

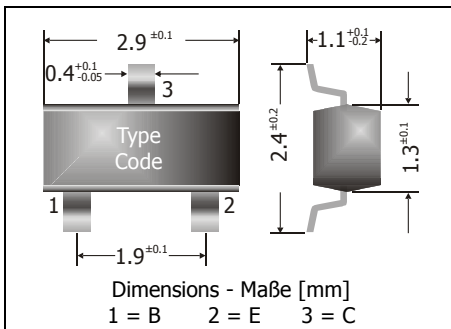
MMBT5551

NPN

Surface Mount General Purpose Si-Epi-Planar Transistors
Si-Epi-Planar Universaltransistoren für die Oberflächenmontage

NPN

Version 2015-05-12



Power dissipation – Verlustleistung

250 mW

Plastic case
 Kunststoffgehäuse

SOT-23
 (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)

			MMBT5551
Collector-Emitter-volt. – Kollektor-Emitter-Spannung	B open	V _{CEO}	160 V
Collector-Base-voltage – Kollektor-Basis-Spannung	E open	V _{CBO}	180 V
Emitter-Base-voltage – Emitter-Basis-Spannung	C open	V _{EBO}	6 V
Power dissipation – Verlustleistung		P _{tot}	250 mW ¹⁾
Collector current – Kollektorstrom (dc)		I _C	600 mA
Junction temperature – Sperrschichttemperatur		T _j	-55...+150°C
Storage temperature – Lagerungstemperatur		T _S	-55...+150°C

Characteristics (T_j = 25°C)Kennwerte (T_j = 25°C)

			Min.	Typ.	Max.
DC current gain – Kollektor-Basis-Stromverhältnis ²⁾					
I _C = 1 mA, V _{CE} = 5 V	MMBT5550	h _{FE}	60	–	–
	MMBT5551	h _{FE}	80	–	–
I _C = 10 mA, V _{CE} = 5 V	MMBT5550	h _{FE}	60	–	250
	MMBT5551	h _{FE}	80	–	250
I _C = 50 mA, V _{CE} = 5 V	MMBT5550	h _{FE}	20	–	–
	MMBT5551	h _{FE}	30	–	–
Collector-Emitter saturation voltage – Kollektor-Emitter-Sättigungsspg. ²⁾					
I _C = 10 mA, I _B = 1 mA	MMBT5550	V _{CEsat}	–	–	0.15 V
	MMBT5551	V _{CEsat}	–	–	0.15 V
I _C = 50 mA, I _B = 5 mA	MMBT5550	V _{CEsat}	–	–	0.25 V
	MMBT5551	V _{CEsat}	–	–	0.20 V

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-Emitter saturation voltage – Basis-Emitter-Sättigungsspannung ²⁾					
I _C = 10 mA, I _B = 1 mA	MMBT5551	V _{BEsat}	–	–	1.0 V
I _C = 50 mA, I _B = 5 mA	MMBT5551	V _{BEsat}	–	–	1.0 V
Collector-Base cutoff current – Kollektor-Basis-Reststrom					
V _{CB} = 120 V, (E open)	MMBT5551	I _{CBO}	–	–	50 nA
V _{CB} = 120 V, T _j = 100°C, (E open)	MMBT5551	I _{CBO}	–	–	50 µA
Emitter-Base cutoff current – Emitter-Basis-Reststrom					
V _{EB} = 4 V, (C open)		I _{EBO}	–	–	50 nA
Gain-Bandwidth Product – Transitfrequenz					
I _C = 10 mA, V _{CE} = 10 V, f = 100 MHz		f _T	100 MHz	–	300 MHz
Collector-Base Capacitance – Kollektor-Basis-Kapazität					
V _{CB} = 10 V, I _E = i _e = 0, f = 1 MHz		C _{CBO}	–	–	6 pF
Emitter-Base Capacitance – Emitter-Basis-Kapazität					
V _{EB} = 0.5 V, I _C = i _c = 0, f = 1 MHz		C _{EBO}	–	–	30 pf
Noise figure – Rauschzahl					
V _{CE} = 5 V, I _C = 200 µA, R _G = 2 kΩ, f = 30 Hz ... 15 kHz	MMBT5551	F	–	–	8 dB
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft		R _{thA}	< 420 K/W ¹⁾		
Recommended complementary PNP transistors Empfohlene komplementäre PNP-Transistoren			MMBT5401		
Marking - Stempelung			MMBT5551 = 3S		

²⁾ Tested with pulses t_p = 300 µs, duty cycle ≤ 2% – Gemessen mit Impulsen t_p = 300 µs, Schaltverhältnis ≤ 2%

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