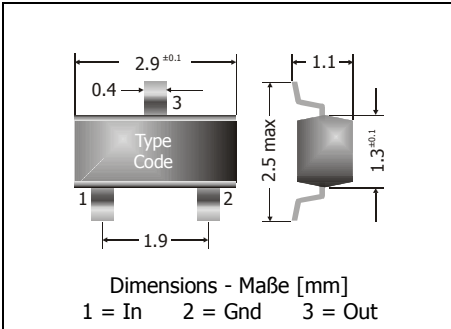


**MMBTRC116SS ... MMBTRC121SS**  
**Surface Mount Bias Resistor Transistors**  
**SMD Transistoren mit Eingangsspannungsteiler**

**NPN**

**NPN**

Version 2011-02-28



Power dissipation – Verlustleistung 200 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 getupet auf Rolle



**Maximum ratings and characteristics (T<sub>A</sub> = 25°C)**

**Grenz- und Kennwerte (T<sub>A</sub> = 25°C)**

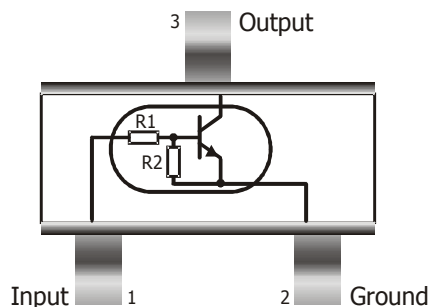
Resistor combinations – Widerstandskombinationen		R1 [kΩ]	R2 [kΩ]
	MMBTRC116SS	1	10
	MMBTRC117SS	2.2	2.2
	MMBTRC118SS	2.2	10
	MMBTRC119SS	4.7	10
	MMBTRC120SS	10	4.7
	MMBTRC121SS	47	10

Input-voltage – Eingangs-Spannung	V <sub>i</sub>	
	MMBTRC116SS	-5 ... +10 V
	MMBTRC117SS	-10 ... +12 V
	MMBTRC118SS	-5 ... +12 V
	MMBTRC119SS	-7 ... +20 V
	MMBTRC120SS	-10 ... +30 V
	MMBTRC121SS	-15 ... +40 V

Output voltage – Ausgangs-Spannung	V <sub>o</sub>	50 V
Output current – Ausgangs-Strom	I <sub>o</sub>	100 mA
Power dissipation – Verlustleistung	P <sub>tot</sub>	200 mW <sup>1)</sup>
Junction temperature – Sperrschichttemperatur	T <sub>j</sub>	-55...+150°C
Storage temperature – Lagerungstemperatur	T <sub>s</sub>	-55...+150°C



<sup>1</sup> Valid, if leads are kept at ambient temperature at a distance of 2 mm from case  
 Gültig wenn die Anschlussdrähte in 2 mm Abstand vom Gehäuse auf Umgebungstemperatur gehalten werden

**Characteristics (T<sub>j</sub> = 25°C)**
**Kennwerte (T<sub>j</sub> = 25°C)**

		<b>Min.</b>	<b>Typ.</b>	<b>Max.</b>
DC current gain – Kollektor-Basis-Stromverhältnis <sup>1)</sup> V <sub>0</sub> = 5 V, I <sub>0</sub> = 10 mA	G <sub>T</sub>			
	MMBTRC116SS	33	–	–
	MMBTRC117SS	20	–	–
	MMBTRC118SS	33	–	–
	MMBTRC119SS	30	–	–
	MMBTRC120SS	24	–	–
	MMBTRC121SS	33	–	–
Output cutoff current – Ausgangs-Reststrom	I <sub>O(off)</sub>	–	–	500 nA
Input current – Eingangsstrom V <sub>I</sub> = 5 V	I <sub>I</sub>			
	MMBTRC116SS	–	–	7.2 mA
	MMBTRC117SS	–	–	3.8 mA
	MMBTRC118SS	–	–	3.8 mA
	MMBTRC119SS	–	–	1.8 mA
	MMBTRC120SS	–	–	0.88 mA
	MMBTRC121SS	–	–	0.16 mA
Output voltage – Ausgangs-Spannung	V <sub>O(on)</sub>	–	–	0.3 V
Input voltage (on) – Eingangsspannung (Ein) V <sub>0</sub> = 0.3 V, I <sub>0</sub> = 20 mA V <sub>0</sub> = 0.3 V, I <sub>0</sub> = 20 mA V <sub>0</sub> = 0.3 V, I <sub>0</sub> = 20 mA V <sub>0</sub> = 0.3 V, I <sub>0</sub> = 20 mA V <sub>0</sub> = 0.3 V, I <sub>0</sub> = 2 mA V <sub>0</sub> = 0.3 V, I <sub>0</sub> = 2 mA	V <sub>I(on)</sub>			
	MMBTRC116SS	–	–	3 V
	MMBTRC117SS	–	–	3 V
	MMBTRC118SS	–	–	3 V
	MMBTRC119SS	–	–	2.5 V
	MMBTRC120SS	–	–	3 V
	MMBTRC121SS	–	–	5 V
Input resistor tolerance – Toleranz Eingangswiderstand	R1	-30%		+30%
Input voltage (off) – Eingangsspannung (Aus) V <sub>0</sub> = 5 V, I <sub>0</sub> = 0.1 mA	V <sub>I(off)</sub>			
	MMBTRC116SS	0.3		
	MMBTRC117SS	0.5		
	MMBTRC118SS	0.3		
	MMBTRC119SS	0.3		
	MMBTRC120SS	0.8		
	MMBTRC121SS	1		
Transition Frequency – Transitfrequenz (Transistor) V <sub>0</sub> = 10 V, I <sub>0</sub> = 5 mA	f <sub>T</sub>	–	250 MHz	–

1 Tested with pulses t<sub>p</sub> = 300 μs, duty cycle ≤ 2% – Gemessen mit Impulsen t<sub>p</sub> = 300 μs, Schaltverhältnis ≤ 2%