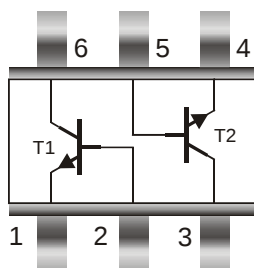
 R_{thA} 420 K/W ²⁾

Recommended complementary PNP transistors

Empfohlene komplementäre PNP-Transistoren

BC856S ... BC858S

Pinning – Anschlußbelegung



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