

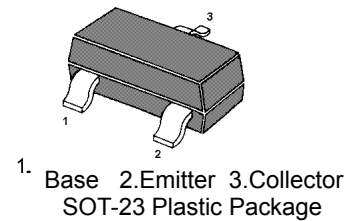
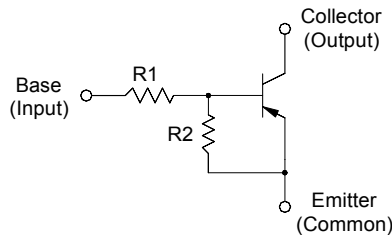


PNP Silicon Epitaxial Planar Transistor

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 °C)

Parameter		Symbol	Value	Unit
Output Voltage		-V _O	50	V
Input Voltage	MMBTRA107SS	V _I	- 30, 6	V
	MMBTRA108SS		- 40, 7	
	MMBTRA109SS		- 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 $-V_o = 5\text{ V}$, $-I_o = 10\text{ mA}$	MMBTRA107SS MMBTRA108SS MMBTRA109SS G_I	80 80 70	- - -	- - -	- - -
Output Cutoff Current at $-V_o = 50\text{ V}$	$-I_{O(OFF)}$	-	-	500	nA
Input Current at $-V_i = 5\text{ V}$	MMBTRA107SS MMBTRA108SS MMBTRA109SS $-I_i$	- - -	- - -	0.88 0.36 0.16	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 $-V_o = 0.2\text{ V}$, $-I_o = 5\text{ mA}$	MMBTRA107SS MMBTRA108SS MMBTRA109SS $-V_{I(ON)}$	- - -	- - -	1.8 2.6 5.8	V
Input Voltage (OFF) at $-V_o = 5\text{ V}$, $-I_o = 0.1\text{ mA}$	MMBTRA107SS MMBTRA108SS MMBTRA109SS $-V_{I(OFF)}$	0.5 0.6 1.5	- - -	- - -	V
Transition Frequency at $-V_o = 10\text{ V}$, $-I_o = 5\text{ mA}$	f_T ¹⁾	-	200	-	MHz

1) Characteristic of transistor only.