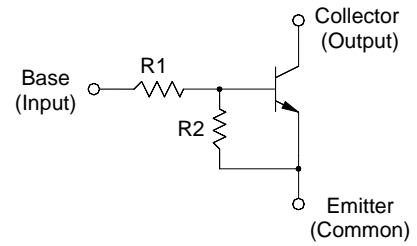




## MMBTRC107SS~MMBTRC109SS

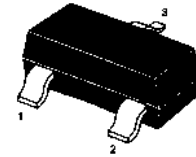
### NPN Silicon Epitaxial Planar Transistor

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

#### Resistor Values

Type	R1 (KΩ)	R2 (KΩ)	MARK
MMBTRC107SS	10	47	NH
MMBTRC108SS	22	47	NI
MMBTRC109SS	47	22	NJ

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

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	$^\circ\text{C}$
Storage Temperature Range	$T_s$	- 55 to + 150	$^\circ\text{C}$



### 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 $G_I$ MMBTRC108SS MMBTRC109SS	80	-	-	-
		80	-	-	-
		70	-	-	-
Output Cutoff Current at $V_O = 50\text{ V}$	$I_{O(OFF)}$	-	-	500	nA
Input Current at $V_I = 5\text{ V}$	MMBTRC107SS $I_I$ MMBTRC108SS MMBTRC109SS	-	-	0.88	mA
		-	-	0.36	
		-	-	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 $V_{I(ON)}$ MMBTRC108SS MMBTRC109SS	-	-	1.8	V
		-	-	2.6	
		-	-	5.8	
Input Voltage (OFF) at $V_O = 5\text{ V}$ , $I_O = 0.1\text{ mA}$	MMBTRC107SS $V_{I(OFF)}$ MMBTRC108SS MMBTRC109SS	0.5	-	-	V
		0.6	-	-	
		1.5	-	-	
Transition Frequency at $V_O = 10\text{ V}$ , $I_O = 5\text{ mA}$	$f_T^{1)}$	-	200	-	MHz

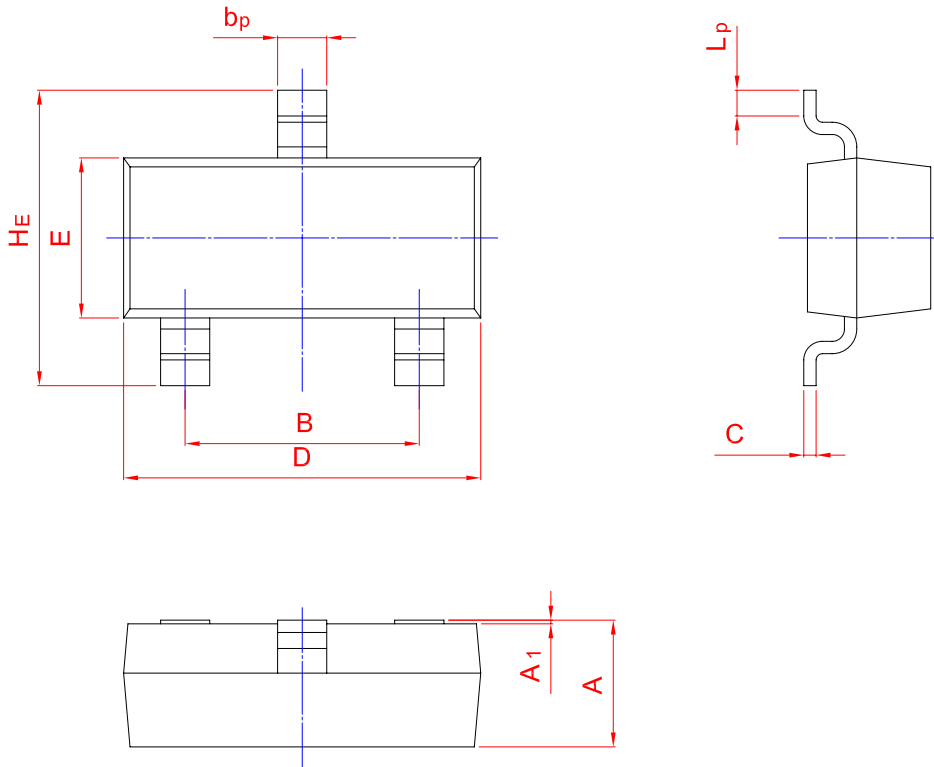
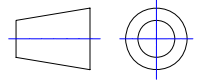
1) Characteristic of transistor only.



## PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20