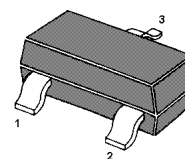
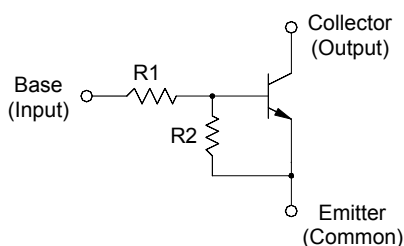


NPN Silicon Epitaxial Planar Transistor

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)
MMBTRC107SS	10	47
MMBTRC108SS	22	47
MMBTRC109SS	47	22

Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Output Voltage	V _O	50	V
Input Voltage	V _I	30, -6	V
		40, -7	
		40, -15	
Output Current	I _O	100	mA
Total Power Dissipation	P _{tot}	200	mW
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _S	- 55 to + 150	°C



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

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_o = 5\text{ V}$, $I_o = 10\text{ mA}$	MMBTRC107SS	80	-	-	-
	MMBTRC108SS	80	-	-	-
	MMBTRC109SS	70	-	-	-
Output Cutoff Current at $V_o = 50\text{ V}$	$I_{O(OFF)}$	-	-	500	nA
Input Current at $V_i = 5\text{ V}$	MMBTRC107SS	-	-	0.88	mA
	MMBTRC108SS	-	-	0.36	
	MMBTRC109SS	-	-	0.16	
Output Voltage at $I_o = 10\text{ mA}$, $I_i = 0.5\text{ mA}$	$V_{O(ON)}$	-	-	0.3	V
Input Voltage (ON) at $V_o = 0.2\text{ V}$, $I_o = 5\text{ mA}$	MMBTRC107SS	-	-	1.8	V
	MMBTRC108SS	-	-	2.6	
	MMBTRC109SS	-	-	5.8	
Input Voltage (OFF) at $V_o = 5\text{ V}$, $I_o = 0.1\text{ mA}$	MMBTRC107SS	0.5	-	-	V
	MMBTRC108SS	0.6	-	-	
	MMBTRC109SS	1.5	-	-	
Transition Frequency at $V_o = 10\text{ V}$, $I_o = 5\text{ mA}$	$f_T^{1)}$	-	200	-	MHz

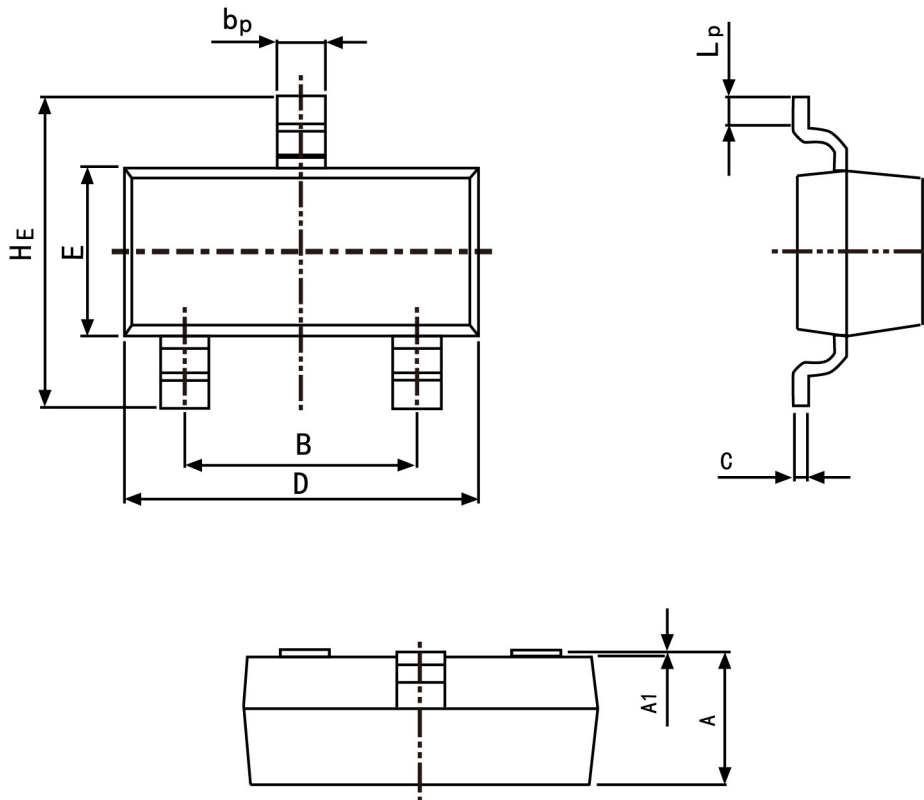
1) Characteristic of transistor only.



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



Symbol	Dimension in Millimeters	
	Min	Max
A	0.95	1.40
B	1.78	2.04
b_p	0.35	0.50
C	0.08	0.19
D	2.70	3.10
E	1.20	1.65
HE	2.20	3.00
A_1	0.100	0.013
L_p	0.20	0.50