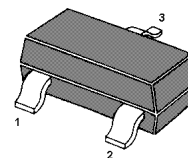
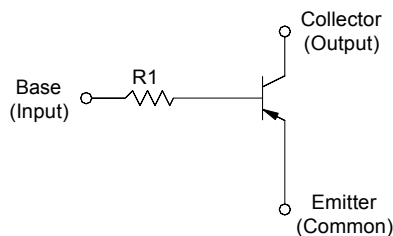


## MMBTRA110SS...MMBTRA114SS PNP Silicon Epitaxial Planar Transistor

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)			0 D U N L Q J & R G H
	Min.	Typ.	Max.	
MMBTRA110SS		4.7		5 <
MMBTRA111SS		10	13	5 =
MMBTRA112SS		100	130	; \$
MMBTRA113SS		22	2 .	; %
MMBTRA114SS		47	61.1	; &

### Absolute Maximum Ratings (T<sub>a</sub> = 25 °C)

Parameter	Symbol	Value	Unit
Collector Base Voltage	-V <sub>CBO</sub>	50	V
Collector Emitter Voltage	-V <sub>CEO</sub>	50	V
Emitter Base Voltage	-V <sub>EBO</sub>	5	V
Collector Current	-I <sub>C</sub>	100	mA
Power Dissipation	P <sub>tot</sub>	200	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>s</sub>	- 55 to + 150	°C

### Characteristics at T<sub>a</sub> = 25 °C

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at -V <sub>CE</sub> = 5 V, -I <sub>C</sub> = 1 mA	h <sub>FE</sub>	120	-	-	-
Collector Cutoff Current at -V <sub>CB</sub> = 50 V	-I <sub>CBO</sub>	-	-	100	nA
Emitter Cutoff Current at -V <sub>EB</sub> = 5 V	-I <sub>EBO</sub>	-	-	100	nA
Collector Emitter Saturation Voltage at -I <sub>C</sub> = 10 mA, -I <sub>B</sub> = 0.5 mA	-V <sub>CE(sat)</sub>	-	-	0.3	V
Transition Frequency at -V <sub>CE</sub> = 10 V, -I <sub>C</sub> = 5 mA	f <sub>T</sub>	-	250	-	MHz

## PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23

