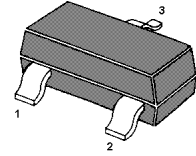


MMBT13001

NPN Silicon Epitaxial Planar Transistor

MARKING:BJ



1. Base 2. Emitter 3. Collector
TO-23 Plastic Package

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

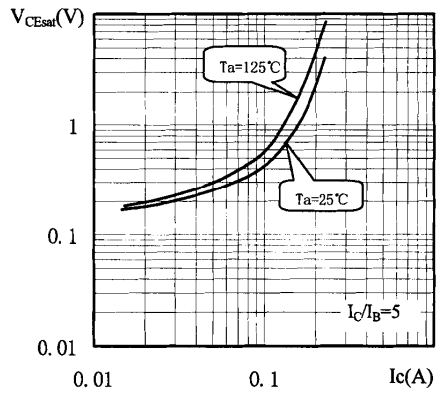
Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	700	V
Collector Emitter Voltage	V_{CEO}	420	V
Emitter Base Voltage	V_{EBO}	10	V
Collector Current	I_C	150	mA
Power Dissipation	P_{tot}	300	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 55 to + 150	$^\circ\text{C}$

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

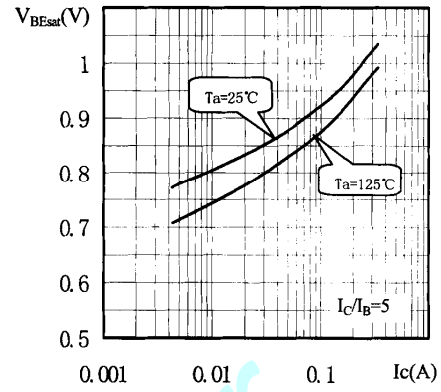
Parameter	Symbol	Min.	Max.	Unit
DC Current Gain at $V_{CE} = 20\text{ V}$, $I_C = 10\text{ mA}$	h_{FE}	15	25	-
Collector Base Cutoff Current at $V_{CB} = 700\text{ V}$	I_{CBO}	-	100	μA
Collector Emitter Cutoff Current at $V_{CE} = 420\text{ V}$	I_{CEO}	-	100	μA
Emitter Base Cutoff Current at $V_{EB} = 10\text{ V}$	I_{EBO}	-	100	μA
Collector Base Breakdown Voltage at $I_C = 100\text{ }\mu\text{A}$	$V_{(BR)CBO}$	700	-	V
Collector Emitter Breakdown Voltage at $I_C = 1\text{ mA}$	$V_{(BR)CEO}$	420	-	V
Emitter Base Breakdown Voltage at $I_E = 100\text{ }\mu\text{A}$	$V_{(BR)EBO}$	10	-	V
Collector Emitter Saturation Voltage at $I_C = 50\text{ mA}$, $I_B = 10\text{ mA}$	$V_{CE(sat)}$	-	1.05	V
Base Emitter Saturation Voltage at $I_C = 50\text{ mA}$, $I_B = 10\text{ mA}$	$V_{BE(sat)}$	-	1.55	V
Transition Frequency at $V_{CE} = 10\text{ V}$, $I_C = 50\text{ mA}$, $f = 1\text{ MHz}$	f_T	5	-	MHz
Storage Time at UI9600, $I_C = 100\text{ mA}$	t_s	-	3	μs
Rise Time at UI9600, $I_C = 100\text{ mA}$	t_r	-	1	μs
Fall Time at UI9600, $I_C = 100\text{ mA}$	t_f	-	1	μs

Typical Characteristics

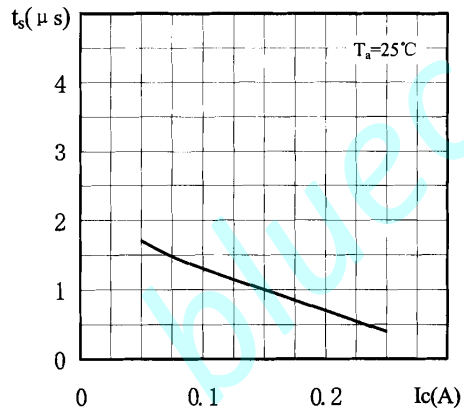
$V_{CE(sat)}-I_C$ Characteristics(Typical)



$V_{BE(sat)}-I_C$ Characteristics(Typical)



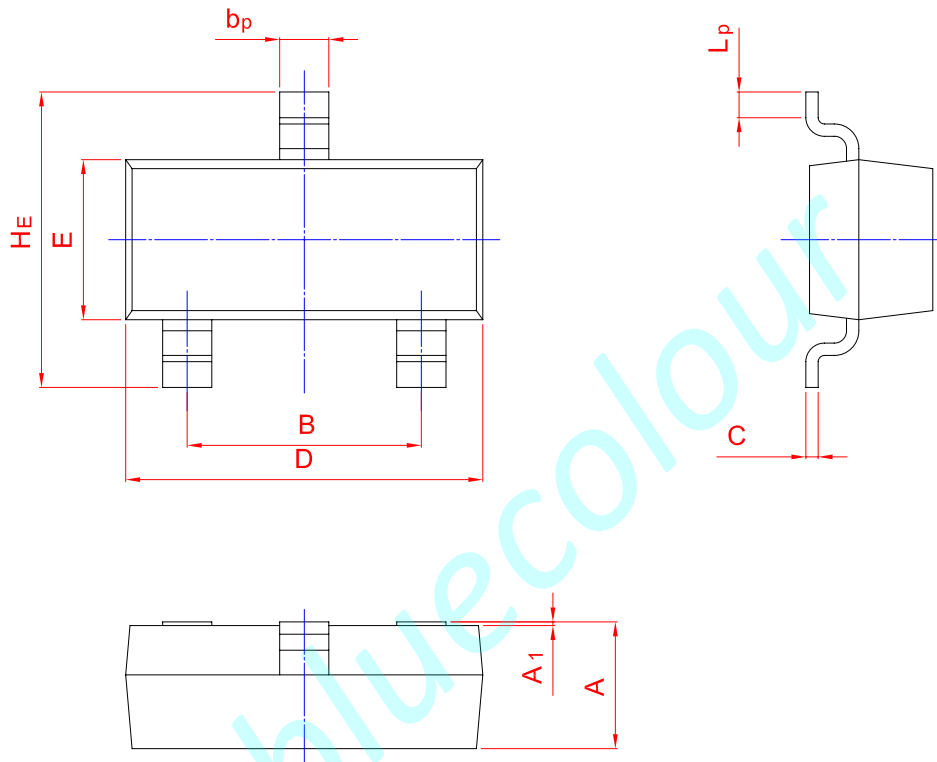
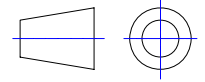
t_s-I_C Characteristics(Typical)



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	bp	C	D	E	HE	A1	Lp
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