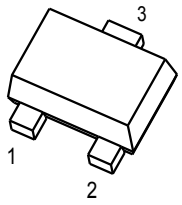
迈拓电子
MAITUO ELECTRONIC

MMBT2222AM TRANSISTOR (NPN)



1. BASE
2.EMITTER
3.COLLECTOR

FEATURES

- Epitaxial planar die construction

MARKING: 1P

SOT-723

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	75	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	0.5	A
P_C	Power Dissipation	100	mW
$R_{\Theta JA}$	Thermal Resistance from Junction to Ambient	1250	℃/W
T_J,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

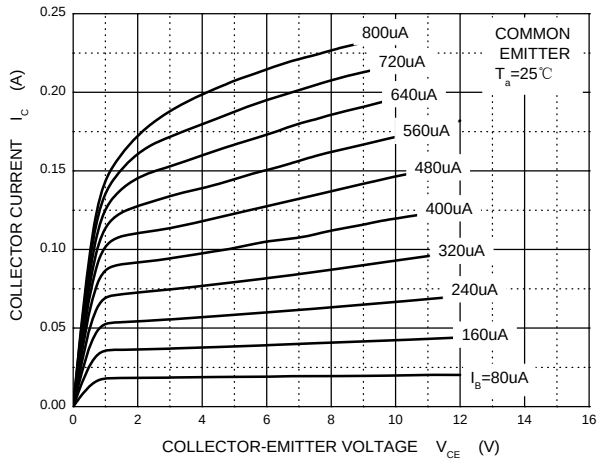
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10μA, I_E=0	75			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$*	I_C=10mA, I_B=0	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	6			V
Collector cut-off current	I_{CBO}	V_{CB}=60V, I_E=0			0.01	μA
Collector cut-off current	I_{CEX}	V_{CE}=30V,$V_{EB(off)}$=3V			0.01	μA
Emitter cut-off current	I_{EBO}	V_{EB}=3V, I_C=0			0.01	μA
DC current gain	h_{FE}*	V_{CE}=10V, I_C= 150mA	100		300	
		V_{CE}=10V, I_C= 0.1mA	40			
		V_{CE}=10V, I_C= 500mA	42			
Collector-emitter saturation voltage	$V_{CE(sat)}$*	I_C=500 mA, I_B= 50mA			1	V
		I_C=150 mA, I_B=15mA			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$*	I_C=500 mA, I_B= 50mA			2.0	V
		I_C=150 mA, I_B=15mA			1.2	V
Transition frequency	f_T	V_{CE}=20V, I_C= 20mA, f=100MHz	300			MHz
Delay time	t_d	V_{CC}=30V, $V_{BE(off)}$=-0.5V I_C=150mA , I_{B1}= 15mA			10	ns
Rise time	t_r				25	ns
Storage time	t_S	V_{CC}=30V, I_C=150mA I_{B1}=-I_{B2}=15mA			225	ns
Fall time	t_f				60	ns

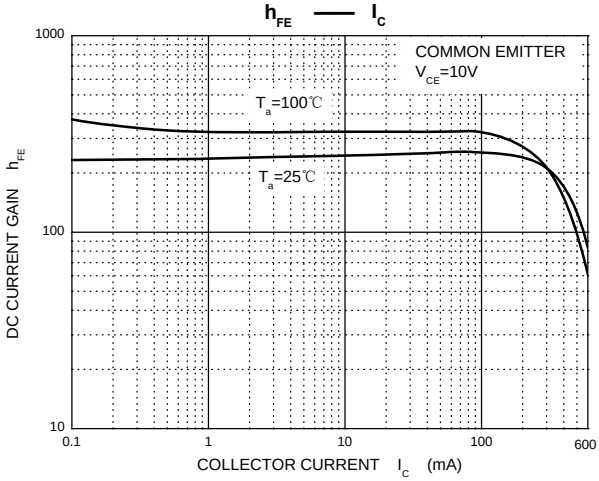
*pulse test: Pulse Width ≤300μs, Duty Cycle≤ 2.0%.

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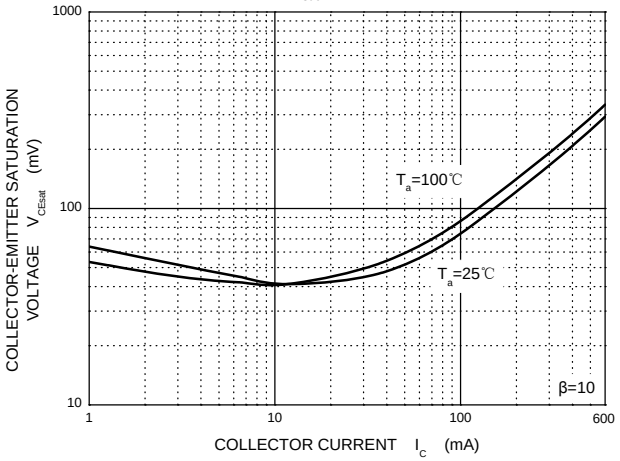
Static Characteristic



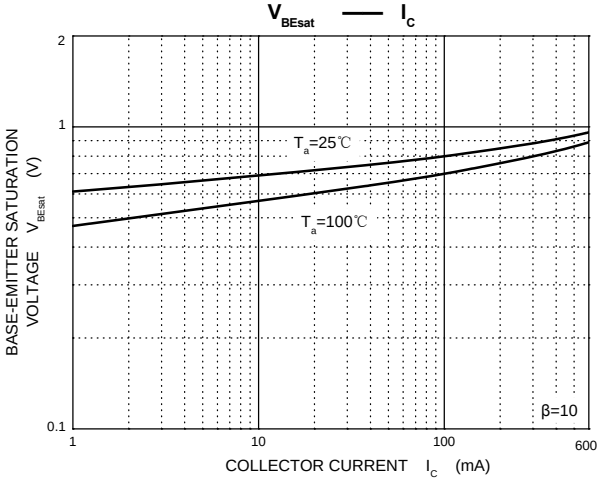
h_{FE} — I_C



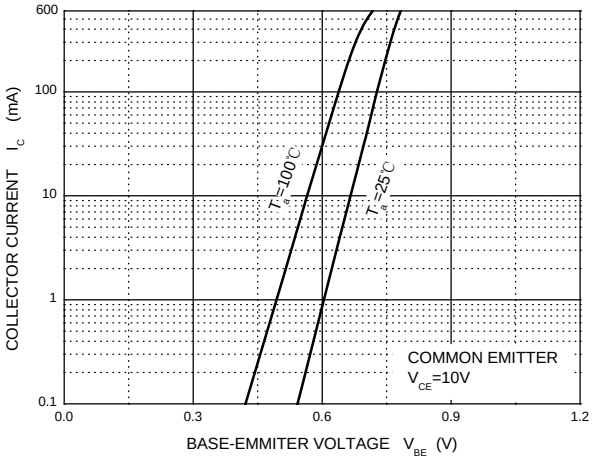
V_{CEsat} — I_C



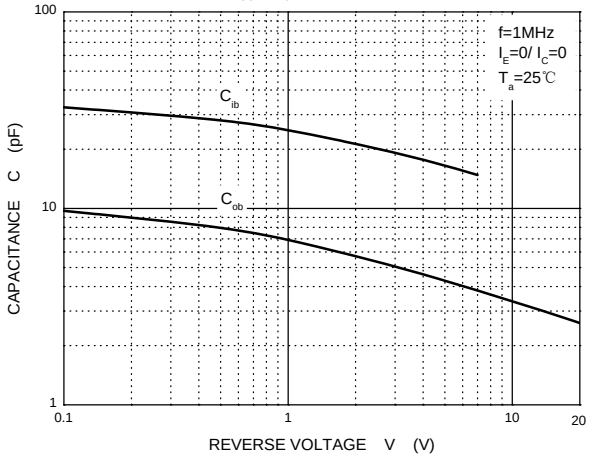
V_{BEsat} — I_C



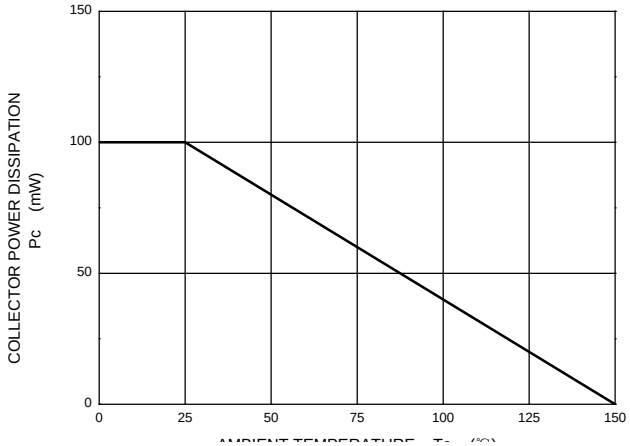
I_C — V_{BE}



C_{ob}/ C_{ib} — V_{CB}/ V_{EB}

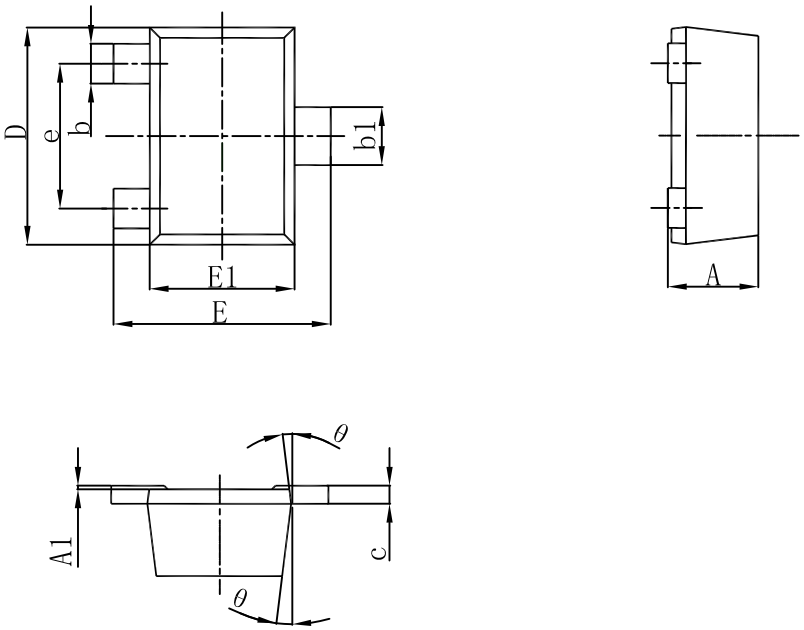


Pc — Ta



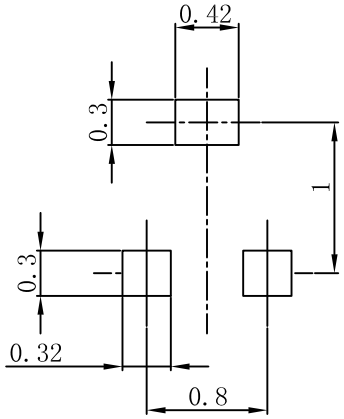
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SOT-723 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.430	0.500	0.017	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	

SOT-723 Suggested Pad Layout



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