

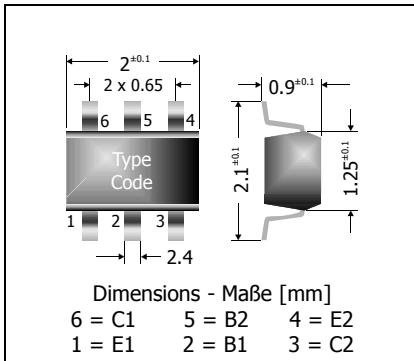
BC856S ... BC859S

PNP

Surface Mount General Purpose Si-Epi-Planar Double-Transistors
Si-Epi-Planar Universal-Doppeltransistoren für die Oberflächenmontage

PNP

Version 2006-08-01


 Power dissipation
 Verlustleistung

300 mW

 Plastic case
 Kunststoffgehäuse

SOT-363

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

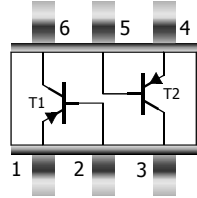
per transistor – pro Transistor			BC856S	BC857S	BC858S BC859S
Collector-Emitter-volt. – Kollektor-Emitter-Spannung	B open	$-V_{CBO}$	65 V	45 V	30 V
Collector-Base-voltage – Kollektor-Basis-Spannung	E open	$-V_{CEO}$	80 V	50 V	30 V
Emitter-Base-voltage – Emitter-Basis-Spannung	C open	$-V_{EB0}$	5 V		
Power dissipation – Verlustleistung		P_{tot}	300 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	-55...+150°C		
Storage temperature – Lagerungstemperatur		T_s	-55...+150°C		

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

per transistor – pro Transistor		Min.	Typ.	Max.
DC current gain – Kollektor-Basis-Stromverhältnis				
$-V_{CE} = 5\text{ V}, -I_C = 10\ \mu\text{A}$	h_{FE}	–	90 ... 270	–
$-V_{CE} = 5\text{ V}, -I_C = 2\text{ mA}$	h_{FE}	110	–	800
h-Parameters at/bei $-V_{CE} = 5\text{ V}, -I_C = 2\text{ mA}, f = 1\text{ kHz}$				
Small signal current gain – Kleinsignal-Stromverstärkung	h_{fe}	–	220 ... 600	–
Input impedance – Eingangs-Impedanz	h_{ie}	1.6 kΩ	–	15 kΩ
Output admittance – Ausgangs-Leitwert	h_{oe}	18 μS	–	110 μS
Reverser voltage transfer ratio – Spannungsrückwirkung	h_{re}	–	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

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

per transistor – pro Transistor	Min.	Typ.	Max.
Collector-Emitter saturation voltage – Kollektor-Sättigungsspannung ²⁾ - $I_C = 10\text{ mA}$, - $I_B = 0.5\text{ mA}$ - $I_C = 100\text{ mA}$, - $I_B = 5\text{ mA}$	- -	90 mV 200 mV	250 mV 600 mV
Base-Emitter saturation voltage – Basis-Sättigungsspannung ²⁾ - $I_C = 10\text{ mA}$, - $I_B = 0.5\text{ mA}$ - $I_C = 100\text{ mA}$, - $I_B = 5\text{ mA}$	- -	700 mV 900 mV	- -
Base-Emitter-voltage – Basis-Emitter-Spannung ²⁾ - $V_{CE} = 5\text{ V}$, - $I_C = 2\text{ mA}$ - $V_{CE} = 5\text{ V}$, - $I_C = 10\text{ mA}$	- V_{BE} - V_{BE}	600 mV 650 mV	750 mV 820 mV
Collector-Base cutoff current – Kollektor-Basis-Reststrom - $V_{CB} = 30\text{ V}$, (E open) - $V_{CE} = 30\text{ V}$, $T_j = 125^\circ\text{C}$, (E open)	- I_{CB0} - I_{CB0}	- -	15 nA 5 μA
Emitter-Base cutoff current - $V_{EB} = 5\text{ V}$, (C open)	- I_{EB0}	-	100 nA
Gain-Bandwidth Product – Transitfrequenz - $V_{CE} = 5\text{ V}$, - $I_C = 10\text{ mA}$, $f = 100\text{ MHz}$	f_T	100 MHz	-
Collector-Base Capacitance – Kollektor-Basis-Kapazität - $V_{CB} = 10\text{ V}$, $I_E = i_e = 0$, $f = 1\text{ MHz}$	C_{CB0}	-	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}	-	10 pF
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft	R_{thA}	< 420 K/W ¹⁾	
Recommended complementary NPN transistors Empfohlene komplementäre NPN-Transistoren	BC846S ... BC849S		
Pinning – Anschlussbelegung T1: E1 = 1, C1 = 6, B1 = 2 T2: E2 = 4, C2 = 3, B2 = 5			

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

¹⁾ Mounted on P.C. board with 3 mm^2 copper pad at each terminal
 Montage auf Leiterplatte mit 3 mm^2 Kupferbelag (Löt-pad) an jedem Anschluss