

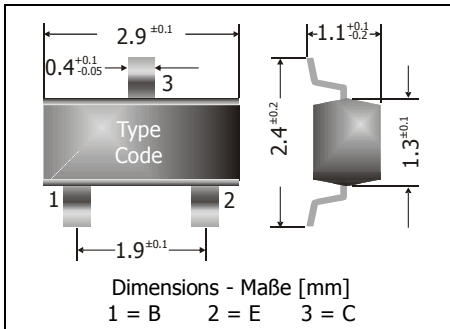
MMBT2907 / MMBT2907A

PNP

Surface Mount Si-Epi-Planar Switching Transistors
Si-Epi-Planar Schalttransistoren für die Oberflächenmontage

PNP

Version 2015-05-12



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 gegurtet auf Rolle

Maximum ratings (T_A = 25°C)

Grenzwerte (T_A = 25°C)

			MMBT2907	MMBT2907A
Collector-Emitter-volt. – Kollektor-Emitter-Spannung	B open	- V _{CEO}	40 V	60 V
Collector-Base-voltage – Kollektor-Basis-Spannung	E open	- V _{CBO}	60 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⁾					
- I _C = 0.1 mA, - V _{CE} = 10 V	MMBT2907	h _{FE}	35	–	–
	MMBT2907A	h _{FE}	75	–	–
- I _C = 1 mA, - V _{CE} = 10 V	MMBT2907	h _{FE}	50	–	–
	MMBT2907A	h _{FE}	100	–	–
- I _C = 10 mA, - V _{CE} = 10 V	MMBT2907	h _{FE}	75	–	–
	MMBT2907A	h _{FE}	100	–	–
- I _C = 500 mA, - V _{CE} = 10 V	MMBT2907	h _{FE}	30	–	–
	MMBT2907A	h _{FE}	50	–	–
- I _C = 150 mA, - V _{CE} = 10 V		h _{FE}	100	–	300
Collector-Emitter saturation voltage – Kollektor-Sättigungsspannung ²⁾					
- I _C = 150 mA, - I _B = 15 mA	MMBT2907	- V _{CEsat}	–	–	0.4 V
- I _C = 500 mA, - I _B = 50 mA	MMBT2907A	- V _{CEsat}	–	–	1.6 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 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.		
Collector-Emitter saturation voltage – Kollektor-Sättigungsspannung ²⁾					
- I _C = 150 mA, - I _B = 15 mA	- V _{CEsat}	–	–	0.4 V	
- I _C = 500 mA, - I _B = 50 mA	- V _{CEsat}	–	–	1.6 V	
Base-Emitter saturation voltage – Basis-Sättigungsspannung ²⁾					
- I _C = 150 mA, - I _B = 15 mA	- V _{BEsat}	–	–	1.3 V	
- I _C = 500 mA, - I _B = 50 mA	- V _{BEsat}	–	–	2.6 V	
Collector-Base cutoff current – Kollektor-Basis-Reststrom					
- V _{CB} = 50 V, (E open)	MMBT2907 MMBT2907A	- I _{CBO}	–	–	20 nA
		- I _{CBO}	–	–	10 nA
- V _{CB} = 50 V, T _j = 125°C, (E open)		- I _{CBO}	–	–	20 µA
Gain-Bandwidth Product – Transitfrequenz					
- V _{CE} = 20 V, - I _C = 50 mA, f = 100 MHz	f _T	200 MHz	–	–	
Collector-Base Capacitance – Kollektor-Basis-Kapazität					
- V _{CB} = 10 V, I _E = i _e = 0, f = 1 MHz	C _{CBO}	–	–	8 pF	
Emitter-Base Capacitance – Emitter-Basis-Kapazität					
- V _{EB} = 2 V, I _C = i _c = 0, f = 1 MHz	C _{EBO}	–	–	30 pF	
Switching times – Schaltzeiten (between 10% and 90% levels)					
turn on	t _{on}	–	–	45 ns	
delay time	- V _{CC} = 30 V, - V _{BE} = 1.5 V - I _C = 150 mA, - I _{B1} = 15 mA	t _d	–	–	10 ns
rise time		t _r	–	–	40 ns
turn off		t _{off}	–	–	100 ns
storage time	- V _{CC} = 30 V, - I _C = 150 mA, - I _{B1} = - I _{B2} = 15 mA	t _s	–	–	80 ns
fall time		t _f	–	–	30 ns
Thermal resistance junction to ambient air Wärmewiderstand Sperrschicht – umgebende Luft	R _{thA}	< 420 K/W ¹⁾			
Recommended complementary NPN transistors Empfohlene komplementäre NPN-Transistoren	MMBT2222 / MMBT2222A				
Marking - Stempelung	MMBT2907 = 2B MMBT2907A = 2F				

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 (Lötpad) an jedem Anschluss