

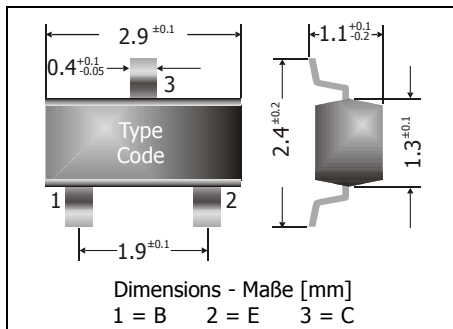
MMBT5401

PNP

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

PNP

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)

			MMBT5401
Collector-Emitter-volt. – Kollektor-Emitter-Spannung	B open	- V _{CEO}	150 V
Collector-Base-voltage – Kollektor-Basis-Spannung	E open	- V _{CBO}	160 V
Emitter-Base-voltage – Emitter-Basis-Spannung	C open	- V _{EBO}	5 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)

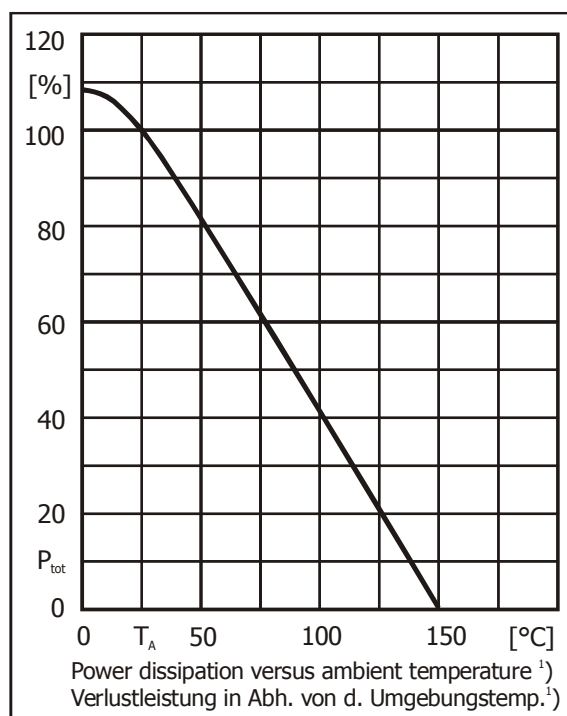
			Min.	Typ.	Max.
DC current gain – Kollektor-Basis-Stromverhältnis ²⁾					
- V _{CE} = 5 V, - I _C = 1 mA	MMBT5400	h _{FE}	30	–	–
- V _{CE} = 5 V, - I _C = 10 mA		h _{FE}	40	–	180
- V _{CE} = 5 V, - I _C = 50 mA		h _{FE}	40	–	–
- V _{CE} = 5 V, - I _C = 1 mA	MMBT5401	h _{FE}	50	–	–
- V _{CE} = 5 V, - I _C = 10 mA		h _{FE}	60	–	240
- V _{CE} = 5 V, - I _C = 50 mA		h _{FE}	50	–	–
Collector-Emitter saturation voltage – Kollektor-Emitter-Sättigungsspg. ²⁾					
- I _C = 10 mA, - I _B = 1 mA	- V _{CEsat}	–	–	0.2 V	
- I _C = 50 mA, - I _B = 5 mA	- V _{CEsat}	–	–	0.5 V	
Base-Emitter saturation voltage – Basis-Emitter-Sättigungsspannung ²⁾					
- I _C = 10 mA, - I _B = 1 mA	- V _{BEsat}	–	–	1.0 V	
- I _C = 50 mA, - I _B = 5 mA	- V _{BEsat}	–	–	1.0 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 ($T_j = 25^\circ\text{C}$)
Kennwerte ($T_j = 25^\circ\text{C}$)

Collector-Base cutoff current – Kollektor-Basis-Reststrom					
- $V_{CB} = 120\text{ V}$, (E open)	MMBT5401	- I_{CBO}	–	–	50 nA
- $V_{CB} = 120\text{ V}$, $T_j = 100^\circ\text{C}$, (E open)	MMBT5401	- I_{CBO}	–	–	50 μA
Emitter-Base-cutoff current – Emitter-Basis-Reststrom					
- $V_{EB} = 4\text{ V}$, (C open)		- I_{EBO}	–	–	50 nA
Gain-Bandwidth Product – Transitfrequenz					
- $I_C = 10\text{ mA}$, - $V_{CE} = 10\text{ V}$, $f = 100\text{ MHz}$		f_T	100 MHz	–	300 MHz
Collector-Base Capacitance – Kollektor-Basis-Kapazität					
- $V_{CB} = 10\text{ V}$, $I_E = i_e = 0$, $f = 1\text{ MHz}$		C_{CBO}	–	–	6 pF
Noise figure – Rauschzahl					
- $V_{CE} = 5\text{ V}$, - $I_C = 200\text{ }\mu\text{A}$, $R_S = 10\text{ }\Omega$, $f = 1\text{ kHz}$	MMBT5401	F	–	–	8 dB
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft		R_{thA}	< 420 K/W ¹⁾		
Recommended complementary NPN transistors Empfohlene komplementäre NPN-Transistoren			MMBT5551		
Marking - Stempelung			MMBT5401 = 2Lx		



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