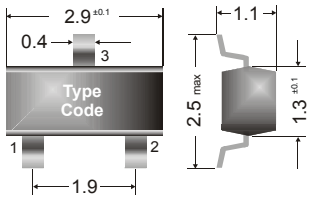
NPN

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

NPN



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

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˚C) **Grenzwerte (T_A = 25˚C)**

			BCX 70
Collector-Emitter-voltage	B open	V_{CE0}	45 V
Collector-Base-voltage	E open	V_{CB0}	45 V
Emitter-Base-voltage	C open	V_{EB0}	5 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}	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} = 45 V	I_{CB0}	–	–	20 nA
I_E = 0, V_{CB} = 45 V, T_j = 150˚C	I_{CB0}	–	–	20 µA
Emitter-Base cutoff current – Emitterreststrom				
I_C = 0, V_{EB} = 4 V	I_{EB0}	–	–	20 nA
Collector saturation volt. – Kollektor-Sättigungsspg. [2])				
I_C = 10 mA, I_B = 0.25 mA	V_{CEsat}	50 mV	–	350 mV
I_C = 50 mA, I_B = 1.25 mA	V_{CEsat}	100 mV	–	550 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 = 10 mA, I_B = 0.25 mA		V_{BEsat}	600 mV	–	850 mV
I_C = 50 mA, I_B = 1.25 mA		V_{BEsat}	700 mV	–	1050 mV
DC current gain – Kollektor-Basis-Stromverhältnis [1]					
V_{CE} = 5 V, I_C = 10 µA	BCX 70G	h_{FE}	–	–	–
	BCX 70H	h_{FE}	30	–	–
	BCX 70J	h_{FE}	40	–	–
	BCX 70K	h_{FE}	100	–	–
V_{CE} = 5 V, I_C = 2 mA	BCX 70G	h_{FE}	120	–	220
	BCX 70H	h_{FE}	180	–	310
	BCX 70J	h_{FE}	250	–	460
	BCX 70K	h_{FE}	380	–	630
V_{CE} = 1 V, I_C = 50 mA	BCX 70G	h_{FE}	50	–	–
	BCX 70H	h_{FE}	70	–	–
	BCX 70J	h_{FE}	90	–	–
	BCX 70K	h_{FE}	100	–	–
Base-Emitter voltage – Basis-Emitter-Spannung [1]					
V_{CE} = 5 V, I_C = 10 µA		V_{BEon}	–	520 mV	–
V_{CE} = 5 V, I_C = 2 mA		V_{BEon}	550 mV	650 mV	700 mV
V_{CE} = 1 V, I_C = 50 mA		V_{BEon}	–	780 mV	–
Gain-Bandwidth Product – Transitfrequenz					
V_{CE} = 5 V, I_C = 10 mA, f = 100 MHz		f_T	100 MHz	250 MHz	–
Collector-Base Capacitance – Kollektor-Basis-Kapazität					
V_{CB} = 10 V, I_E = i_e = 0, f = 1 MHz		C_{CB0}	–	1.7 pF	–
Emitter-Base Capacitance – Emitter-Basis-Kapazität					
V_{EB} = 0.5 V, I_C = i_c = 0, f = 1 MHz		C_{EB0}	–	11 pF	–
Noise figure – Rauschzahl					
V_{CE} = 5 V, I_C = 200 µA, R_G = 2 kΩ, f = 1 kHz, Δf = 200 Hz		F	–	2 dB	6 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				BCX 71 series	

Marking Stempelung	BCX 70G = AG	BCX 70H = AH	BCX 70J = AJ	BCX 70K = AD

[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