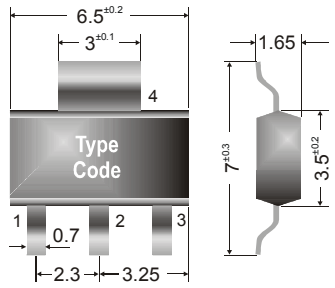
NPN **Surface mount Si-Epitaxial PlanarTransistors**
Si-Epitaxial PlanarTransistoren für die Oberflächenmontage **NPN**



Dimensions / Maße in mm
1 = B 2, 4 = C 3 = E

Power dissipation – Verlustleistung 1.3 W

Plastic case SOT-223
Kunststoffgehäuse

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˚C) **Grenzwerte (T_A = 25˚C)**

			BSP 40 BSP 41	BSP 42 BSP 43
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 – Kollektor-Spitzenstrom		I_{CM}	2 A	
Peak Base current – Basis-Spitzenstrom		I_{BM}	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)**

		Min.	Typ.	Max.
Collector-Base cutoff current – Kollektorreststrom				
I_E = 0, V_{CB} = 60 V	I_{CB0}	–	–	100 nA
I_E = 0, V_{CB} = 60 V, T_j = 150˚C	I_{CB0}	–	–	50 µA
Emitter-Base cutoff current – Emitterreststrom				
I_C = 0, V_{EB} = 5 V	I_{EB0}	–	–	100 nA
Collector saturation volt. – Kollektor-Sättigungsspg. [2])				
I_C = 150 mA, I_B = 15 mA	V_{CEsat}	–	–	250 mV
I_C = 500 mA, I_B = 50 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 (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.
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	BSP 40 BSP 42	h_{FE}	10	–	–
- V_{CE} = 5 V, - I_C = 100 mA	BSP 40 BSP 42	h_{FE}	40	–	120
- V_{CE} = 5 V, - I_C = 500 mA	BSP 40 BSP 42	h_{FE}	30	–	–
- V_{CE} = 5 V, - I_C = 100 µA	BSP 41 BSP 43	h_{FE}	30	–	–
- V_{CE} = 5 V, - I_C = 100 mA	BSP 41 BSP 43	h_{FE}	100	–	300
- V_{CE} = 5 V, - I_C = 500 mA	BSP 41 BSP 43	h_{FE}	50	–	–
Gain-Bandwidth Product – Transitfrequenz					
V_{CE} = 5 V, I_C = 10 mA, f = 100 MHz		f_T	100 MHz	–	–

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 PNP transistors Empfohlene komplementäre PNP-Transistoren	BSP 30, BSP 31, BSP 32, BSP 33

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