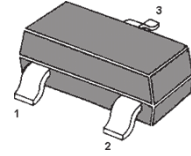
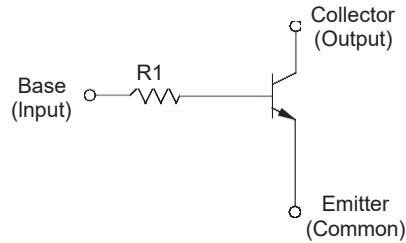


MMBTRC110SS...MMBTRC114SS NPN Silicon Epitaxial Planar Transistor

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 (K Ω)	Marking Code
MMBTRC110SS	4.7	XD
MMBTRC111SS	10	XE
MMBTRC112SS	100	XF
MMBTRC113SS	22	XH
MMBTRC114SS	47	XJ

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

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	$^\circ\text{C}$
Storage Temperature Range	T_s	- 55 to + 150	$^\circ\text{C}$

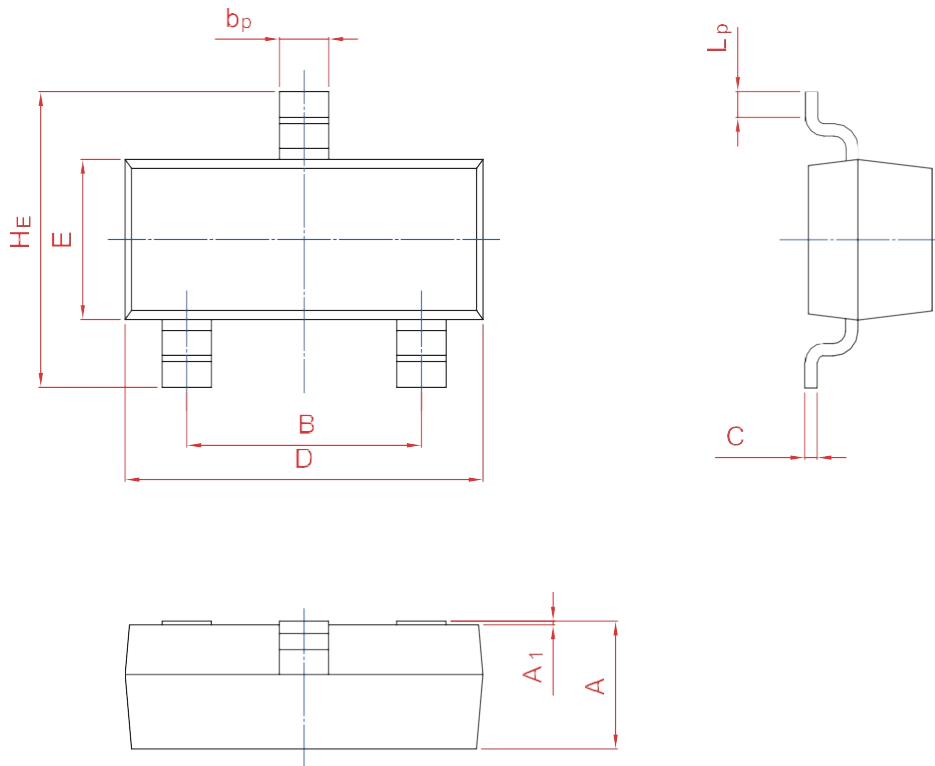
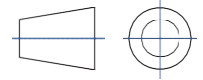
Characteristics at $T_a = 25\text{ }^\circ\text{C}$

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_p	C	D	E	H_E	A_1	L_p
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