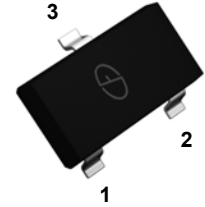


Features

- VHF/UHF Transistor
- SOT-23 plastic-encapsulate package
- RoHS compliant



SOT-23

1. BASE
2. EMITTER
3. COLLECTOR

Applications

- For general purpose amplification and switching

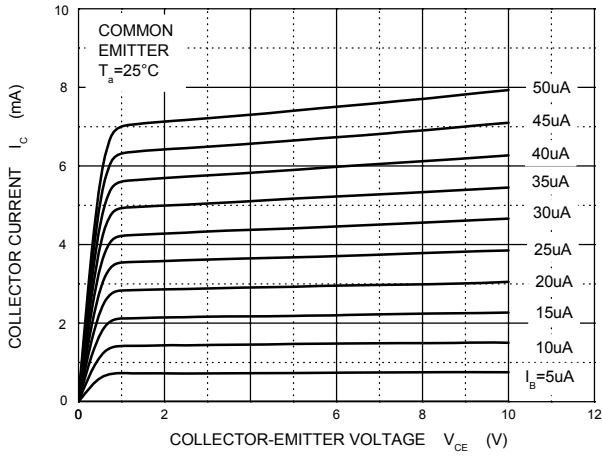
Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V _{CB0}	30	V
Collector-Emitter Voltage	V _{CEO}	25	V
Emitter-Base Voltage	V _{EBO}	3	V
Collector Current	I _c	50	mA
Collector Power Dissipation	P _C	225	mW
Thermal Resistance from Junction to Ambient	R _{θJA}	556	°C/W
Junction Temperature	T _J	-55 to +150	°C
Storage Temperature	T _{STG}	-55 to +150	°C

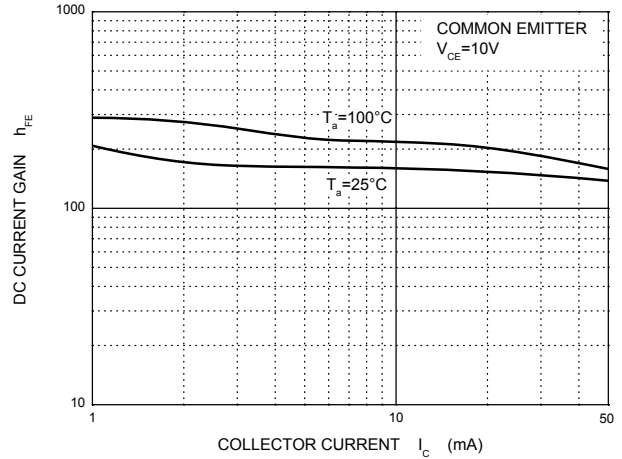
Electrical Characteristics (T_A=25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Max	Unit
Collector-Base Breakdown Voltage	V _{(BR)CBO}	I _C =100μA, I _E =0	30	--	V
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C =1mA, I _B =0	25	--	V
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	I _E =10μA, I _C =0	3	--	V
Collector Cut-off Current	I _{CBO}	V _{CB} =25V, I _E =0	--	0.1	μA
Emitter Cut-off Current	I _{EBO}	V _{EB} =2V, I _C =0	--	0.1	μA
DC Current Gain	h _{FE}	V _{CE} =10V, I _C =4mA	60	--	
Collector-Emitter Saturation Voltage	V _{CE(sat)}	I _C =4mA, I _B =0.4mA	--	0.5	V
Base-Emitter Voltage	V _{BE}	V _{CE} =10V, I _C =4mA	--	0.95	V
Transition Frequency	f _T	V _{CE} =10V, I _C =4mA, f=100MHz	650	--	MHz
Collector Output Capacitance	C _{ob}	V _{CB} =10V, I _E =0, f=1MHz	--	0.7	pF

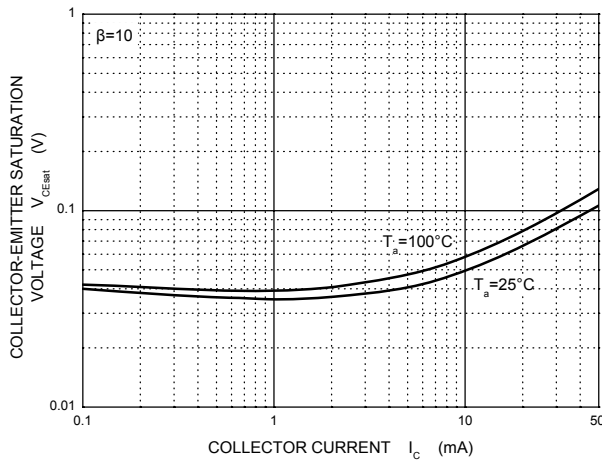
Typical Characteristic Curves



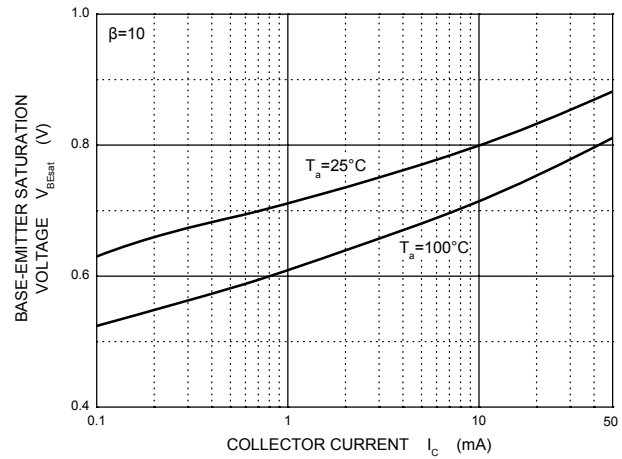
Static Characteristic



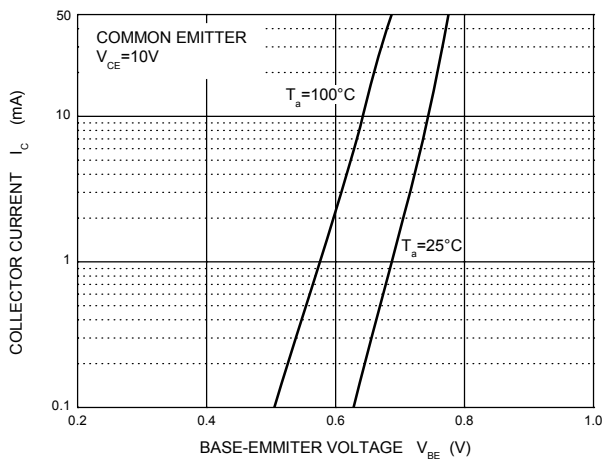
h_{FE} — I_C



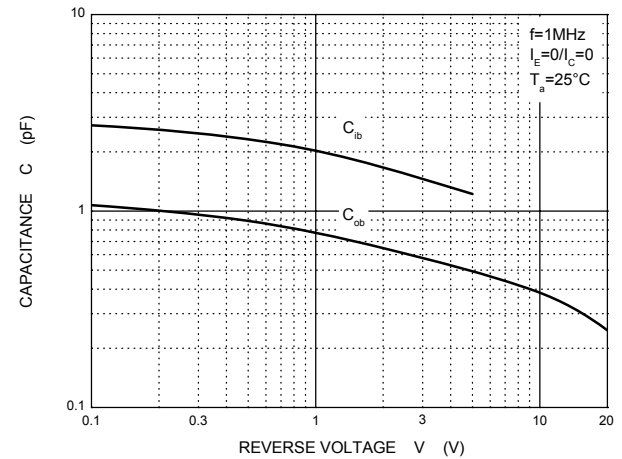
$V_{CE(sat)}$ — I_C



$V_{BE(sat)}$ — I_C

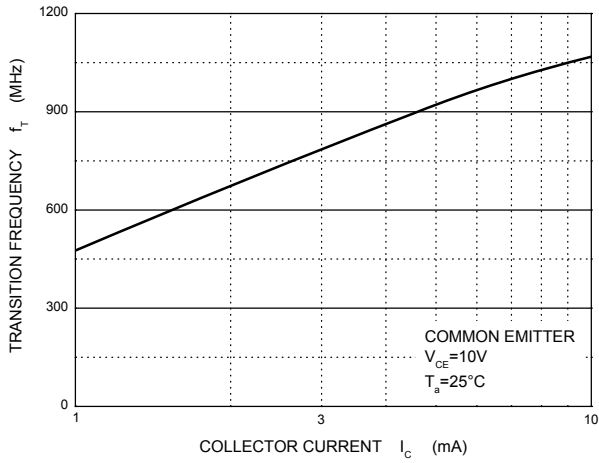


I_C — V_{BE}

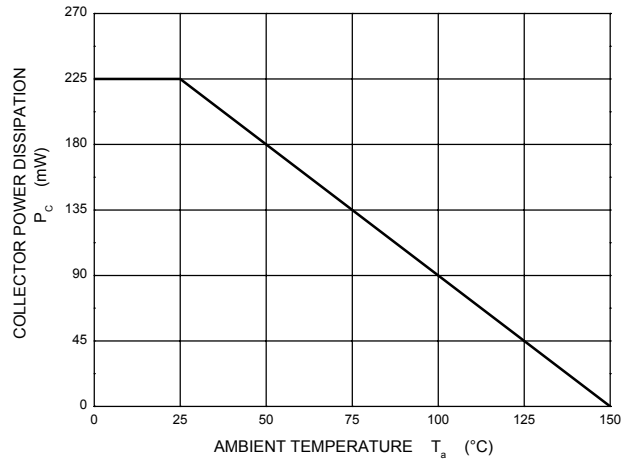


C_{ob} / C_{ib} — V_{CB} / V_{EB}

Typical Characteristic Curves

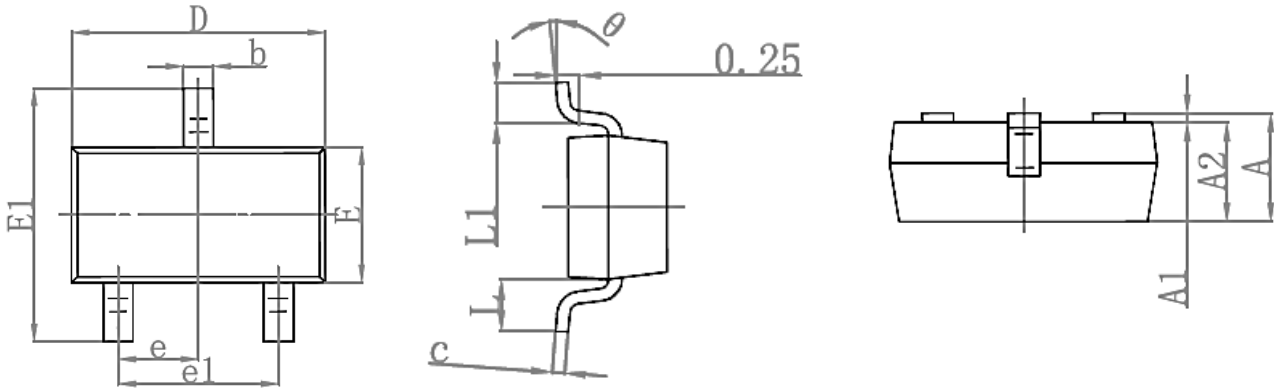


f_T — I_c



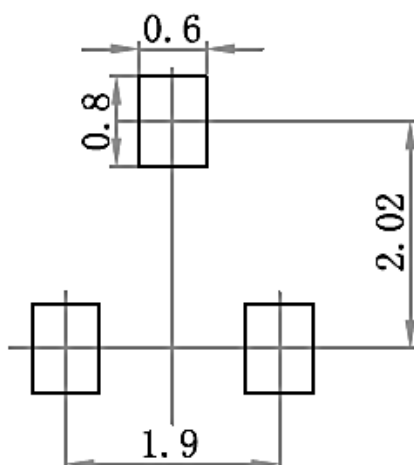
P_c — T_a

Package Outline Dimensions SOT-23



Symbol	Dimensions In Millimeters		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
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
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°

Suggested Pad Layout



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

Order Information

Device	Package	Marking	Carrier	Quantity	HSF Status
MMBTH10	SOT-23	3EM	Tape & Reel	3,000pcs/Reel	RoHS Compliant