

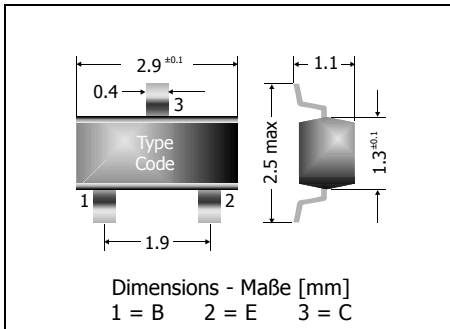
MMBT5400 / MMBT5401

PNP

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

PNP

Version 2006-05-16



Power dissipation – Verlustleistung

250 mW

Plastic case
KunststoffgehäuseSOT-23
(TO-236)

Weight approx. – Gewicht ca.

0.01 g

Plastic material has UL classification 94V-0
Gehäusematerial UL94V-0 klassifiziertStandard packaging taped and reeled
Standard Lieferform getupet auf RolleMaximum ratings ($T_A = 25^\circ\text{C}$)Grenzwerte ($T_A = 25^\circ\text{C}$)

			MMBT5400	MMBT5401
Collector-Emitter-volt. – Kollektor-Emitter-Spannung	B open	- V_{CEO}	120 V	150 V
Collector-Base-voltage – Kollektor-Basis-Spannung	E open	- V_{CBO}	130 V	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 ($T_j = 25^\circ\text{C}$)Kennwerte ($T_j = 25^\circ\text{C}$)

			Min.	Typ.	Max.
DC current gain – Kollektor-Basis-Stromverhältnis ²⁾					
- $V_{CE} = 5\text{ V}$, - $I_C = 1\text{ mA}$ - $V_{CE} = 5\text{ V}$, - $I_C = 10\text{ mA}$ - $V_{CE} = 5\text{ V}$, - $I_C = 50\text{ mA}$	MMBT5400	h_{FE}	30	–	–
		h_{FE}	40	–	180
		h_{FE}	40	–	–
- $V_{CE} = 5\text{ V}$, - $I_C = 1\text{ mA}$ - $V_{CE} = 5\text{ V}$, - $I_C = 10\text{ mA}$ - $V_{CE} = 5\text{ V}$, - $I_C = 50\text{ mA}$	MMBT5401	h_{FE}	50	–	–
		h_{FE}	60	–	240
		h_{FE}	50	–	–
Collector-Emitter saturation voltage – Kollektor-Emitter-Sättigungsspg. ²⁾					
- $I_C = 10\text{ mA}$, - $I_B = 1\text{ mA}$ - $I_C = 50\text{ mA}$, - $I_B = 5\text{ mA}$		- V_{CEsat}	–	–	0.2 V
		- V_{CEsat}	–	–	0.5 V
Base-Emitter saturation voltage – Basis-Emitter-Sättigungsspannung ²⁾					
- $I_C = 10\text{ mA}$, - $I_B = 1\text{ mA}$ - $I_C = 50\text{ mA}$, - $I_B = 5\text{ mA}$		- V_{BEsat}	–	–	1.0 V
		- V_{BEsat}	–	–	1.0 V

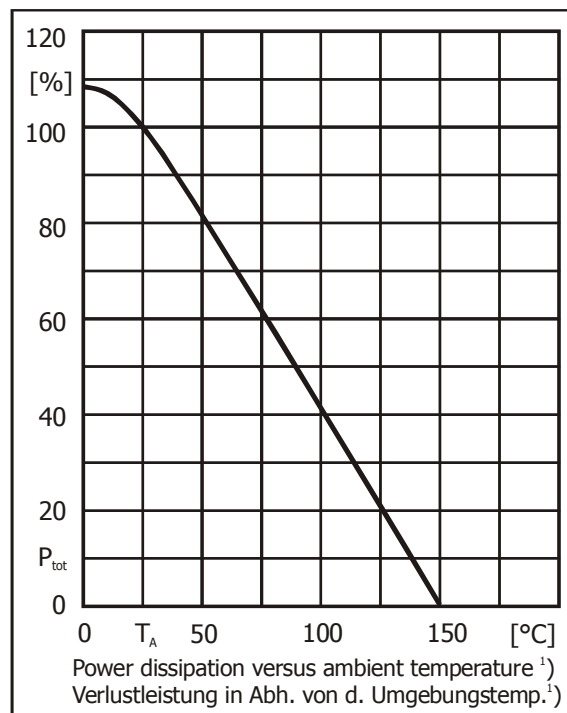
1 Mounted on P.C. board with 3 mm² copper pad at each terminal
Montage auf Leiterplatte mit 3 mm² Kupferbelag (Löt-pad) an jedem Anschluss

2 Tested with pulses $t_p = 300\ \mu\text{s}$, duty cycle $\leq 2\%$ – Gemessen mit Impulsen $t_p = 300\ \mu\text{s}$, Schaltverhältnis $\leq 2\%$

Characteristics ($T_j = 25^\circ\text{C}$)

 Kennwerte ($T_j = 25^\circ\text{C}$)

Collector-Base cutoff current – Kollektor-Basis-Reststrom					
- $V_{CB} = 100\text{ V}$, (E open)	MMBT5400	- I_{CBO}	–	–	50 nA
- $V_{CB} = 120\text{ V}$, (E open)	MMBT5401	- I_{CBO}	–	–	50 nA
- $V_{CB} = 100\text{ V}$, $T_j = 100^\circ\text{C}$, (E open)	MMBT5400	- I_{CBO}	–	–	50 μA
- $V_{CB} = 120\text{ V}$, $T_j = 100^\circ\text{C}$, (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					
- $V_{CE} = 5\text{ V}$, - $I_C = 200\text{ }\mu\text{A}$, $R_S = 10\text{ }\Omega$, $f = 1\text{ kHz}$	MMBT5400	F	–	–	–
	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			MMBT5550 / MMBT5551		
Marking - Stempelung			MMBT5400 = 2L MMBT5401 = 2Lx		



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