

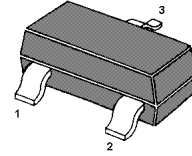
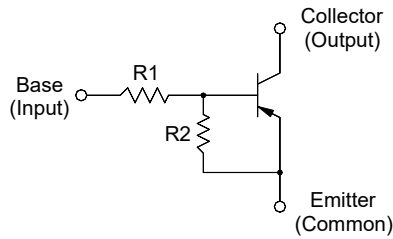
MMBTRA107SS...MMBTRA109SS

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



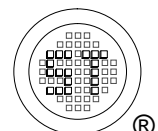
1. Base 2. Emitter 3. Collector
SOT-23 Plastic Package

Resistor Values

Type	R1 (KΩ)	R2 (KΩ)
MMBTRA107SS	10	47
MMBTRA108SS	22	47
MMBTRA109SS	47	22

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_{Stg}	- 55 to + 150	°C

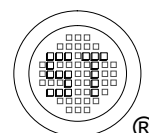


MMBTRA107SS...MMBTRA109SS

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	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	-	-	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	-	-	1.8	V
	MMBTRA108SS	-	-	2.6	
	MMBTRA109SS	-	-	5.8	
Input Voltage (OFF) at $-V_o = 5\text{ V}$, $-I_o = 0.1\text{ mA}$	MMBTRA107SS	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

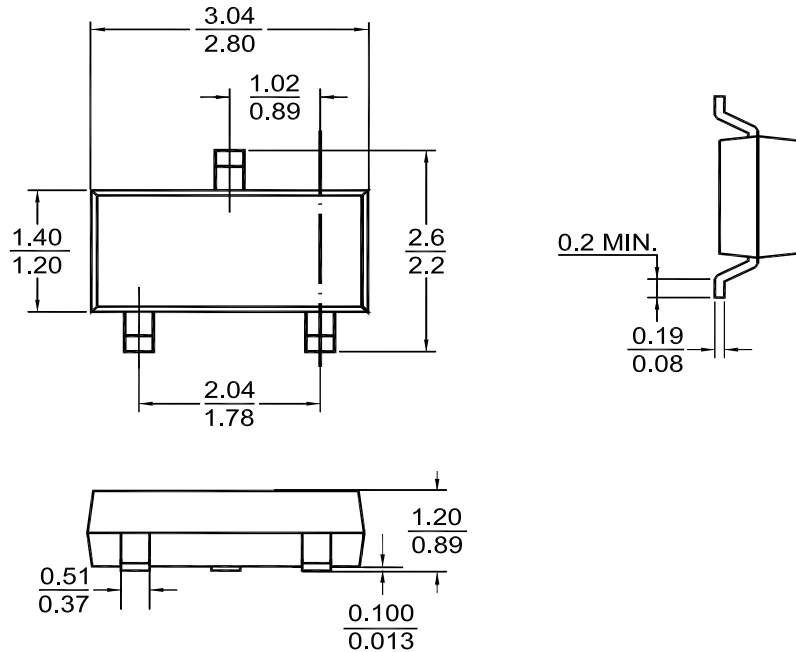
¹⁾ Characteristic of transistor only.



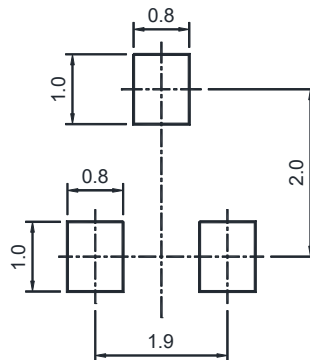
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Package Outline (Dimensions in mm)

SOT-23



Recommended Soldering Footprint



Packing information

Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
SOT-23	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000

Marking information

- " ** " = Part No.
- " YM " = Date Code Marking
- " Y " = Year
- " M " = Month
- Font type: Arial

