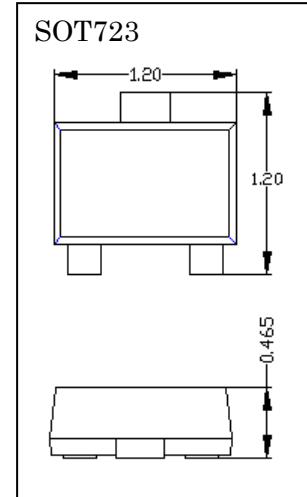
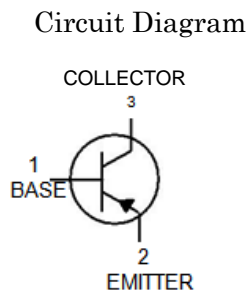


**DATA SHEET**

**MMBT3906M**

- ◇ Capable of 100 mWatts of Power Dissipation and 200mA I<sub>c</sub>
- ◇ Operating and Storage Junction Temperatures: -55°C to 150°C
- ◇ Small Outline Surface Mount Package
- ◇ RoHS compliant / Green EMC

Device Marking Code	
<b>MMBT3906M</b>	<b>3N</b>



**MAXIMUM RATINGS (Ta=25°C unless otherwise noted)**

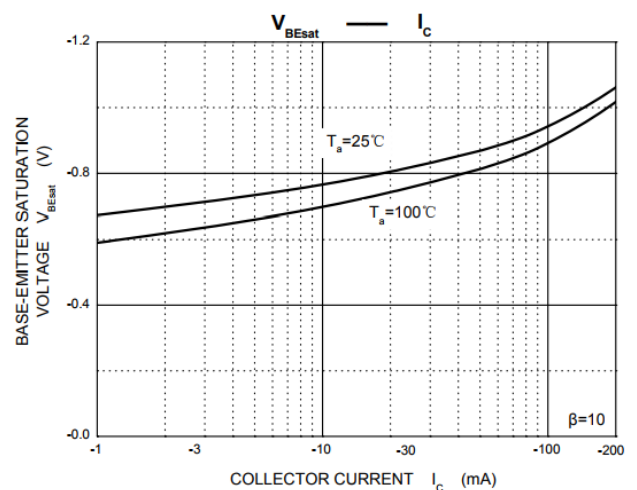
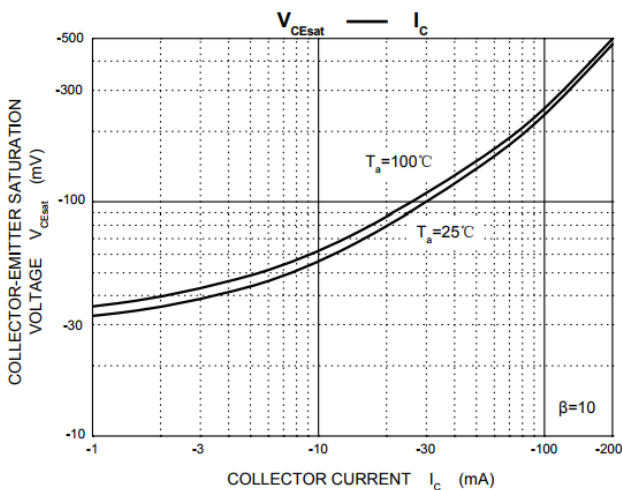
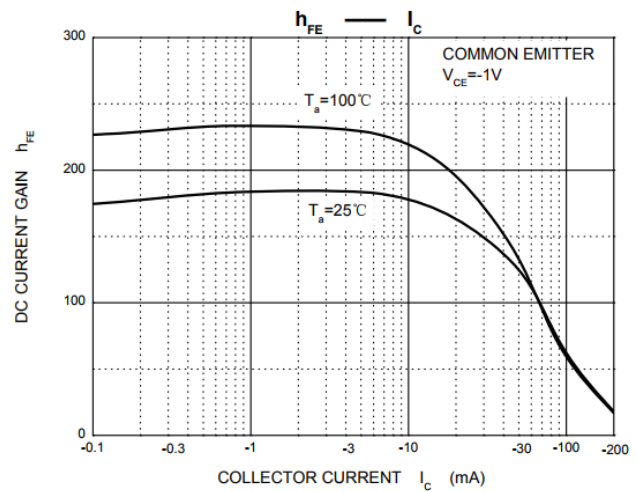
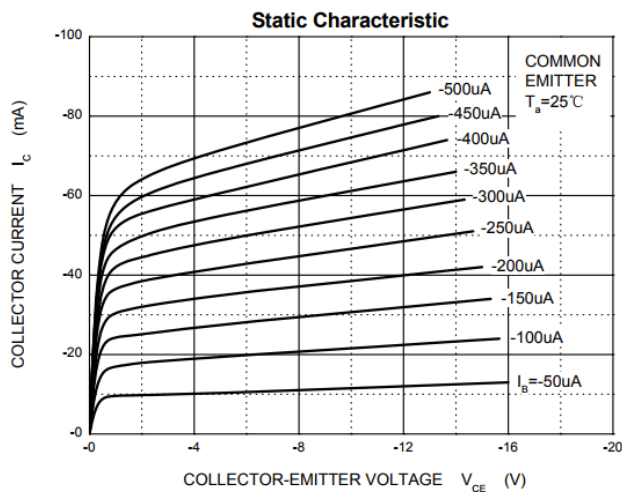
Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	-40	V
V <sub>CE0</sub>	Collector-Emitter Voltage	-40	V
V <sub>EBO</sub>	Emitter-Base Voltage	-5	V
I <sub>c</sub>	Collector Current -Continuous	-0.2	A
P <sub>c</sub>	Collector Power Dissipation	100	mW
R <sub>θJA</sub>	Thermal Resistance From Junction To Ambient	1250	°C/W
T <sub>j</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55~+150	°C

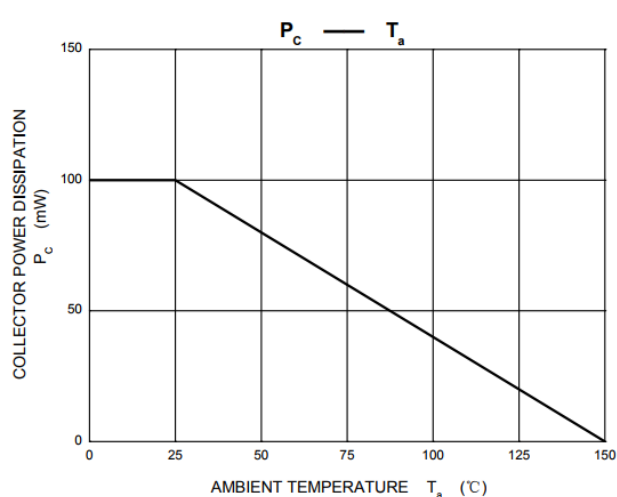
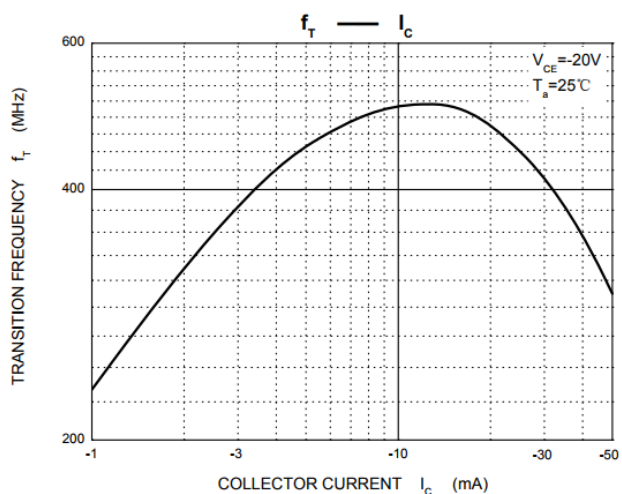
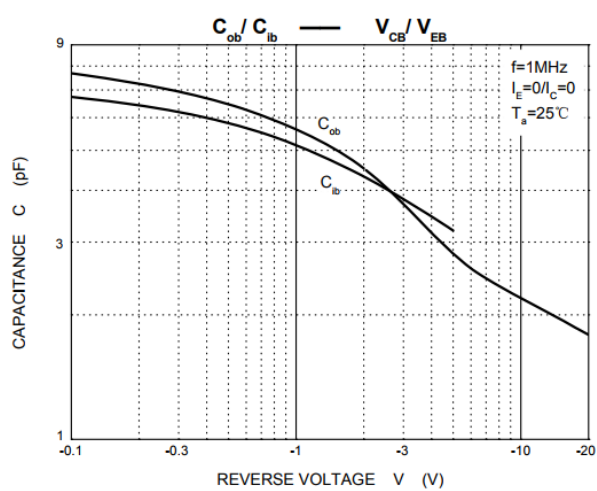
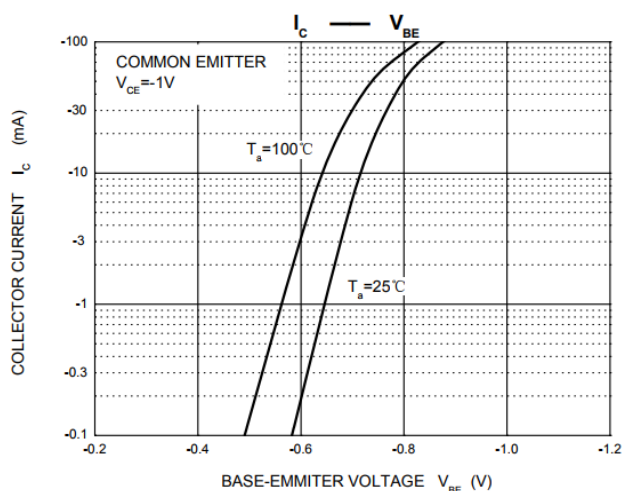
**ELECTRICAL CHARACTERISTICS @ 25° C Unless Otherwise Specified**

Symbol	Parameter	Test Conditions	Min	Max	Units
V <sub>CE0</sub>	Collector-Emitter Breakdown Voltage	I <sub>c</sub> =-1.0mA, I <sub>B</sub> =0	-40		V
V <sub>CB0</sub>	Collector-Base Breakdown Voltage	I <sub>c</sub> =-10μA, I <sub>E</sub> =0	-40		V
V <sub>EBO</sub>	Emitter-Base Breakdown Voltage	I <sub>E</sub> =-10μA, I <sub>c</sub> =0	-5		V
I <sub>CB0</sub>	Collector Cut-off Current	V <sub>CB</sub> =-40V, I <sub>E</sub> =0		-100	nA

$I_{CEX}$	Collector Cut-off Current	$V_{CE}=-30V, V_{EB(OFF)}=-3.0V$		-50	nA
$I_{EBO}$	Emitter Cut-off Current	$V_{EB}=-5V, I_C=0$		-100	nA
$h_{FE(1)}$	DC Current Gain	$I_C=-10mA, V_{CE}=-1V$	100	300	
$h_{FE(2)}$	DC Current Gain	$I_C=-50mA, V_{CE}=-1V$	60		
$h_{FE(3)}$	DC Current Gain	$I_C=-100mA, V_{CE}=-2V$	30		
$V_{CE(sat)}$	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
$f_T$	Current Gain-Band width Product	$I_C=-10mA, V_{CE}=-20V, f=100MHz$	300		MHz
$t_d$	Delay Time	$V_{CC}=-3.0V, V_{BE(off)}=-0.5V$		35	ns
$t_r$	Rise Time	$I_C=-10mA, I_{B1}=I_{B2}=-1.0mA$		35	ns
$t_s$	Storage Time	$V_{CC}=-3.0V, I_C=-10mA$		225	ns
$t_f$	Fall Time	$I_{B1}=I_{B2}=-1.0mA$		75	ns

**TYPICAL CHARACTERISTICS**





ORDERING INFORMATION

Device	Package	Shipping	Tape wide	Emboss pitch	Tape specification	Notes
MMBT3906M	SOT723	Tape & Reel 8000pcs / 7" Reel	8mm	4mm	Conductive	

**PACKAGE DIMENSIONS**

**Package outline : SOT723**

**Top view**

**Side view**

SYMBOL	DIMENSIONS IN MILLIMETER	
	MIN	MAX
A	0.430	0.500
A1	0.000	0.050
b	0.170	0.270
b1	0.270	0.370
c	0.080	0.150
D	1.150	1.250
E	1.150	1.250
E1	0.750	0.850
e	0.800 TYP.	
$\theta$	0°	7°

**Front view**

**Soldering Pattern**

**Notice:**

1. Lead plating: Pb free solder
2. Lead thickness includes solder plating
3. Lead frame: CAC-5
4. Other Tolerance:  $\pm 0.05$
5. Dimensions are exclusive of Burrs, Mold Flash and Tie Bar extrusions
6. Unit: mm