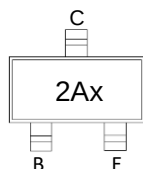
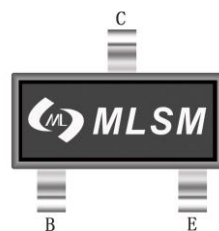


Features

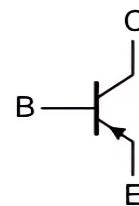
- As complementary type, the NPN transistor MMBT3904 is Recommended
- Epitaxial planar die construction



2A= Device code
X= Code



SOT-23 top view



Schematic diagram



Halogen-Free

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-40	V
V_{CEO}	Collector-Emitter Voltage	-40	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-0.2	A
P_C	Collector Power Dissipation	0.2	W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	625	°C/W
T_J, T_{STG}	Operating and Storage Temperature Range	-55~ +150	°C

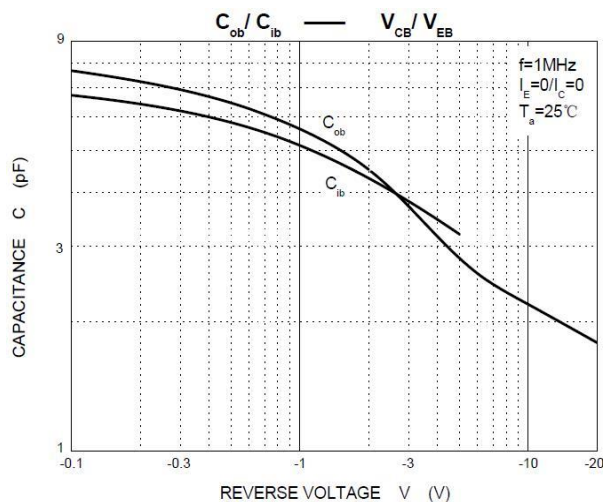
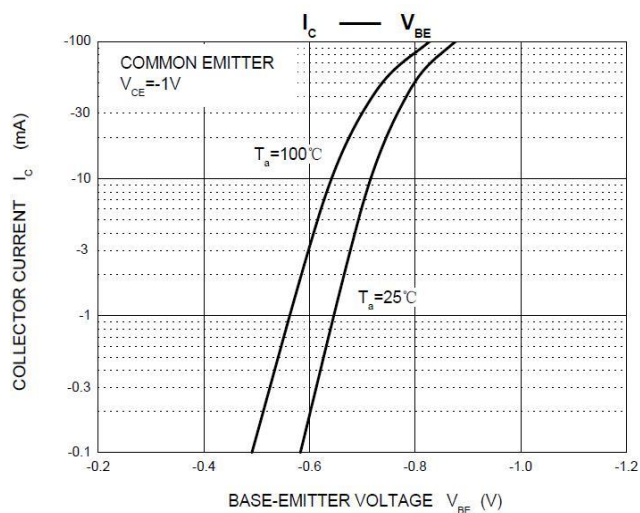
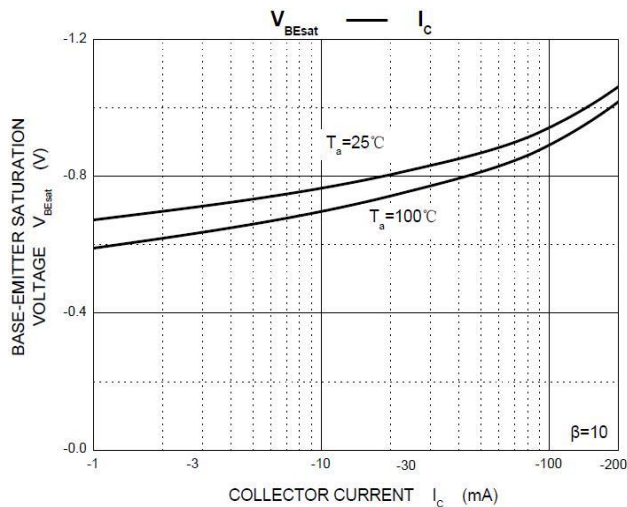
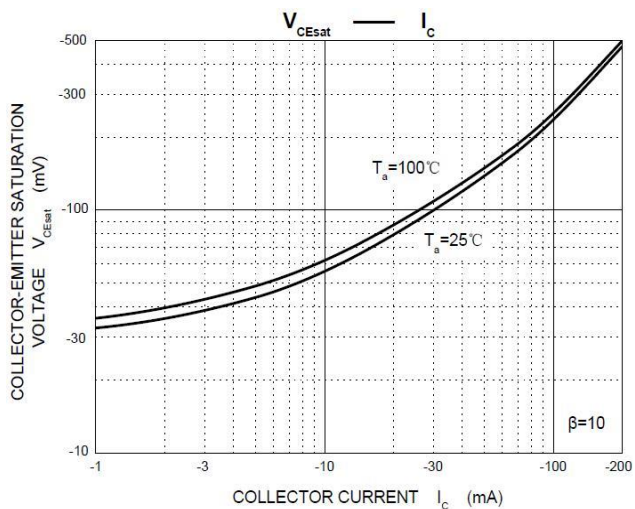
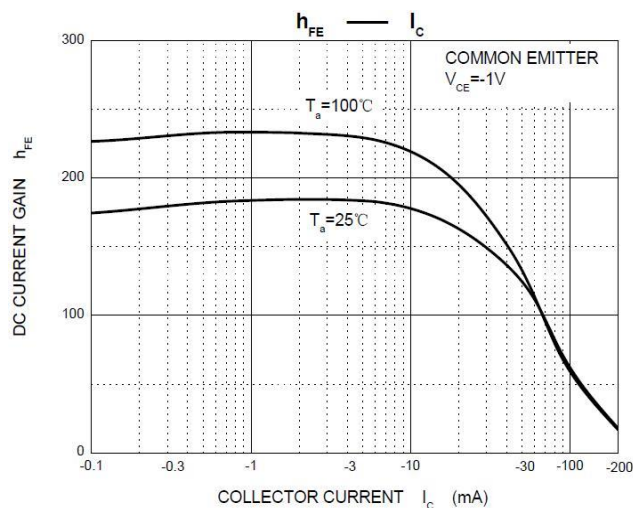
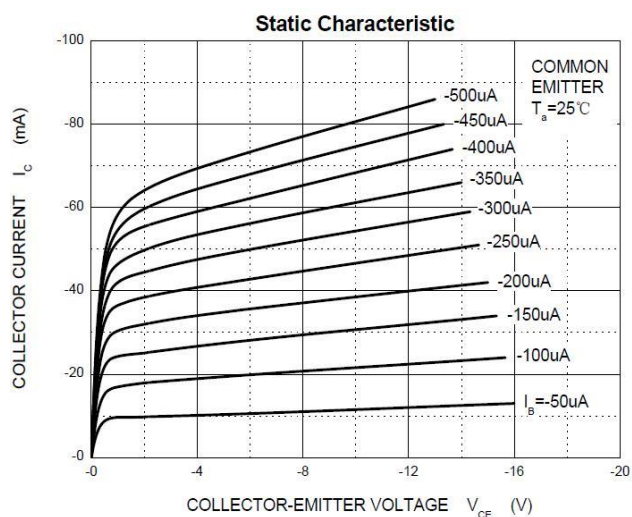
Electrical Characteristics (Ta=25°C unless otherwise specified)

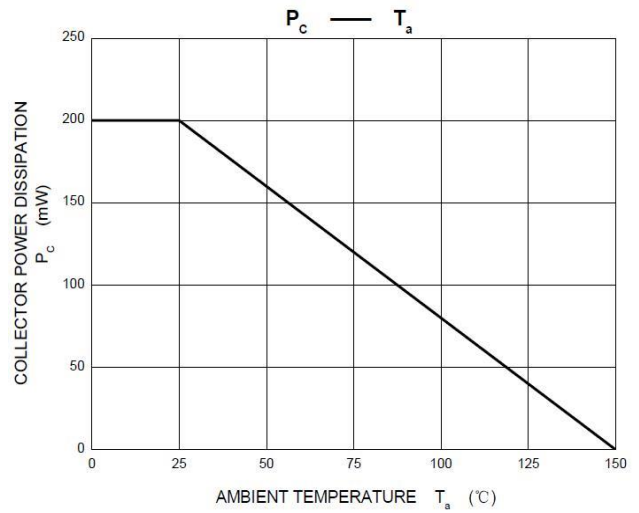
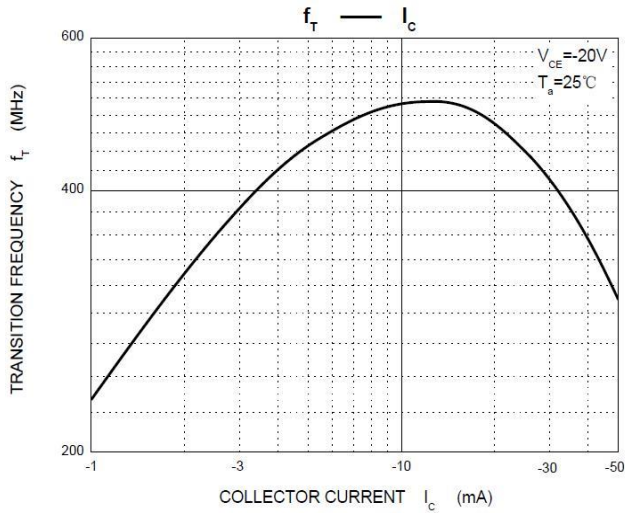
Symbol	Parameter	Test conditions	Min	Typ	Max	Unit
$V_{(BR)CBO}$	Collector-base breakdown voltage	$I_C = -10\mu A, I_E = 0$	-40	--	--	V
$V_{(BR)CEO}$	Collector-emitter breakdown voltage	$I_C = -1mA, I_B = 0$	-40	--	--	V
$V_{(BR)EBO}$	Emitter-base breakdown voltage	$I_E = -10\mu A, I_C = 0$	-5	--	--	V
I_{CBO}	Collector cut-off current	$V_{CB} = -40V, I_E = 0$	--	--	-100	nA
I_{EBO}	Emitter cut-off current	$V_{EB} = -5V, I_C = 0$	--	--	-100	nA
I_{CEX}	Collector cut-off current	$V_{CES} = -30V, V_{BE(off)} = -3V$	--	--	-50	nA
h_{FE1}	DC current gain	$V_{CE} = -1V, I_C = -10mA$	100	--	300	
h_{FE2}		$V_{CE} = -1V, I_C = -50mA$	60	--	--	
h_{FE3}		$V_{CE} = -2V, I_C = 100mA$	30	--	--	
$V_{CE(sat)1}$	Collector-emitter saturation voltage	$I_C = -50mA, I_B = -5mA$	--	--	-0.3	V
$V_{BE(sat)}$	Base -emitter saturation voltage	$I_C = -50mA, I_B = -5mA$	--	--	-0.95	V
f_T	Transition frequency	$V_{CE} = -20V, I_C = -10mA, f = 100MHz$	300	--	--	MHz
t_d	Delay time	$V_{CC} = -3V, V_{BE} = -0.5V, I_C = 10mA$	--	--	35	ns
t_r	Rise time	$I_{B1} = I_{B2} = -1mA$	--	--	35	ns
t_s	Storage time	$V_{CC} = -3V, I_C = -10mA, I_{B1} = I_{B2} = -1mA$	--	--	225	ns
t_f	Fall time		--	--	75	ns

Classification Of $h_{FE(1)}$

Rank	L	H
Range	100-200	200-300
HFE	100-300	
Marking	2Ax	

Typical Operating Characteristics

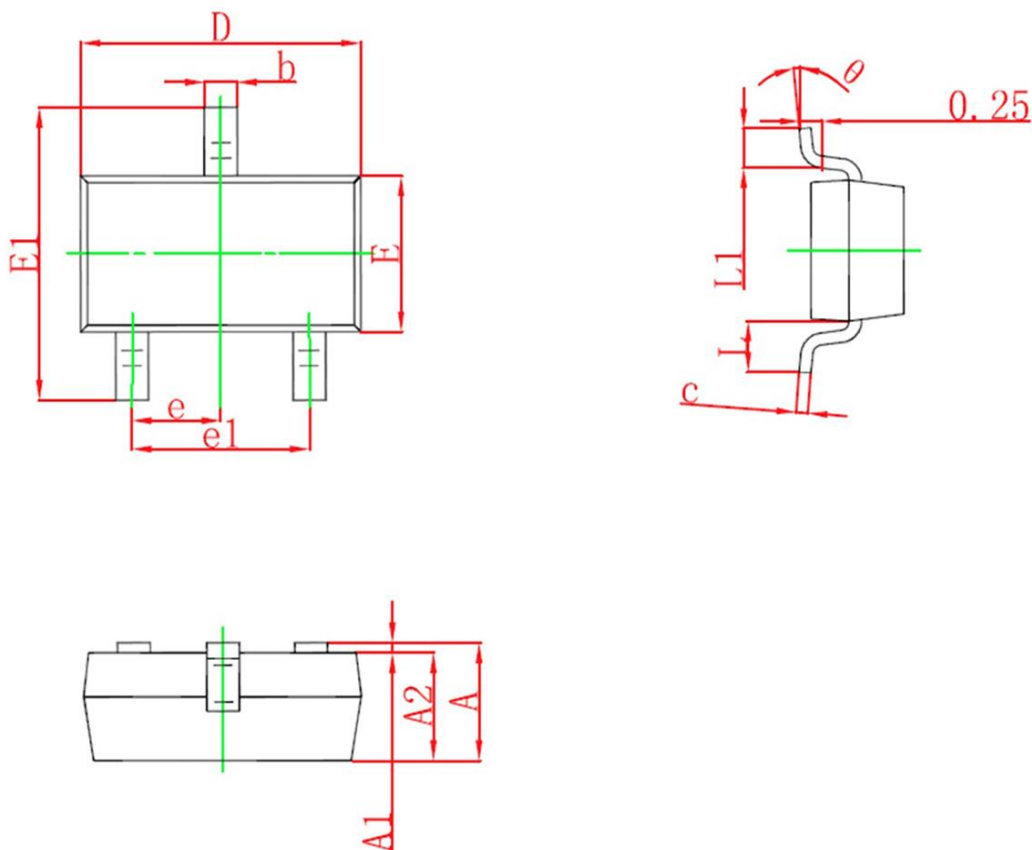




Ordering Information (Example)

Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MMBT3906	SOT-23	2Ax	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°