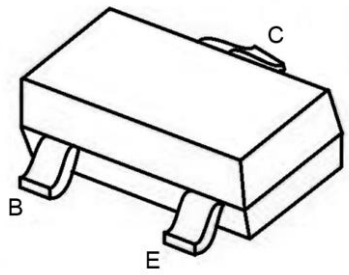
MMBTA42 Transistor(NPN)

SOT-23



Feature

- For Switching and Amplifier Applications
- Complementary PNP Type Available(MMBTA92)

Marking: 1D

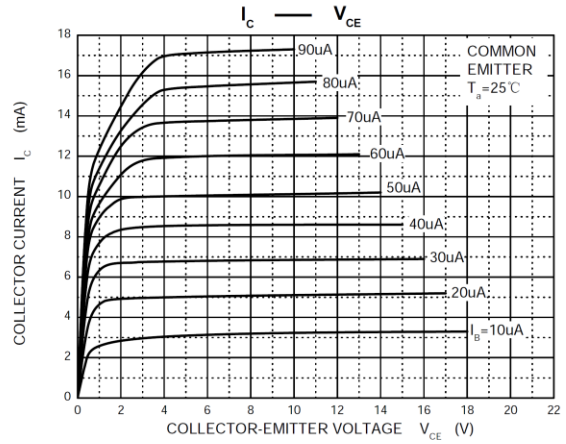
MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

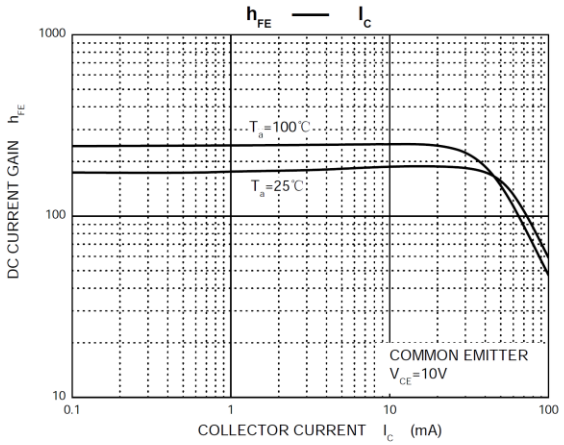
Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	300	V
Collector-Emitter Voltage	V_{CEO}	300	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current -Continuous	I_C	0.3	A
Power Dissipation	P_d	0.35	W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

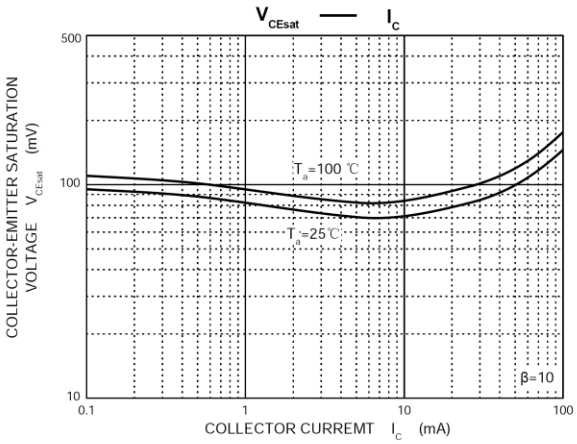
ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise noted)

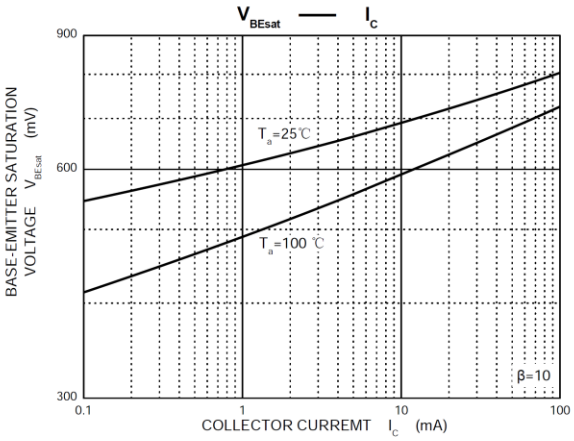
Parameter	Symbol	Test Condition	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA ,I_E=0	300		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA , I_B=0	300		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=100μA,I_C=0	5		V
Collector cut-off current	I_{CBO}	V_{CB}=200V, I_E=0		250	nA
Emitter cut-off current	I_{EBO}	V_{EB}=5V, I_C=0		100	nA
DC current gain	h_{FE}	V_{CE}=10V, I_C=1mA	60		
		V_{CE}=10V, I_C=10mA	100	200	
		V_{CE}=10V, I_C=30mA	60		
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=20mA, I_B= 2mA		0.2	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=20mA, I_B= 2mA		0.9	V
Transition frequency	f_T	V_{CE}= 20V, I_C=10mA,f =30MHz	50		MHZ

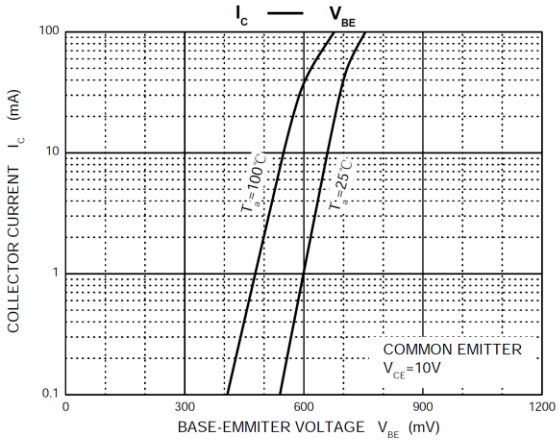
Typical Characteristics

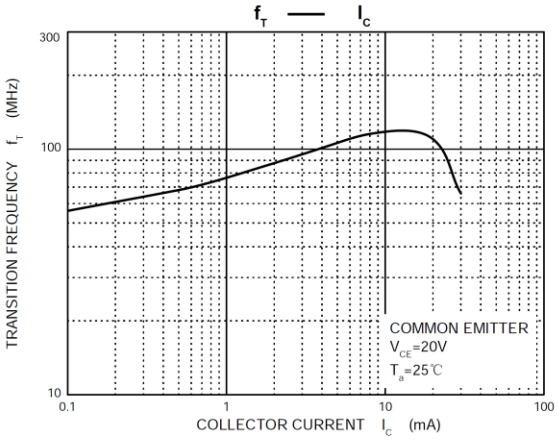


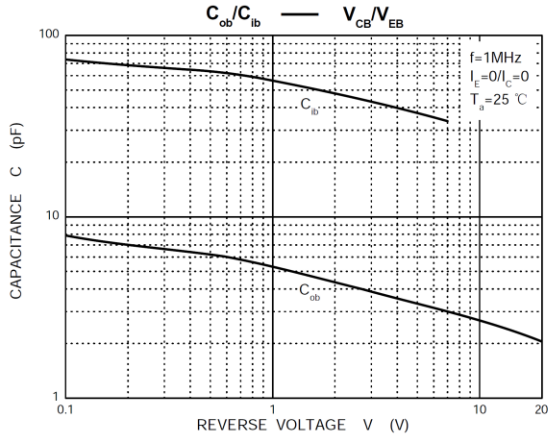


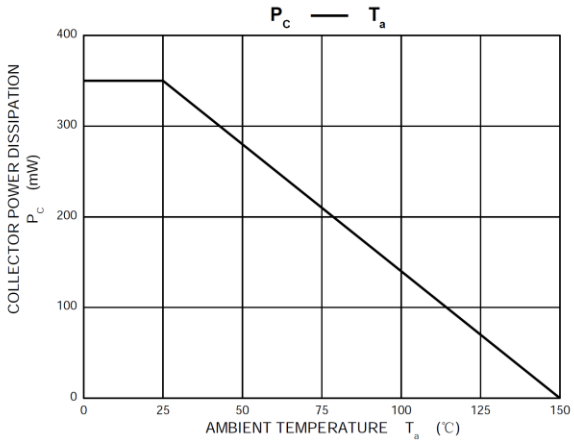




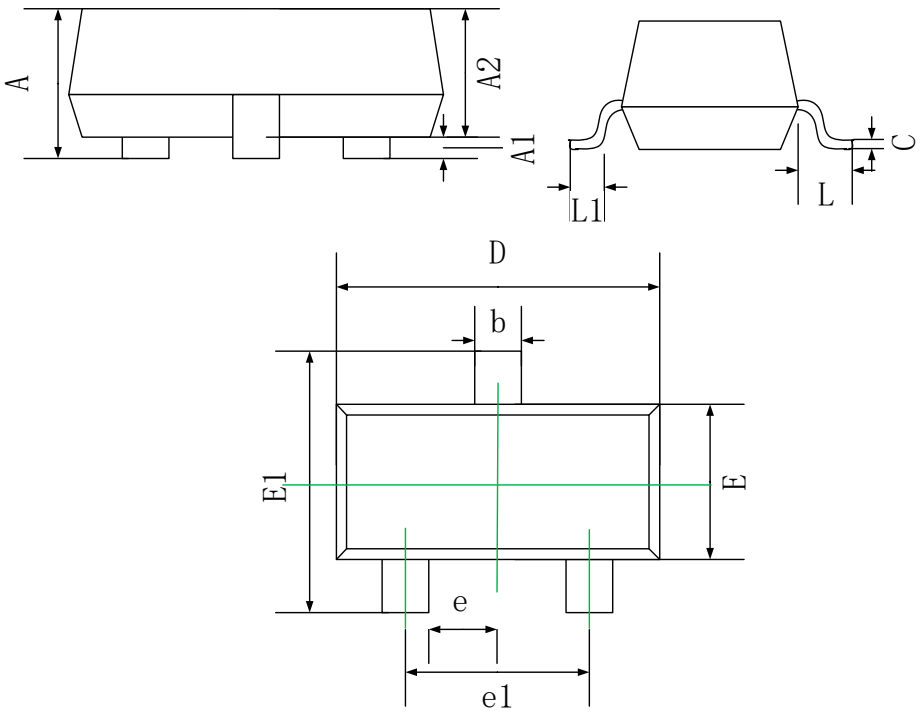






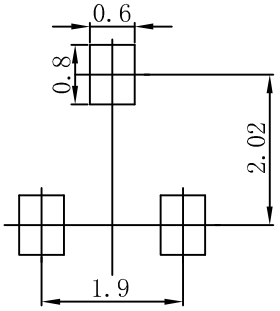


SOT-23 Package Information



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	0.90	1.15
A1	0.00	0.10
A2	0.90	1.05
b	0.30	0.50
c	0.08	0.15
D	2.80	3.00
E	1.20	1.40
E1	2.25	2.55
e	0.95 REF.	
e1	1.80	2.00
L	0.55 REF.	
L1	0.30	0.50

SOT-23 Suggested Pad Layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:± 0.05mm.
3.The pad layout is for reference purposes only.