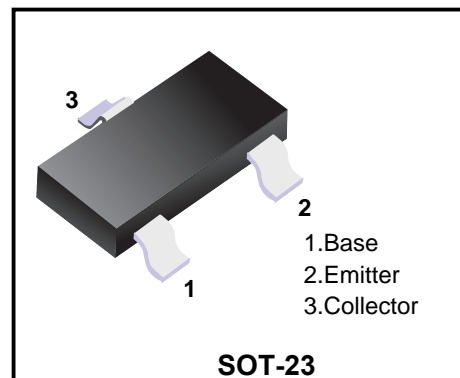


NPN Transistors

Features

- Collector Current Capability $I_C=0.05A$
- Collector Emitter Voltage $V_{CEO}=25V$



Marking Code

MMBTH10	3EM
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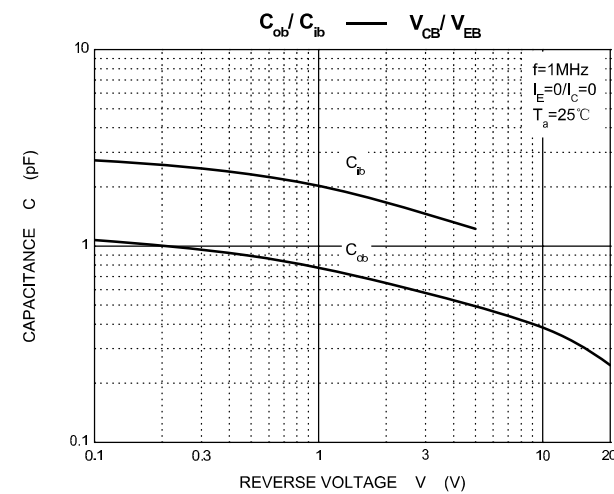
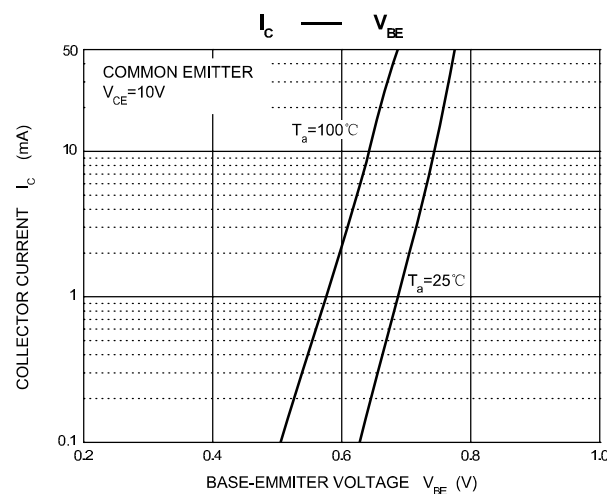
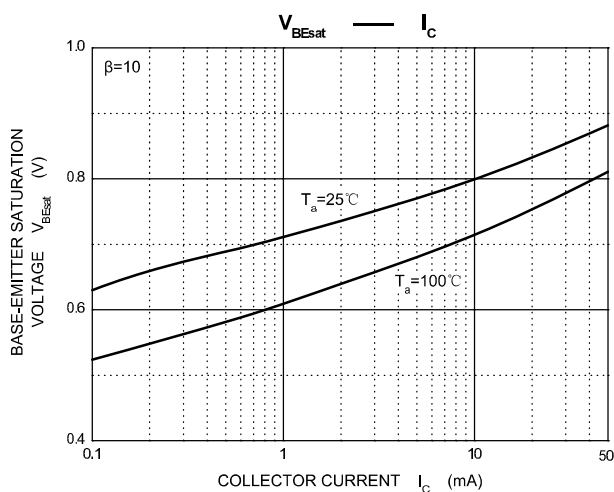
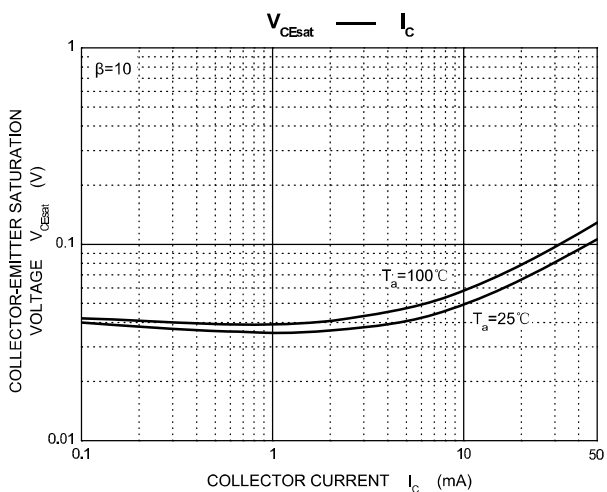
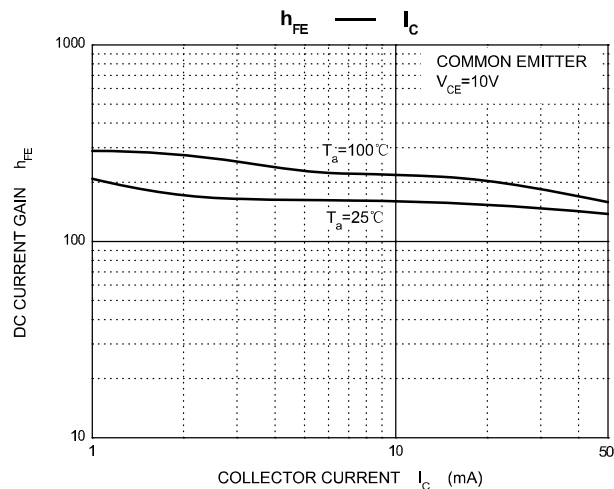
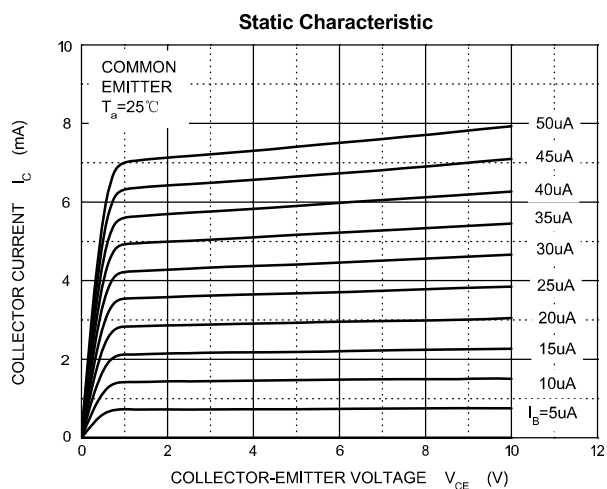
Absolute Maximum Ratings ($T_a=25^{\circ}C$)

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	30	V
Collector - Emitter Voltage	V_{CEO}	25	
Emitter - Base Voltage	V_{EBO}	3	
Collector Current - Continuous	I_C	0.05	A
Collector Power Dissipation	P_C	225	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	556	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature Range	T_{stg}	-55 to +150	

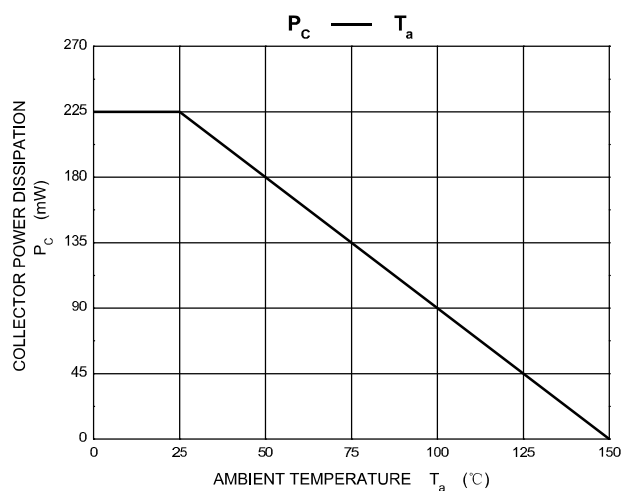
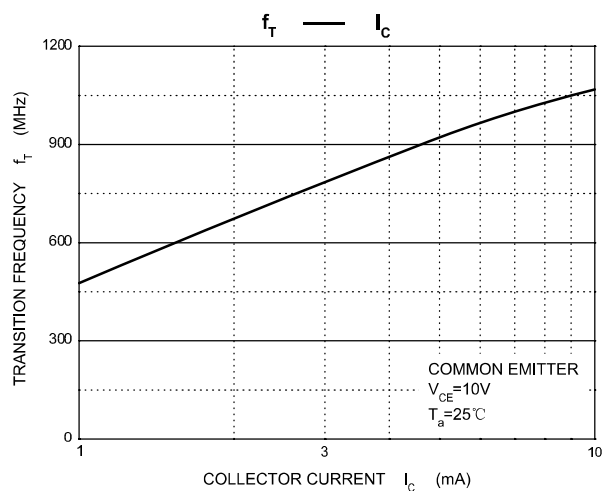
Electrical Characteristics ($T_a=25^{\circ}C$ unless otherwise specified.)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CBO}	$I_C=100\mu A, I_E=0$	30			V
Collector- emitter breakdown voltage	V_{CEO}	$I_C=1mA, I_B=0$	25			
Emitter - base breakdown voltage	V_{EBO}	$I_E=10\mu A, I_C=0$	3			
Collector-base cut-off current	I_{CBO}	$V_{CB}=25V, I_E=0$			100	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=2V, I_C=0$			100	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=4mA, I_B=0.4mA$			0.5	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C=4mA, I_B=0.4mA$			1.2	
Base - emitter saturation voltage	V_{BE}	$V_{CE}=10V, I_C=4mA$			0.95	
DC current gain	h_{FE}	$V_{CE}=10V, I_C=4mA$	60			
Collector output capacitance	C_{ob}	$V_{CB}=10V, I_E=0, f=1MHz$			0.7	pF
Transition frequency	f_T	$V_{CE}=10V, I_C=4mA, f=100MHz$	650			MHz

Typical Characteristics



Typical Characteristics



Ordering information

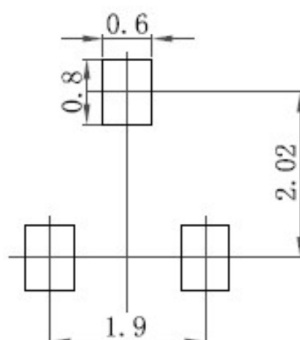
Package	Packing Description	Base Quantity	Packing Quantity
SOT-23	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

Package Dimensions

SOT-23

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	0.9	1.15	35	45
A1	0.1		3.9	
bp	0.38	0.48	15	19
C	0.09	0.15	3.54	5.9
D	2.8	3.0	110	118
E	1.2	1.4	47	55
E	1.9		75	
E1	0.95		37	
HE	2.1	2.55	83	100
Lp	0.15	0.45	5.9	18
Q	0.45	0.55	18	22
v	0.2		7.9	
W	0.1		4	

The recommended mounting pad size



Disclaimer

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