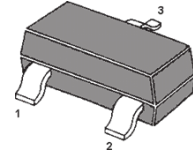
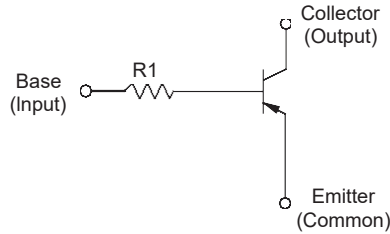


# MMBTRA110SS...MMBTRA114SS PNP Silicon Epitaxial Planar Transistor

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)	Marking Code
MMBTRA110SS	4.7	RY
MMBTRA111SS	10	RZ
MMBTRA112SS	100	XA
MMBTRA113SS	22	XB
MMBTRA114SS	47	XC

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	$-V_{CBO}$	50	V
Collector Emitter Voltage	$-V_{CEO}$	50	V
Emitter Base Voltage	$-V_{EBO}$	5	V
Collector Current	$-I_C$	100	mA
Power Dissipation	$P_{tot}$	200	mW
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_s$	- 55 to + 150	°C

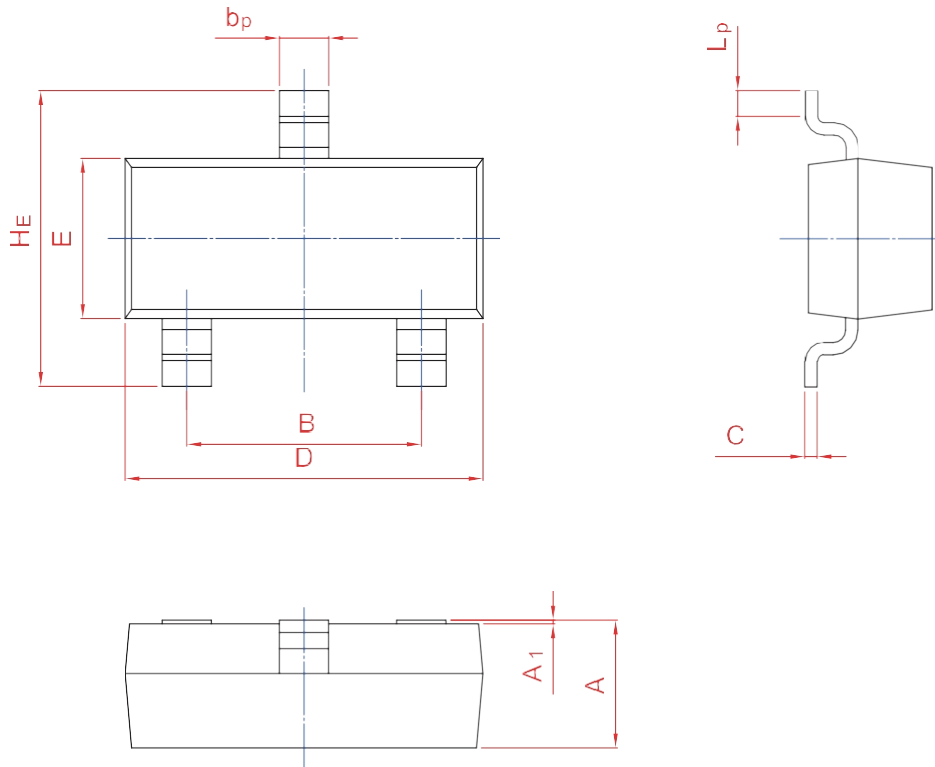
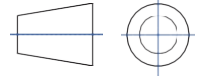
## Characteristics at $T_a = 25\text{ °C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $-V_{CE} = 5\text{ V}$ , $-I_C = 1\text{ mA}$	$h_{FE}$	120	-	-	-
Collector Cutoff Current at $-V_{CB} = 50\text{ V}$	$-I_{CBO}$	-	-	100	nA
Emitter Cutoff Current at $-V_{EB} = 5\text{ V}$	$-I_{EBO}$	-	-	100	nA
Collector Emitter Saturation Voltage at $-I_C = 10\text{ mA}$ , $-I_B = 0.5\text{ mA}$	$-V_{CE(sat)}$	-	-	0.3	V
Transition Frequency at $-V_{CE} = 10\text{ V}$ , $-I_C = 5\text{ mA}$	$f_T$	-	250	-	MHz

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	b <sub>p</sub>	C	D	E	H <sub>E</sub>	A <sub>1</sub>	L <sub>p</sub>
mm	1.40	2.04	0.50	0.19	3.10	1.65	3.00	0.100	0.50
	0.95	1.78	0.35	0.08	2.70	1.20	2.20	0.013	0.20