

MMBT3906

MMBT3906 SOT-23 Plastic-Encapsulate Transistors(PNP)

General description

SOT-23 Plastic-Encapsulate Transistors(NPN)

FEATURES

- Complementary to MMBT3904
- Power Dissipation of 200mW
- High Stability and High Reliability
- SOT-23 Small Outline Plastic Package
- Epoxy UL: 94V-0



DEVICE MARKING CODE:

Device Type	Device Marking
MMBT3906	2A

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

Parameters	Symbol	Value	Unit
Collector-Base Voltage	VCBO	-40	V
Collector-Emitter Voltage	VCEO	-40	V
Emitter -Base Voltage	VEBO	-5	V
Collector Current-Continuous	IC	-200	mA
Collector Power Dissipation	PC	200	mW
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55-+150	°C
Thermal resistance From junction to ambient	RθJA	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	IC=-10uA, IE=0	-40		V
Collector-emitter breakdown voltage	V(BR)CEO	IC=-1mA, IB=0	-40		V
Emitter-base breakdown voltage	V(BR)EBO	IE=-10uA, IC=0	-5		V
Collector cut-off current	ICEX	VCE=-30V, VEB(off)=-3V		-100	nA
Collector cut-off current	ICBO	VCB=-40V, IE=0		-50	nA
Emitter cut-off current	IEBO	VEB=-5V, IC=0		-100	nA
DC current gain	hFE(1)	VCE=-1V, IC=-10mA	100	300	
	hFE(2)	VCE=-1V, IC=-50mA	60		
	hFE(3)	VCE=-1V, IC=-100mA	30		
Collector-emitter saturation voltage	VCE(sat)1	IC=-50mA, IB=-5mA		-0.30	V
Base -emitter saturation voltage	VBE(sat)	IC=-50mA, IB=-5mA		-0.95	V
Transition frequency	fT	VCE=-20V, IC=-10mA, f=100MHz	300		MHz
Delay time	td	VCC=-3V, VBE(off)=-0.5V, IC=-10mA, IB1=-1mA		35	nS
Rise time	tr	VCC=-3V, VBE(off)=-0.5V, IC=-10mA, IB1=-1mA		35	nS
Storage time	ts	VCC=-3V, IC=-10mA, IB1=IB2=-1mA		225	nS
Fall time	tf	VCC=-3V, IC=-10mA, IB1=IB2=-1mA		75	nS

*Pulse test: pulse width ≤ 300us, duty cycle ≤ 2.0%



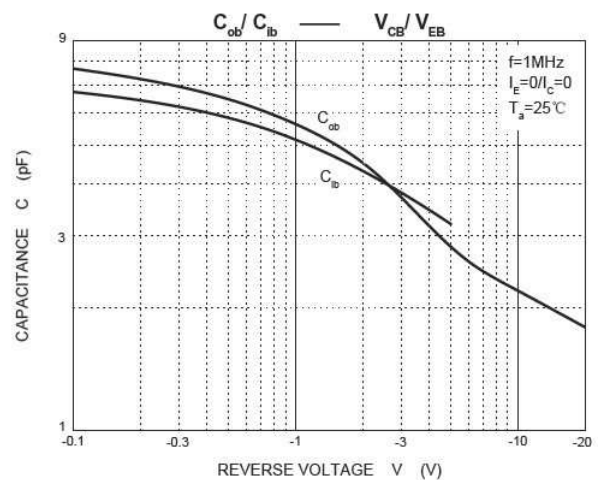
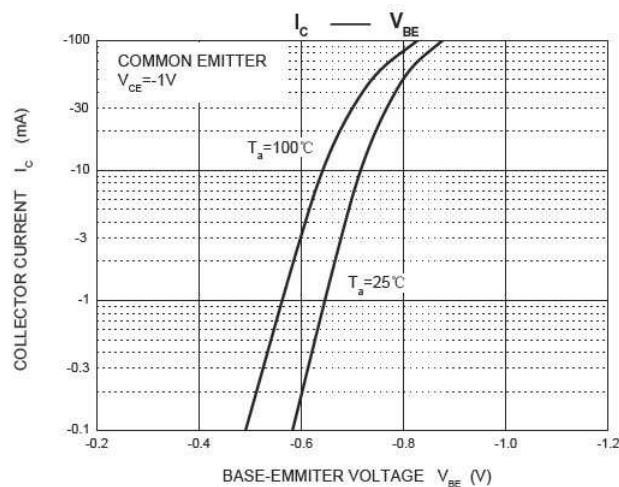
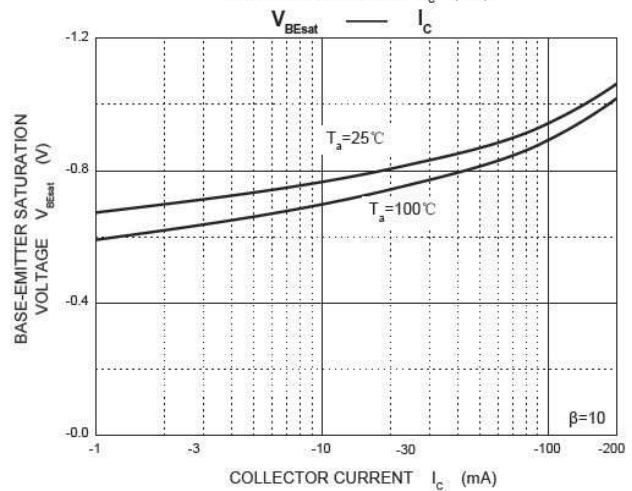
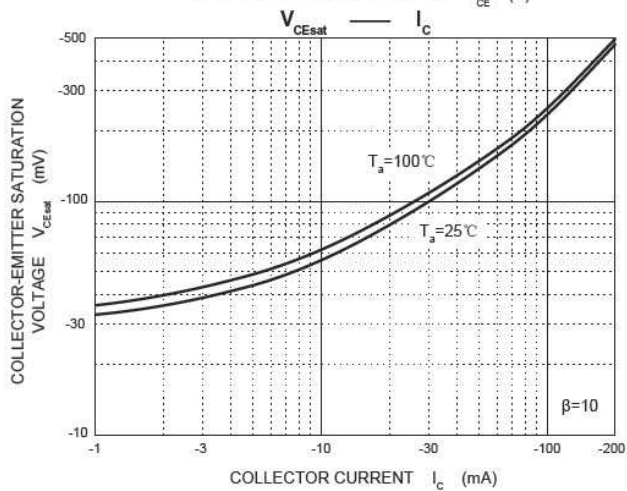
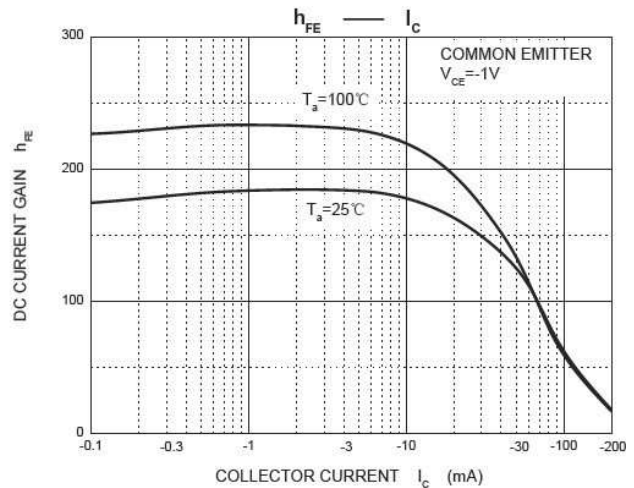
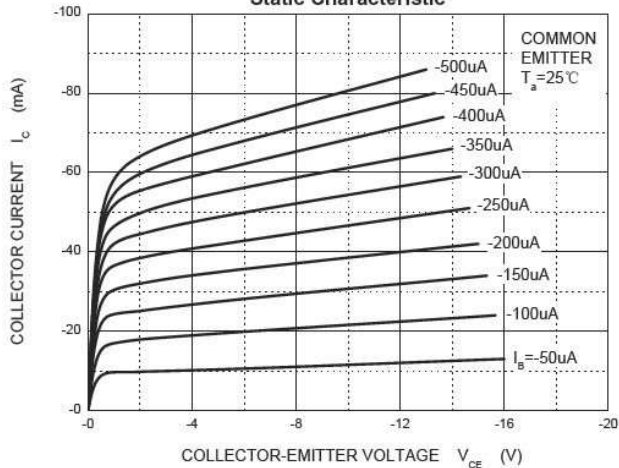
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CLASSIFICATION OF hFE(1)

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

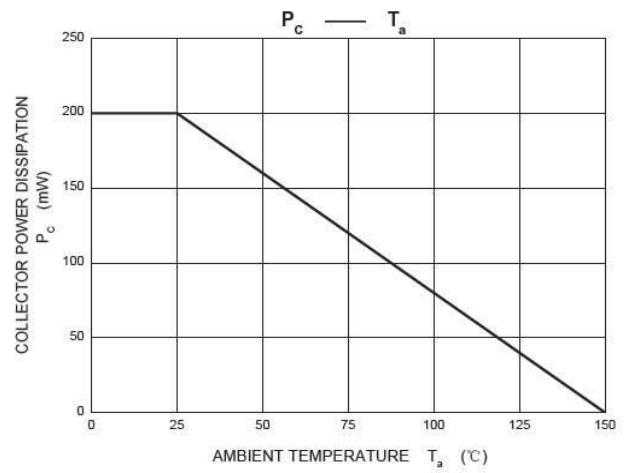
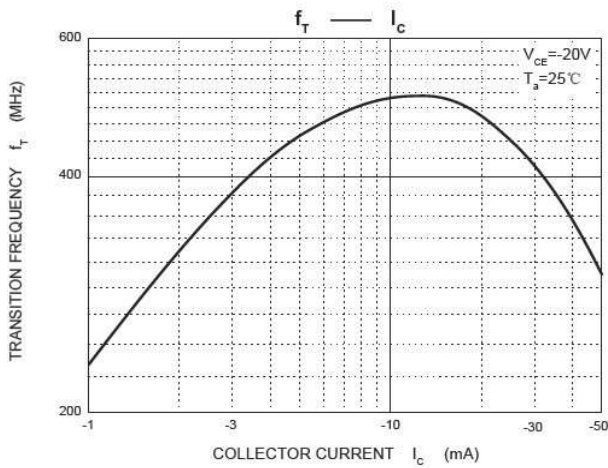
RATING AND CHARACTERISTIC CURVES

Static Characteristic

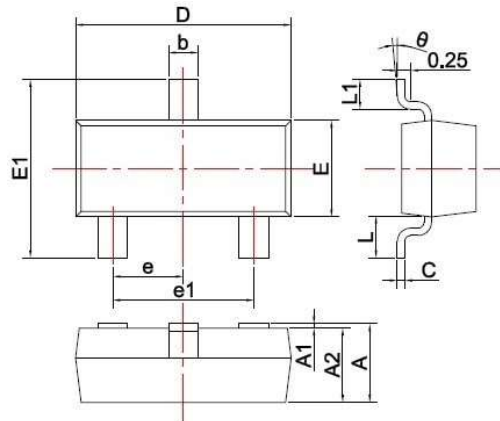




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SOT-23 PACKAGE OUTLINE Plastic surface mounted package

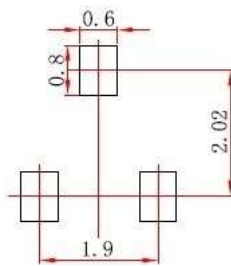


SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0 $^\circ$	8 $^\circ$

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.

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