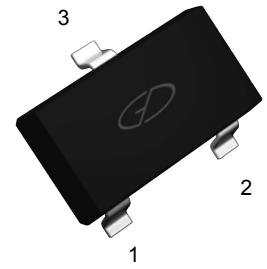


Features

- NPN transistor, Complementary Type MMBT3906

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V _{CBO}	60	V
Collector-Emitter Voltage	V _{CEO}	40	V
Emitter-Base Voltage	V _{EBO}	6	V
Collector Current	I _C	200	mA
Collector Power Dissipation	P _C	200	mW
Thermal Resistance Junction To Ambient	R _{θJA}	625	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature	T _{STG}	-55 to +150	°C



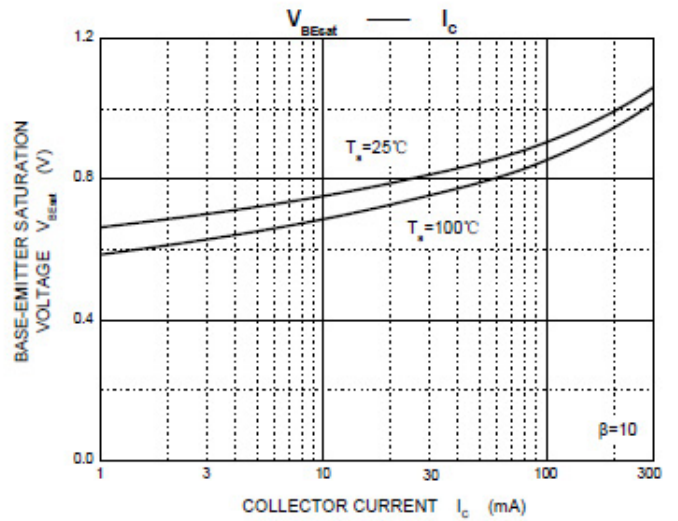
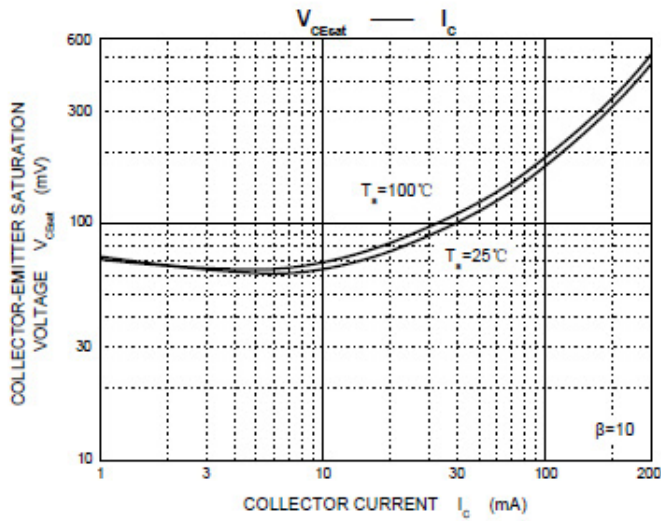
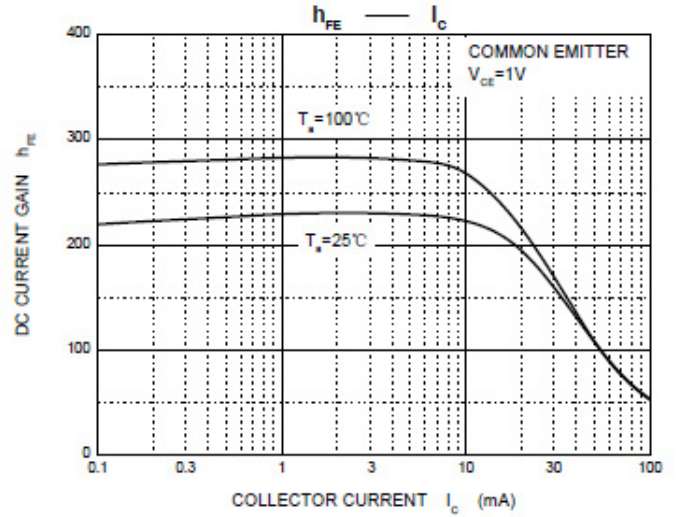
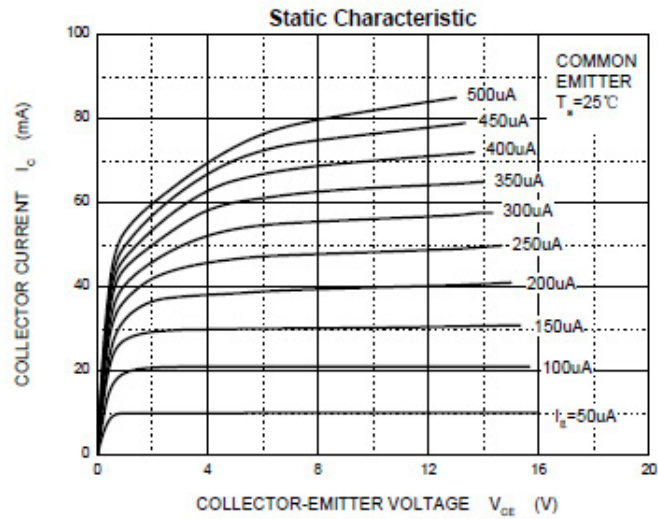
Package: SOT-23

1. BASE
2. EMITTER
3. COLLECTOR

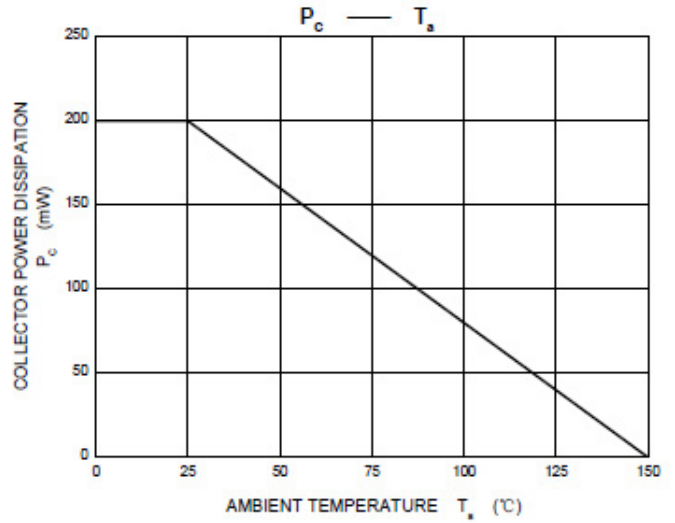
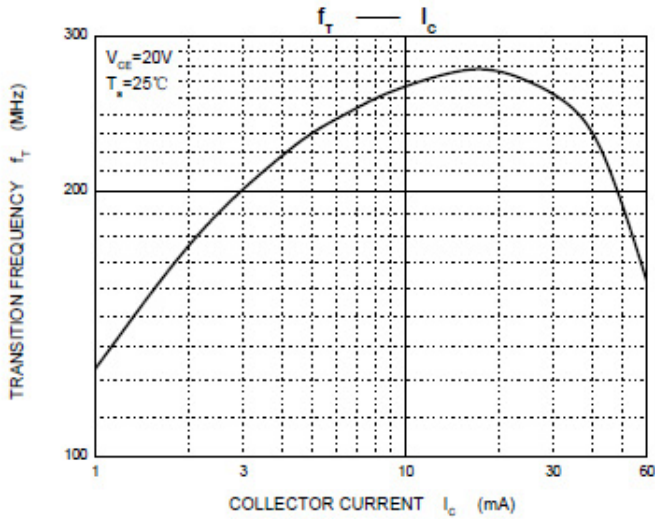
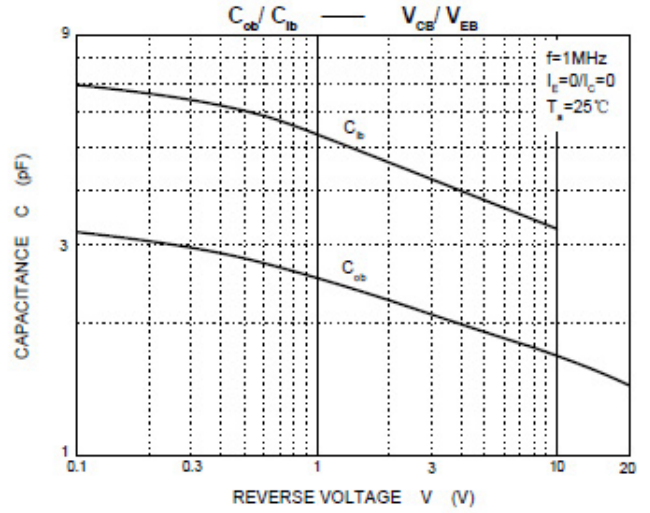
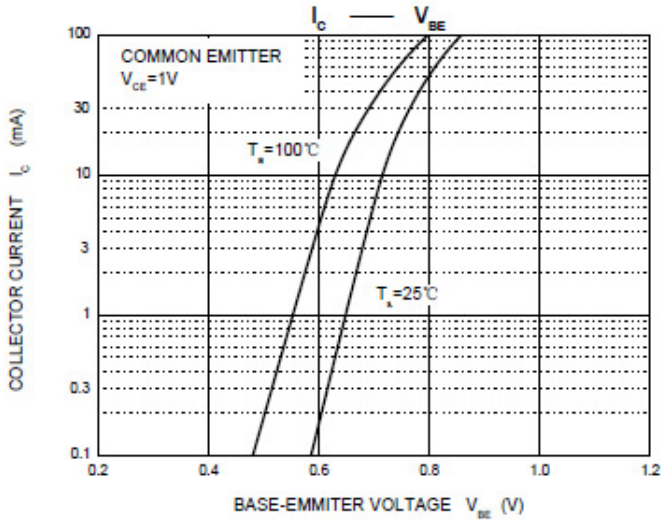
Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Max	Unit
Collector-base Breakdown Voltage	V _{(BR)CBO}	I _C =10μA, I _E =0	60	--	V
Collector-emitter Breakdown Voltage	V _{(BR)CEO}	I _C =1mA, 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 _{CEX}	V _{CE} =30V, V _{BE(off)} =3V	--	50	nA
Collector Cut-off Current	I _{CBO}	V _{CB} = 60V, I _E =0	--	100	nA
Emitter Cut-off Current	I _{EBO}	V _{EB} =5V, I _C =0	--	100	nA
DC Current Gain	h _{FE(1)}	V _{CE} =1V, I _C =10mA	100	300	
	h _{FE(2)}	V _{CE} =1V, I _C =50mA	60	--	
	h _{FE(3)}	V _{CE} =1V, I _C =100mA	30	--	
Collector-emitter Saturation Voltage	V _{CE(sat)}	I _C =50mA, I _B =5mA	--	0.3	V
Base-emitter Saturation Voltage	V _{BE(sat)}	I _C =50mA, I _B =5mA	--	0.95	V
Transition Frequency	f _T	V _{CE} =20V, I _C =10mA, f=100MHz	300	--	MHz
Delay Time	t _d	V _{CC} =3V, V _{BE(off)} =-0.5V I _C =10mA, I _{B1} =1mA	--	35	nS
Rise Time	t _r	V _{CC} =3V, V _{BE(off)} =-0.5V I _C =10mA, I _{B1} =1mA	--	35	nS
Storage Time	t _s	V _{CC} =3V, I _C =10mA, I _{B1} = I _{B2} =1mA	--	200	nS
Fall Time	t _f	V _{CC} =3V, I _C =10mA, I _{B1} = I _{B2} =1mA	--	50	nS

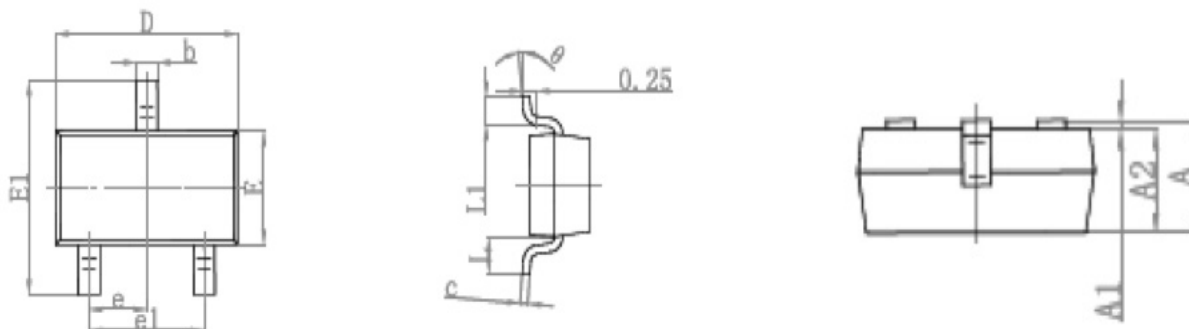
Typical Electrical Characteristic Curves



Typical Electrical Characteristic Curves

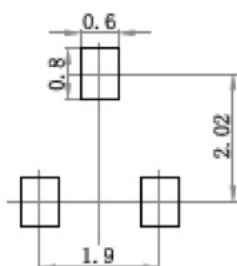


Package Outline Dimensions SOT-23



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: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.

Ordering Information

Device	Package	Marking	Quantity	HSF Status
MMBT3904	SOT- 23	1A	3000pcs / Reel	RoHS Compliant