

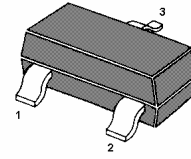
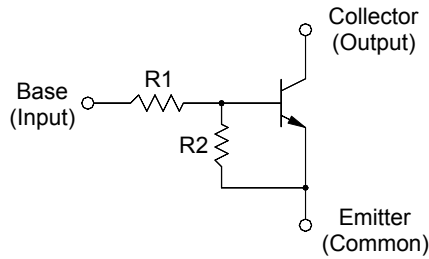
MMBTRC101SS...MMBTRC106SS

NPN Silicon Epitaxial Planar Transistor

for switching and interface circuit and drive circuit applications

Features

- With built-in bias resistors
- Simplify circuit design
- Reduce a quantity of parts and manufacturing process



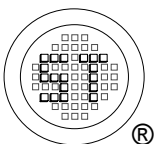
1. Base 2. Emitter 3. Collector
SOT-23 Plastic Package

Resistor Values

Type	R1 (KΩ)	R2 (KΩ)
MMBTRC101SS	4.7	4.7
MMBTRC102SS	10	10
MMBTRC103SS	22	22
MMBTRC104SS	47	47
MMBTRC105SS	2.2	47
MMBTRC106SS	4.7	47

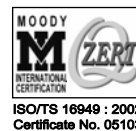
Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

Parameter		Symbol	Value	Unit
Output Voltage		V_o	50	V
Input Voltage	MMBTRC101SS	V_i	20, -10	V
	MMBTRC102SS		30, -10	
	MMBTRC103SS		40, -10	
	MMBTRC104SS		40, -10	
	MMBTRC105SS		12, -5	
	MMBTRC106SS		20, -5	
Output Current		I_o	100	mA
Total Power Dissipation		P_{tot}	200	mW
Junction Temperature		T_j	150	$^\circ\text{C}$
Storage Temperature Range		T_s	- 55 to + 150	$^\circ\text{C}$



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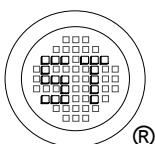


MMBTRC101SS...MMBTRC106SS

Characteristics at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain at $V_O = 5\text{ V}$, $I_O = 10\text{ mA}$	MMBTRC101SS MMBTRC102SS MMBTRC103SS MMBTRC104SS MMBTRC105SS MMBTRC106SS	G_I	30 50 70 80 80 80	- - - - - -	- - - - - -	- - - - - -
Output Cutoff Current at $V_O = 50\text{ V}$		$I_{O(OFF)}$	-	-	500	nA
Input Current at $V_I = 5\text{ V}$	MMBTRC101SS MMBTRC102SS MMBTRC103SS MMBTRC104SS MMBTRC105SS MMBTRC106SS	I_I	- - - - - -	- - - - - -	1.8 0.88 0.36 0.18 3.6 1.8	mA
Output Voltage at $I_O = 10\text{ mA}$, $I_I = 0.5\text{ mA}$		$V_{O(ON)}$	-	-	0.3	V
Input Voltage (ON) at $V_O = 0.2\text{ V}$, $I_O = 5\text{ mA}$	MMBTRC101SS MMBTRC102SS MMBTRC103SS MMBTRC104SS MMBTRC105SS MMBTRC106SS	$V_{I(ON)}$	- - - - - -	- - - - - -	2 2.4 3 5 1.1 1.3	V
Input Voltage (OFF) at $V_O = 5\text{ V}$, $I_O = 0.1\text{ mA}$	MMBTRC101SS~104SS MMBTRC105SS~106SS	$V_{I(OFF)}$	1 0.5	- -	- -	V
Transition Frequency at $V_O = 10\text{ V}$, $I_O = 5\text{ mA}$		$f_T^{1)}$	-	200	-	MHz

¹⁾ Characteristic of transistor only.



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ISO/TS 16949 : 2002
Certificate No. 05103



ISO 14001:2004
Certificate No. 71116



ISO 9001:2000
Certificate No. 0506098

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