

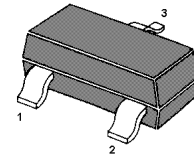
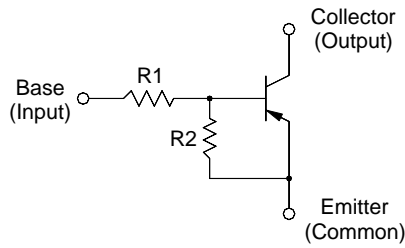


PNP Silicon Epitaxial Planar Transistor

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 Plastic Package

Resistor Values

Type	R1 (KΩ)	R2 (KΩ)
MMBTRA101SS	4.7	4.7
MMBTRA102SS	10	10
MMBTRA103SS	22	22
MMBTRA104SS	47	47
MMBTRA105SS	2.2	47
MMBTRA106SS	4.7	47

Absolute Maximum Ratings (T_a = 25 °C)

Parameter	Symbol	Value	Unit
Output Voltage	-V _o	50	V
Input Voltage	-V _i	20, -10	V
		30, -10	
		40, -10	
		40, -10	
		12, -5	
		20, -5	
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

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

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_O = 5\text{ V}$, $-I_O = 10\text{ mA}$					
MMBTRA101SS	G _I	30	-	-	-
MMBTRA102SS		50	-	-	-
MMBTRA103SS		70	-	-	-
MMBTRA104SS		80	-	-	-
MMBTRA105SS		80	-	-	-
MMBTRA106SS		80	-	-	-
Output Cutoff Current at $-V_O = 50\text{ V}$	$-I_{O(OFF)}$	-	-	500	nA
Input Current at $-V_I = 5\text{ V}$					
MMBTRA101SS	-I _I	-	-	1.8	mA
MMBTRA102SS		-	-	0.88	
MMBTRA103SS		-	-	0.36	
MMBTRA104SS		-	-	0.18	
MMBTRA105SS		-	-	3.6	
MMBTRA106SS		-	-	1.8	
Output Voltage at $-I_O = 10\text{ mA}$, $-I_I = 0.5\text{ mA}$	$-V_{O(ON)}$	-	-	0.3	V
Input Voltage (ON) at $-V_O = 0.2\text{ V}$, $-I_O = 5\text{ mA}$					
MMBTRA101SS	$-V_{I(ON)}$	-	-	2	V
MMBTRA102SS		-	-	2.4	
MMBTRA103SS		-	-	3	
MMBTRA104SS		-	-	5	
MMBTRA105SS		-	-	1.1	
MMBTRA106SS		-	-	1.3	
Input Voltage (OFF) at $-V_O = 5\text{ V}$, $-I_O = 0.1\text{ mA}$					
MMBTRA101SS~104SS	$-V_{I(OFF)}$	1	-	-	V
MMBTRA105SS~106SS		0.5	-	-	
Transition Frequency at $-V_O = 10\text{ V}$, $-I_O = 5\text{ mA}$	f _T ¹⁾	-	200	-	MHz

¹⁾ Characteristic of transistor only.

