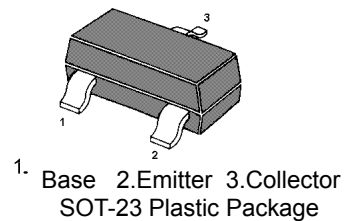
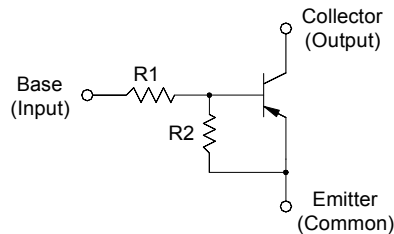


MMBTRA107SS...MMBTRA109SS PNP Silicon Epitaxial Planar Transistor

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

Type	R1 (KΩ)	R2 (KΩ)	Marking Code
MMBTRA107SS	10	47	YC
MMBTRA108SS	22	47	YD
MMBTRA109SS	47	22	YE

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

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

Parameter		Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_O = 5\text{ V}$, $-I_O = 10\text{ mA}$	MMBTRA107SS	G_I	80	-	-	-
	MMBTRA108SS		80	-	-	-
	MMBTRA109SS		70	-	-	-
Output Cutoff Current at $-V_O = 50\text{ V}$		$-I_{O(OFF)}$	-	-	500	nA
Input Current at $-V_I = 5\text{ V}$	MMBTRA107SS	$-I_I$	-	-	0.88	mA
	MMBTRA108SS		-	-	0.36	
	MMBTRA109SS		-	-	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 $-V_O = 0.2\text{ V}$, $-I_O = 5\text{ mA}$	MMBTRA107SS	$-V_{I(ON)}$	-	-	1.8	V
	MMBTRA108SS		-	-	2.6	
	MMBTRA109SS		-	-	5.8	
Input β & β	MMBTRA107SS	$R1$	7	10	13	k Ω
	MMBTRA108SS	$R1$	15.4	22	28.6	k Ω
	MMBTRA109SS	$R1$	32.9	47	61.1	k Ω
β & β ratio	MMBTRA107SS	$R2/R1$	3.7	4.7	5.7	
	MMBTRA108SS	$R2/R1$	1.7	2.1	2.6	
	MMBTRA109SS	$R2/R1$	0.37	0.47	0.57	
Input Voltage (OFF) at $-V_O = 5\text{ V}$, $-I_O = 0.1\text{ mA}$	MMBTRA107SS	$-V_{I(OFF)}$	0.5	-	-	V
	MMBTRA108SS		0.6	-	-	
	MMBTRA109SS		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

