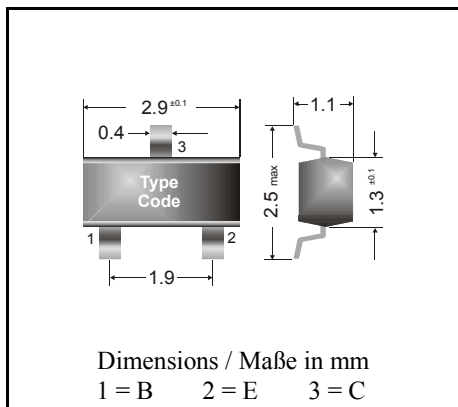


NPN

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

NPN



Power dissipation – Verlustleistung 250 mW

Plastic case SOT-23
 Kunststoffgehäuse (TO-236)

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

			BSR 17A
Collector-Emitter-voltage	B open	V_{CE0}	40 V
Collector-Base-voltage	E open	V_{CB0}	60 V
Emitter-Base-voltage	C open	V_{EB0}	6 V
Power dissipation – Verlustleistung		P_{tot}	250 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}	100 mA
Junction temp. – Sperrschichttemperatur		T_j	150 °C
Storage temperature – Lagerungstemperatur		T_S	- 65...+ 150 °C

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

		Min.	Typ.	Max.
Collector-Base cutoff current – Kollektorreststrom				
$I_E = 0, V_{CB} = 30\text{ V}$	I_{CB0}	–	–	50 nA
$I_E = 0, V_{CB} = 30\text{ V}, T_j = 150^\circ\text{C}$	I_{CB0}	–	–	5 μA
Emitter-Base cutoff current – Emittorreststrom				
$I_C = 0, V_{EB} = 6\text{ V}$	I_{EB0}	–	–	30 nA
Collector saturation volt. – Kollektor-Sättigungssp. ¹⁾				
$I_C = 10\text{ mA}, I_B = 1\text{ mA}$	V_{CEsat}	–	–	200 mV
$I_C = 50\text{ mA}, I_B = 5\text{ mA}$	V_{CEsat}	–	–	200 mV

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

	Min.	Typ.	Max.	
Base saturation voltage – Basis-Sättigungsspannung ¹⁾				
$I_C = 10\text{ mA}, I_B = 1\text{ mA}$	V_{BEsat}	650 mV	–	850 mV
$I_C = 50\text{ mA}, I_B = 5\text{ mA}$	V_{BEsat}	–	–	950 mV
DC current gain – Kollektor-Basis-Stromverhältnis ¹⁾				
$V_{CE} = 1\text{ V}, I_C = 0.1\text{ mA}$	h_{FE}	60	–	–
$V_{CE} = 1\text{ V}, I_C = 1\text{ mA}$	h_{FE}	80	–	–
$V_{CE} = 1\text{ V}, I_C = 10\text{ mA}$	h_{FE}	100	–	300
$V_{CE} = 1\text{ V}, I_C = 50\text{ mA}$	h_{FE}	60	–	–
$V_{CE} = 1\text{ V}, I_C = 100\text{ mA}$	h_{FE}	30	–	–
Gain-Bandwidth Product – Transitfrequenz				
$V_{CE} = 20\text{ V}, I_C = 10\text{ mA}, f = 100\text{ MHz}$	f_T	300 MHz	–	–
Collector-Base Capacitance – Kollektor-Basis-Kapazität				
$V_{CB} = 5\text{ V}, I_E = i_c = 0, f = 1\text{ MHz}$	C_{CB0}	–	4 pF	–
Emitter-Base Capacitance – Emitter-Basis-Kapazität				
$V_{EB} = 0.5\text{ V}, I_C = i_c = 0, f = 1\text{ MHz}$	C_{EB0}	–	8 pF	–
Noise figure – Rauschzahl				
$V_{CE} = 5\text{ V}, I_C = 100\text{ }\mu\text{A}, R_s = 1\text{ k}\Omega,$ $f = 10\text{ Hz} \dots 15.7\text{ kHz}$	F	–	–	5 dB
Switching times – Schaltzeiten				
turn-on time	t_{on}	–	–	65 ns
delay time	t_d	–	–	35 ns
rise time	t_r	–	–	35 ns
turn-off time	t_{off}	–	–	240 ns
storage time	t_s	–	–	200 ns
fall time	t_f	–	–	50 ns
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft		R_{thA}	420 K/W ²⁾	
Recommended complementary PNP transistors Empfohlene komplementäre PNP-Transistoren		BSR 18A		
Marking - Stempelung		BSR 17A = U92		

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