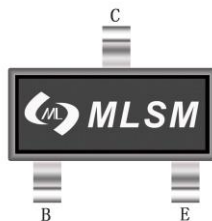
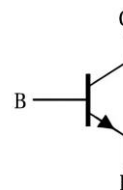


Features

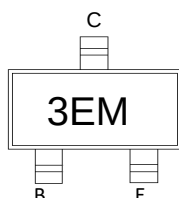
- VHF/UHF Transistor



SOT-23 top view



Schematic diagram



Marking and pin assignment



Halogen-Free

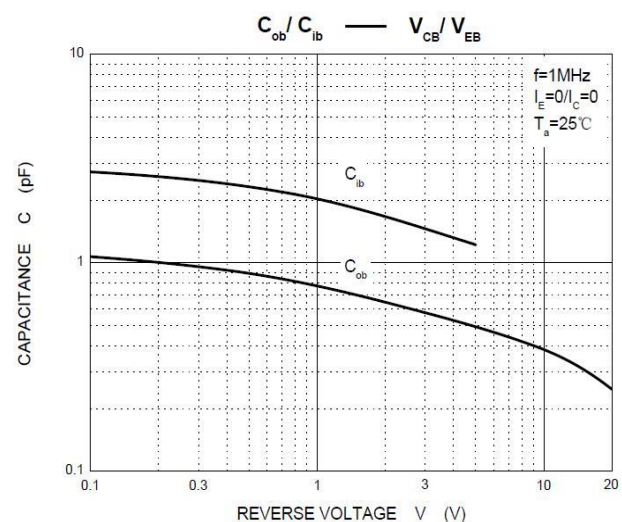
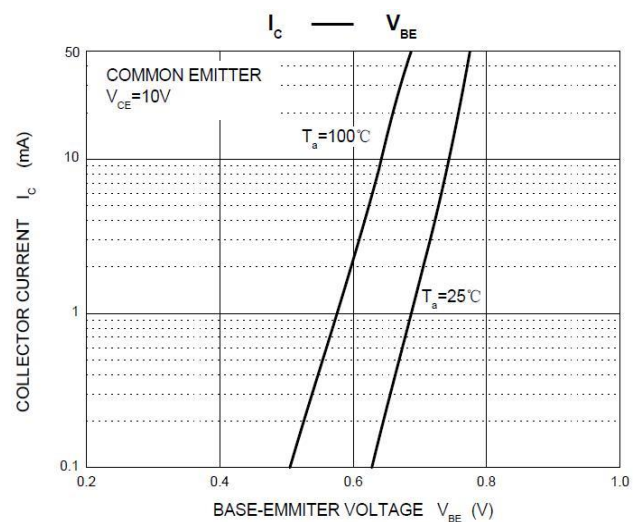
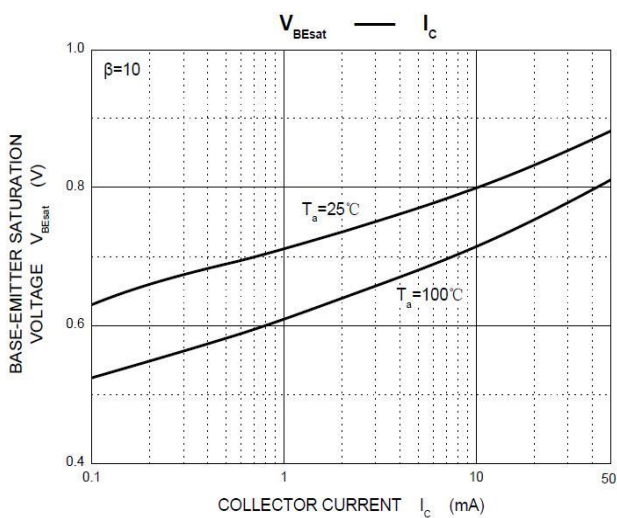
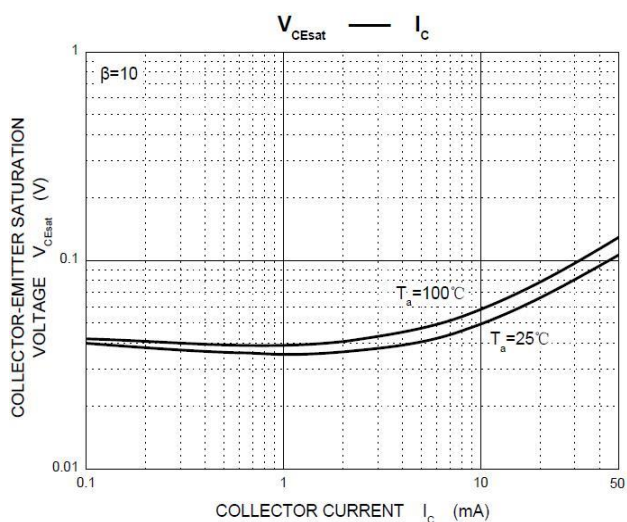
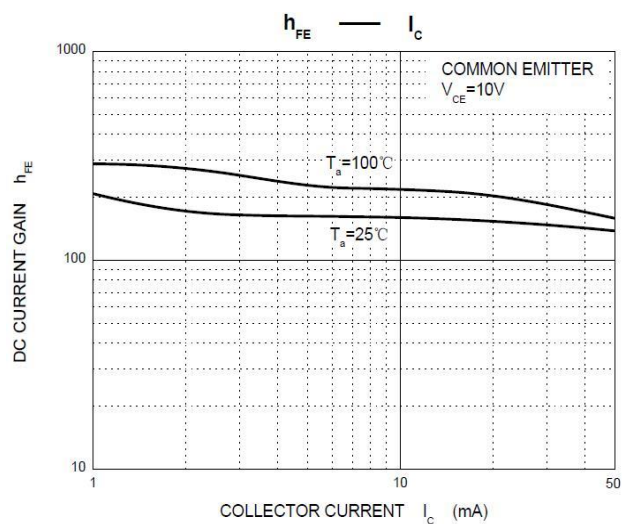
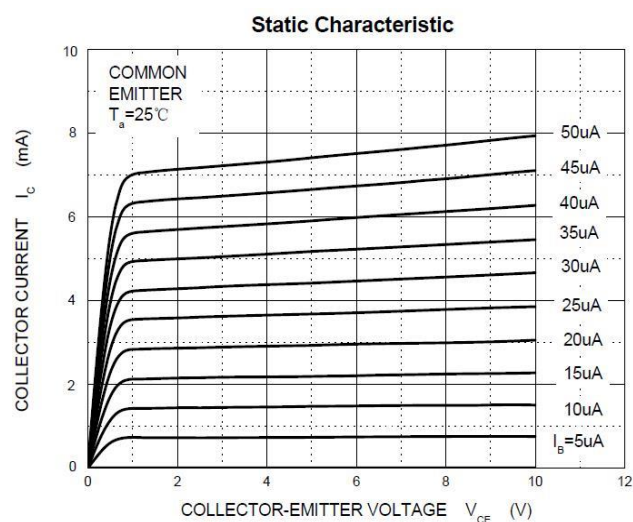
Maximum Ratings (Ta=25°C unless otherwise noted)

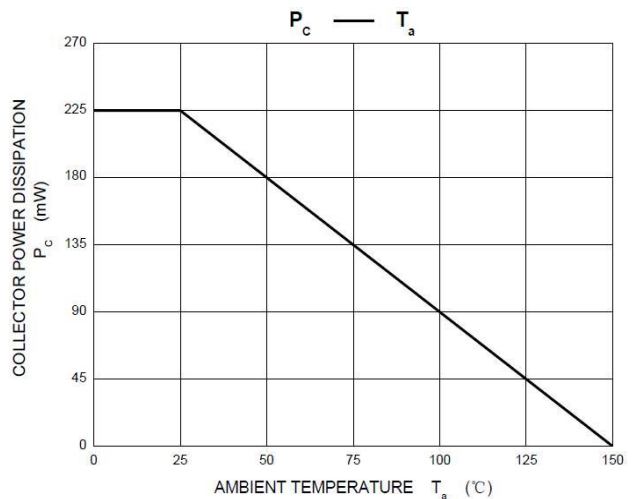
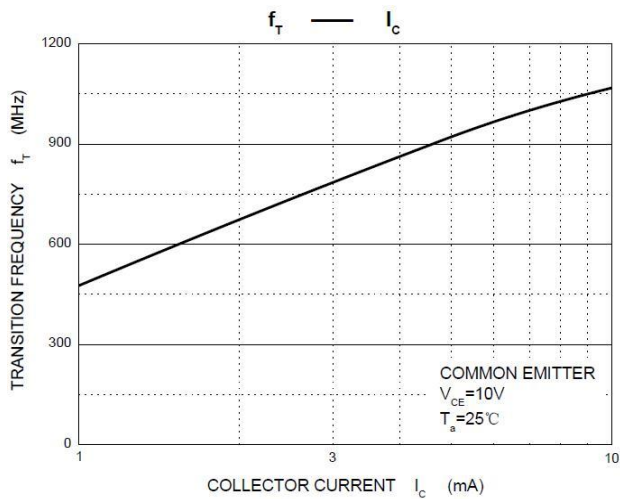
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	30	V
V_{CEO}	Collector-Emitter Voltage	25	V
V_{EBO}	Emitter-Base Voltage	3	V
I_C	Collector Current	50	mA
P_C	Collector Power Dissipation	225	mW
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	556	°C/W
T_J, T_{STG}	Operating and Storage Temperature Range	-55~+150	°C

Electrical Characteristics (Ta=25°C unless otherwise specified)

Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C=100\mu A, I_E=0$	30	--	--	V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C=1mA, I_B=0$	25	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E=10\mu A, I_C=0$	3	--	--	V
I_{CBO}	Collector cut-off current	$V_{CE}=25V, I_E=0$	--	--	0.1	μA
I_{EBO}	Collector cut-off current	$V_{EB}=2V, I_C=0$	--	--	0.1	μA
Hfe	DC current gain	$V_{CE}=10V, I_C=4mA$	100	--	200	
$V_{CE(sat)}$	Collector-emitter saturation voltage	$I_C=4mA, I_B=0.4mA$	--	--	0.5	V
V_{BE}	Base-emitter voltage	$V_{CE}=10V, I_C=4mA$	--	--	0.95	V
f_T	Transition frequency	$V_{CE}=10V, I_C=4mA, I_B=100\mu A$	650	--	--	MHz
C_{ob}	Collector output capacitance	$V_{CB}=10V, I_E=0, f=1MHz$	--	--	0.7	pF

Typical Operating Characteristics

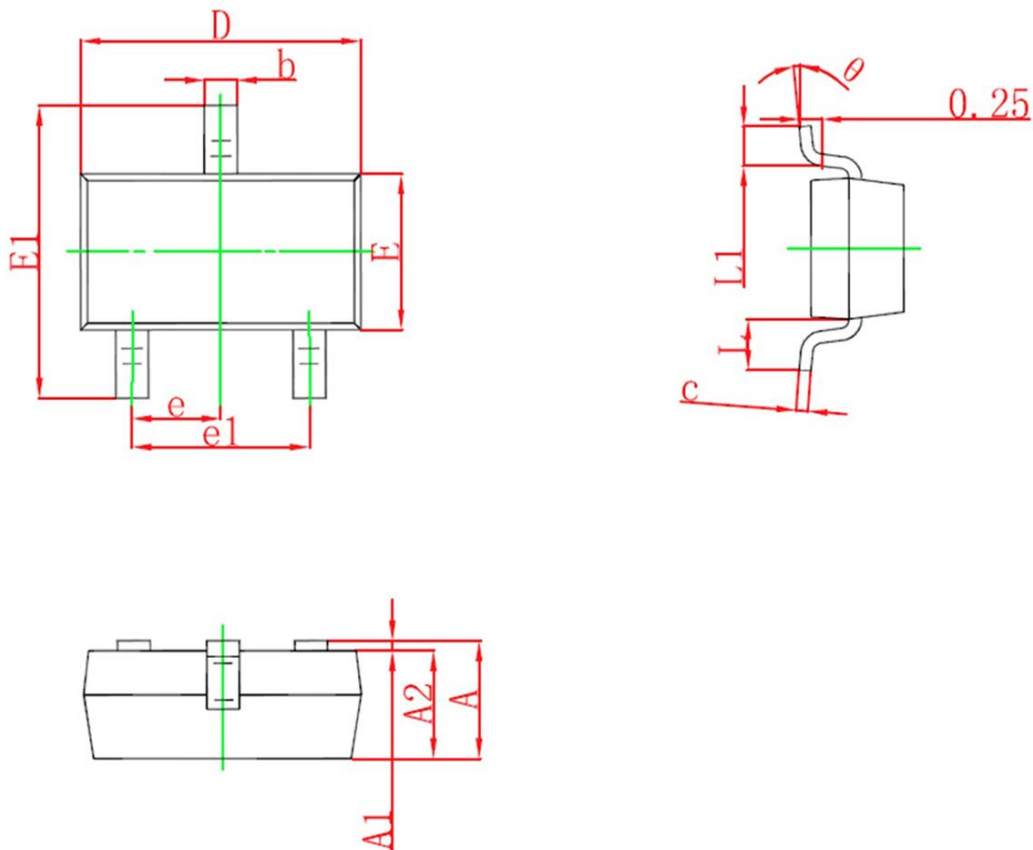




Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MMBTH10	SOT-23	3EM	3,000	45,000	180,000	7"reel

SOT-23 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E1	2.250	2.550	0.088	0.100
E	1.200	1.400	0.047	0.055
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°