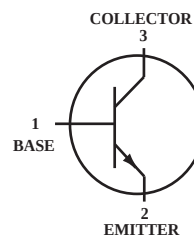


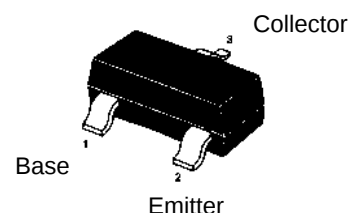


MMBTSD123 NPN Silicon Epitaxial Planar Transistor

Low saturation medium current application
Suitable for low voltage large current drivers



Marking :123



SOT-23

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

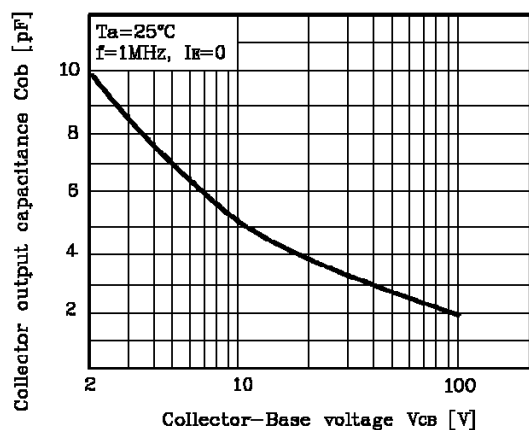
Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	20	V
Collector Emitter Voltage	V_{CEO}	15	V
Emitter Base Voltage	V_{EBO}	6.5	V
Collector Current	I_C	1	A
Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	150	$^{\circ}\text{C}$
Storage Temperature Range	T_S	- 55 to + 150	$^{\circ}\text{C}$

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

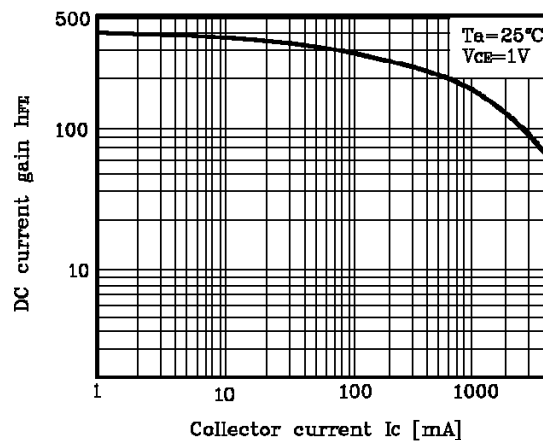
Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE} = 1\text{ V}$, $I_C = 100\text{ mA}$	h_{FE}	150	-	-	-
Collector Cutoff Current at $V_{CB} = 20\text{ V}$	I_{CBO}	-	-	100	nA
Emitter Cutoff Current at $V_{EB} = 6\text{ V}$	I_{EBO}	-	-	100	nA
Collector Base Breakdown Voltage at $I_C = 50\text{ }\mu\text{A}$	$V_{(BR)CBO}$	20	-	-	V
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	15	-	-	V
Emitter Base Breakdown Voltage at $I_E = 50\text{ }\mu\text{A}$	$V_{(BR)EBO}$	6.5	-	-	V
Collector Emitter Saturation Voltage at $I_C = 500\text{ mA}$, $I_B = 50\text{ mA}$	$V_{CE(sat)}$	-	-	0.3	V
Transition Frequency at $V_{CE} = 5\text{ V}$, $I_C = 50\text{ mA}$	f_T	-	260	-	MHz
Output Capacitance at $V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{OB}	-	5	-	pF



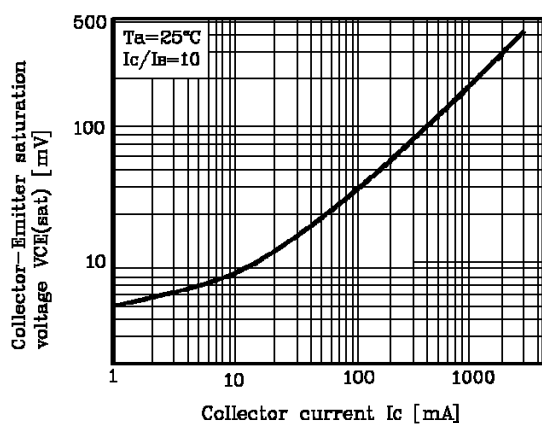
$C_{ob}-V_{CB}$



$h_{FE}-I_C$



$V_{CE(sat)}-I_C$

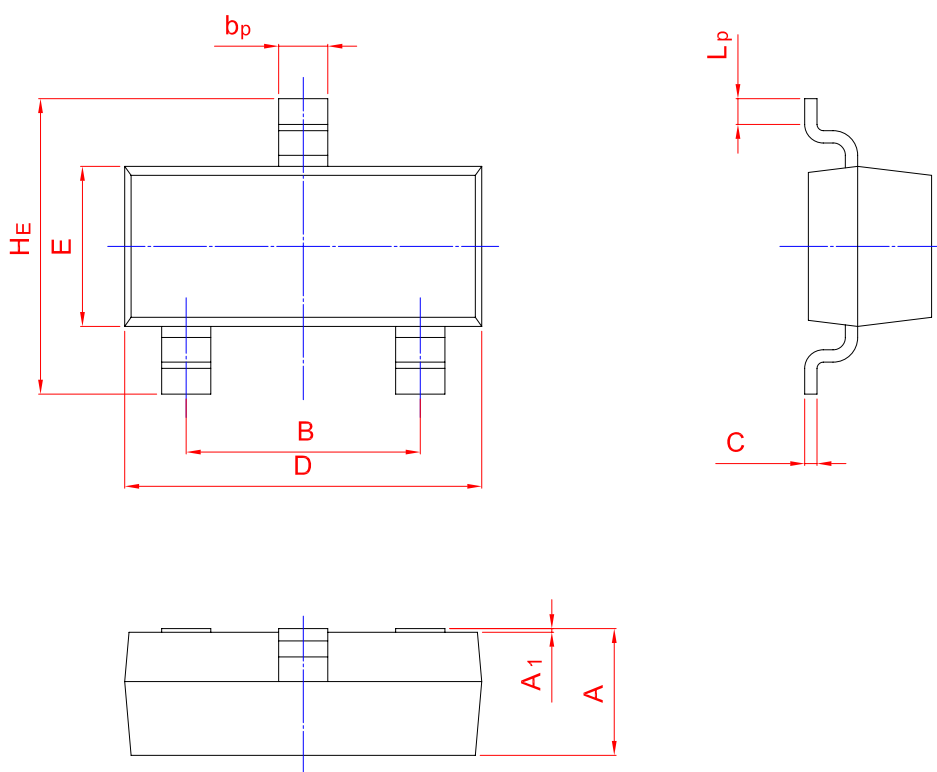
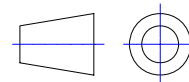




PACKAGE OUTLINE

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 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20