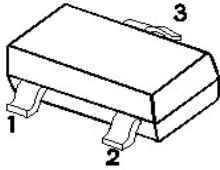


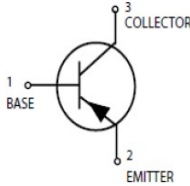
MMBT3906

SOT-23 Plastic-Encapsulate Transistors

SOT-23



- 1. BASE
- 2. EMITTER
- 3. COLLECTOR



Features

- ◆ Complementary to MMBT3904
- ◆ Power Dissipation of 200mW
- ◆ High Stability and High Reliability

Mechanical Data

SOT-23 Small Outline Plastic Package

Epoxy UL: 94V-0

Mounting Position: Any

Marking:2A

Maximum Ratings & Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

Parameters	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}	-40	V
Emitter -Base Voltage	V_{EBO}	-5	V
Collector Current-Continuous	I_C	-200	mA
Collector Power Dissipation	P_C	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55-+150	°C
Thermal resistance From junction to ambient	$R_{\theta JA}$	625	°C/W

Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified).

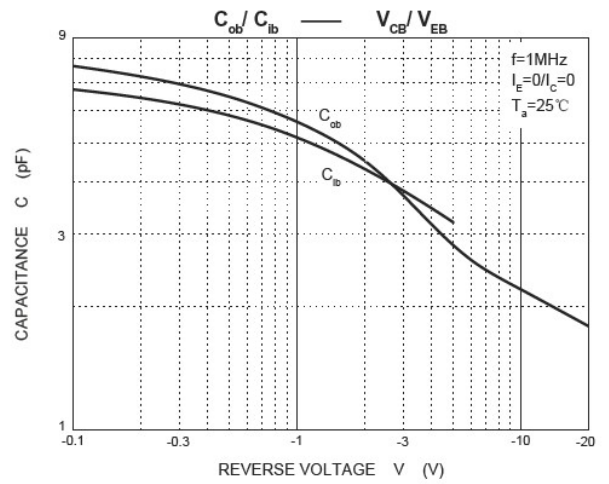
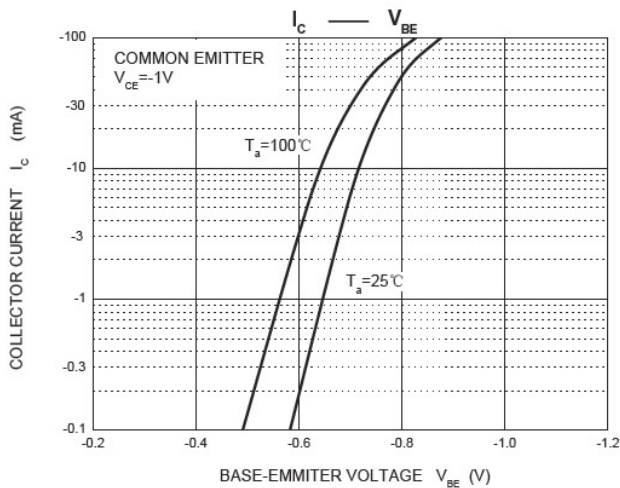
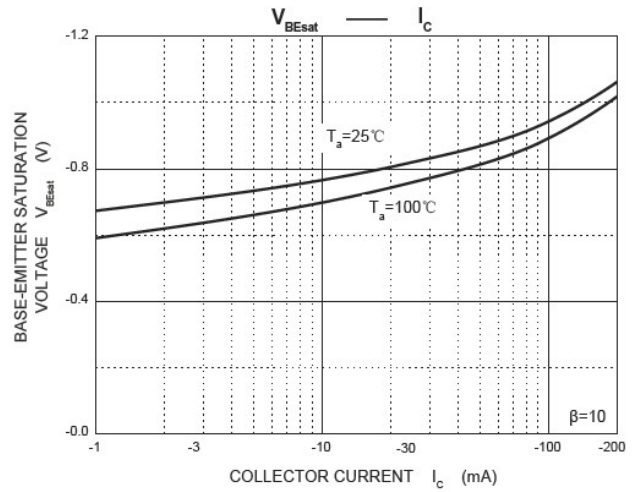
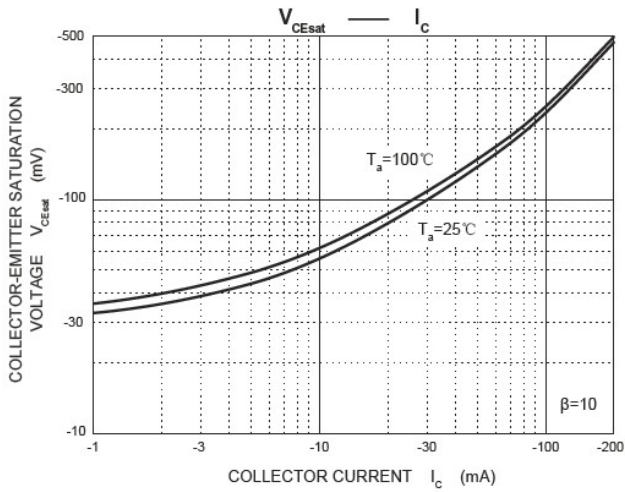
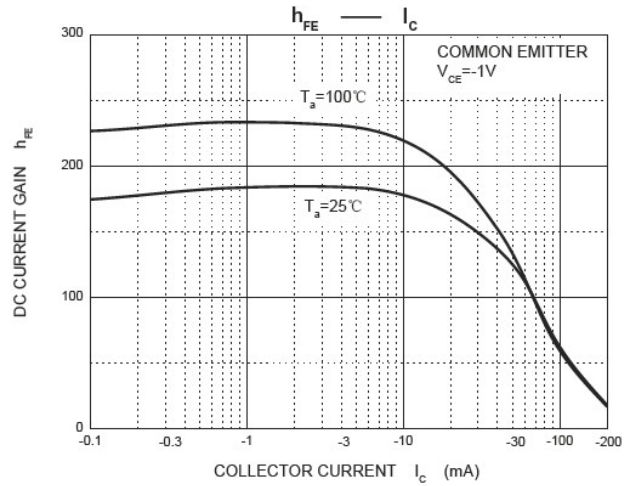
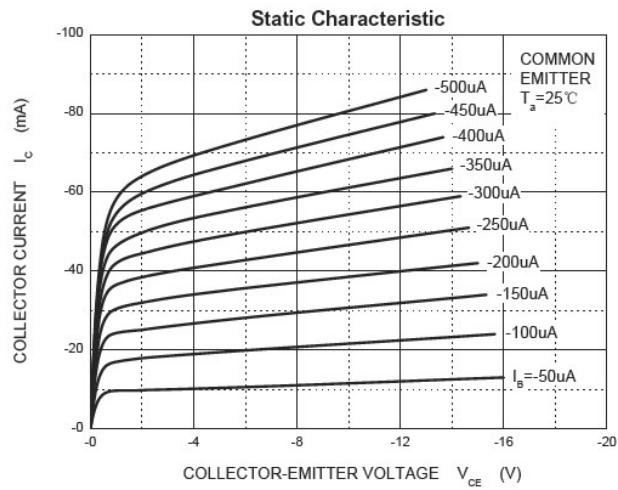
Parameter	Symbols	Test Condition	Limits		Unit
			Min	Max	
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, I_E=0$	-40		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-1mA, I_B=0$	-40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-10\mu A, I_C=0$	-5		V
Collector cut-off current	I_{CEX}	$V_{CE}=-30V, V_{EB(off)}=-3V$		-100	nA
Collector cut-off current	I_{CBO}	$V_{CB}=-40V, I_E=0$		-50	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	$V_{CE(sat)1}$	$I_C=-50mA, I_B=-5mA$		-0.30	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	$V_{CC}=-3V, I_C=-10mA, I_{B1}=I_{B2}=-1mA$		225	nS
Fall time	t_f	$V_{CC}=-3V, I_C=-10mA, I_{B1}=I_{B2}=-1mA$		75	nS

CLASSIFICATION OF $h_{FE(1)}$

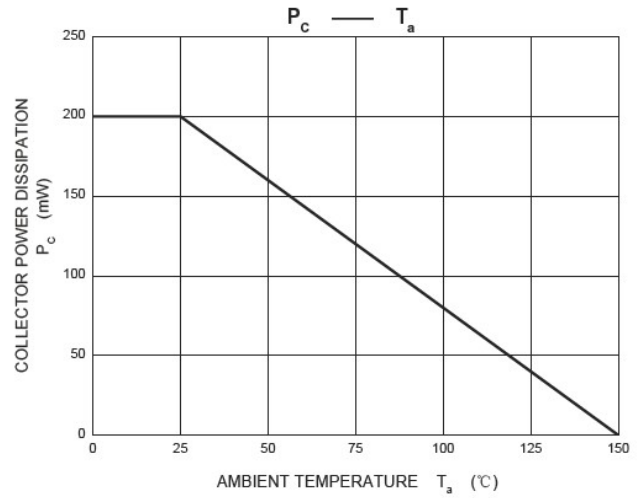
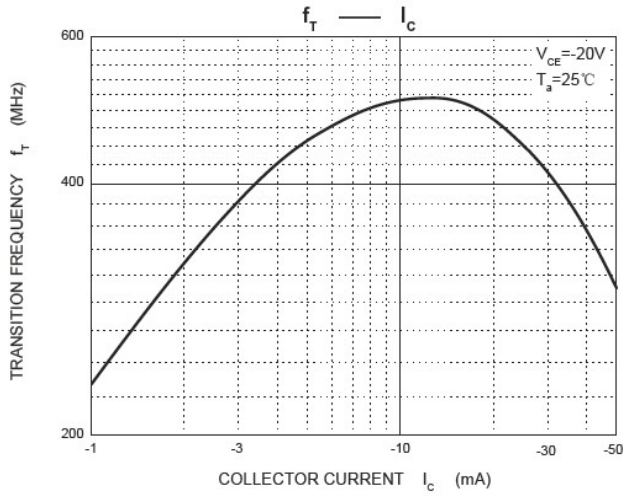
HFE	100-300	
RANK	L	H
RANGE	100-200	200-300

RATINGS AND CHARACTERISTIC CURVES MMBT3906

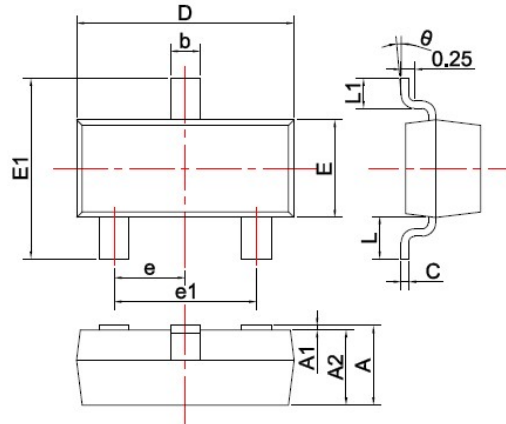
Typical Characteristics



RATINGS AND CHARACTERISTIC CURVES MMBT3906



SOT-23 PACKAGE OUTLINE Plastic surface mounted package

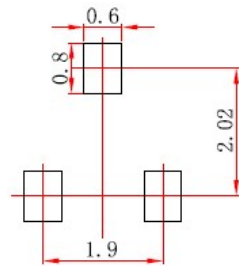


SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°

Unit: mm

Precautions: PCB Design

Recommended land dimensions for SOT-23 diode. Electrode patterns for PCBs



Note:

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