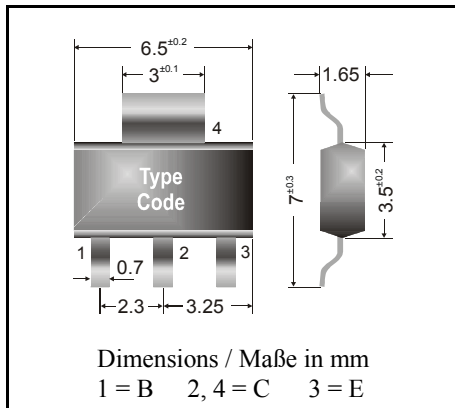


PNP

Surface mount Si-Epitaxial Planar Transistors

Si-Epitaxial Planar Transistoren für die Oberflächenmontage

PNP



Power dissipation – Verlustleistung	1.3 W
Plastic case Kunststoffgehäuse	SOT-223
Weight approx. – Gewicht ca.	0.04 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 ($T_A = 25^\circ\text{C}$)**

			BSP 30 BSP 31	BSP 32 BSP 33
Collector-Emitter-voltage	B open	- V_{CE0}	60 V	80 V
Collector-Base-voltage	E open	- V_{CB0}	70 V	90 V
Emitter-Base-voltage	C open	- V_{EB0}	5 V	
Power dissipation – Verlustleistung		P_{tot}	1.3 W ¹⁾	
Collector current – Kollektorstrom (dc)		- I_C	1 A	
Peak Collector current – Koll.-Spitzenstrom		- I_{CM}	2 A	
Peak Base current – Basis-Spitzenstrom		- I_{BM}	200 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				
$I_E = 0$, - $V_{CB} = 60\text{ V}$	- I_{CB0}	—	—	100 nA
$I_E = 0$, - $V_{CB} = 60\text{ V}$, $T_j = 150^\circ\text{C}$	- I_{CB0}	—	—	50 μA
Emitter-Base cutoff current – Emitterreststrom				
$I_C = 0$, - $V_{EB} = 5\text{ V}$	- I_{EB0}	—	—	100 nA
Collector saturation volt. – Kollektor-Sättigungsspg. ²⁾				
- $I_C = 150\text{ mA}$, - $I_B = 15\text{ mA}$	- V_{CEsat}	—	—	250 mV
- $I_C = 500\text{ mA}$, - $I_B = 50\text{ mA}$	- V_{CEsat}	—	—	500 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

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.
Base saturation voltage – Basis-Sättigungsspannung ¹⁾				
- I _C = 150 mA, - I _B = 15 mA	- V _{BEsat}	–	–	1 V
- I _C = 500 mA, - I _B = 50 mA	- V _{BEsat}	–	–	1.2 V
DC current gain – Kollektor-Basis-Stromverhältnis ¹⁾				
- V _{CE} = 5 V, - I _C = 100 μA	h _{FE}	10	–	–
- V _{CE} = 5 V, - I _C = 100 mA	h _{FE}	40	–	120
- V _{CE} = 5 V, - I _C = 500 mA	h _{FE}	30	–	–
- V _{CE} = 5 V, - I _C = 100 μA	h _{FE}	30	–	–
- V _{CE} = 5 V, - I _C = 100 mA	h _{FE}	100	–	300
- V _{CE} = 5 V, - I _C = 500 mA	h _{FE}	50	–	–
Gain-Bandwidth Product – Transittfrequenz				
- 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}	–	20 pF	–
Emitter-Base Capacitance – Emitter-Basis-Kapazität				
- V _{EB} = 0.5 V, I _C = i _c = 0, f = 1 MHz	C _{EB0}	–	120 pF	–
Switching times – Schaltzeiten				
turn-on time - I _{Con} = 100 mA,	t _{on}	–	–	500 ns
turn-off time - I _{Bon} = 5 mA, I _{Boff} = 5 mA	t _{off}	–	–	600 ns
Thermal resistance – Wärmewiderstand				
junction to ambient air – Sperrschicht zu umgebender Luft			R _{thA}	93 K/W ²⁾
junction to soldering point – Sperrschicht zu Lötpad			R _{thS}	12 K/W
Recommended complementary NPN transistors		BSP 40, BSP 41, BSP 42, BSP 43		
Empfohlene komplementäre NPN-Transistoren				

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