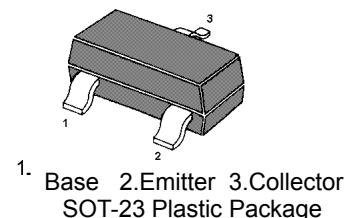
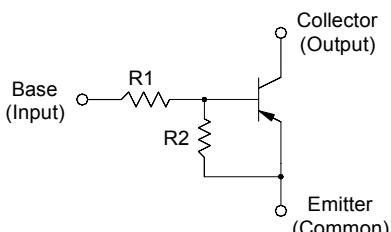


PNP Silicon Epitaxial Planar Transistor

for switching, interface circuit and drive circuit applications

Features

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



Resistor Values/Marking Code

Type	R1 (KΩ)	R2 (KΩ)	Marking
MMBTRA107SS	10	47	7BT
MMBTRA108SS	22	47	8BT
MMBTRA109SS	47	22	9BT

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	°C
Storage Temperature Range	T_s	- 55 to + 150	°C

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

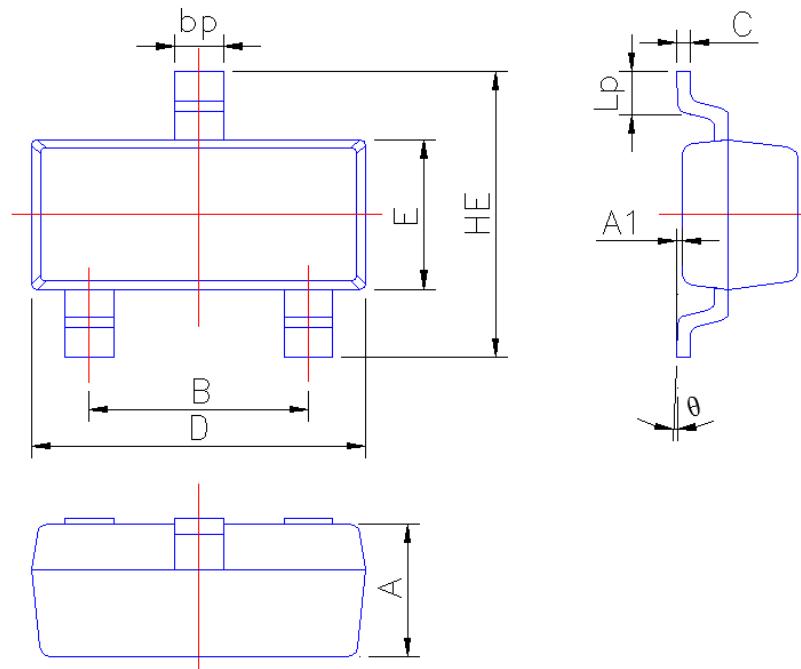
Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_O = 5 \text{ V}$, $-I_O = 10 \text{ mA}$ MMBTRA107SS MMBTRA108SS MMBTRA109SS	G_I	80	-	-	-
		80	-	-	-
		70	-	-	-
Output Cutoff Current at $-V_O = 50 \text{ V}$	$-I_{O(\text{OFF})}$	-	-	500	nA
Input Current at $-V_I = 5 \text{ V}$ MMBTRA107SS MMBTRA108SS MMBTRA109SS	$-I_I$	-	-	0.88	mA
		-	-	0.36	
		-	-	0.16	
Output Voltage at $-I_O = 10 \text{ mA}$, $-I_I = 0.5 \text{ mA}$	$-V_{O(\text{ON})}$	-	-	0.3	V
Input Voltage (ON) at $-V_O = 0.2 \text{ V}$, $-I_O = 5 \text{ mA}$ MMBTRA107SS MMBTRA108SS MMBTRA109SS	$-V_{I(\text{ON})}$	-	-	1.8	V
		-	-	2.6	
		-	-	5.8	
Input Voltage (OFF) at $-V_O = 5 \text{ V}$, $-I_O = 0.1 \text{ mA}$ MMBTRA107SS MMBTRA108SS MMBTRA109SS	$-V_{I(\text{OFF})}$	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



Symbol	Dimension in Millimeters	
	Min	Max
A	0.90	1.10
A1	0.013	0.100
B	1.80	2.00
bp	0.35	0.50
C	0.09	0.150
D	2.80	3.00
E	1.20	1.40
HE	2.20	2.80
Lp	0.20	0.50
θ	0°	5°