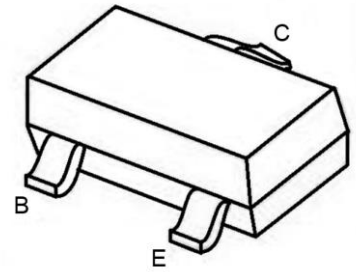
MMBT3906 Transistor(PNP)

SOT-23



Feature

- Epitaxial Planar Die Construction
- Complementary NPN Type Available(MMBT3904)
- Ideal for Medium Power Amplification and Switching
- AEC-Q101 Qualified
- Exsemi technology

Marking: 2A/ 3E

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Parameter	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	-0.2	A
Power Dissipation	P_d	0.3	W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

ELECTRICAL CHARACTERISTICS(T_a=25℃ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-10μA ,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=-10μA,I_C=0	-5		V
Collector cut-off current	I_{CBO}	V_{CB}=-30V, I_E=0		-50	nA
Collector cut-off current	I_{CEO}	V_{CE}=-30V, $V_{EB(OFF)}$=-3V		-50	nA
Base cut-off current	I_{BL}	V_{CE}=-30V, $V_{EB(OFF)}$=-3V		-50	nA
DC current gain	h_{FE}	V_{CE}=-1V, I_C=-10mA	100	300	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-10mA, I_B= -1mA		-0.25	V
		I_C=-50mA, I_B= -5mA		-0.4	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=-10mA, I_B= -1mA	-0.65	-0.85	V
		I_C=-50mA, I_B= -5mA		-0.95	V
Transition frequency	f_T	V_{CE}= -20V, I_C=-10mA, f =100MHz	250		MHZ
Output Capacitance	Cobo	VCB =-5.0V, f = 1.0MHz, IE = 0		4.5	pf
Input Capacitance	Cibo	VEB =-0.5V, f = 1.0MHz, IC = 0		10	pf
Delay Time	td	VCC =-3.0V, IC = -10mA, VBE(off) = 0.5V, IB1 = -1.0mA		35	ns
Rise Time	tr			35	ns
Storage Time	ts	VCC = -3.0V, IC = -10mA, IB1 = IB2 = -1.0mA		225	ns
Fall Time	tf			75	ns

Typical Characteristics

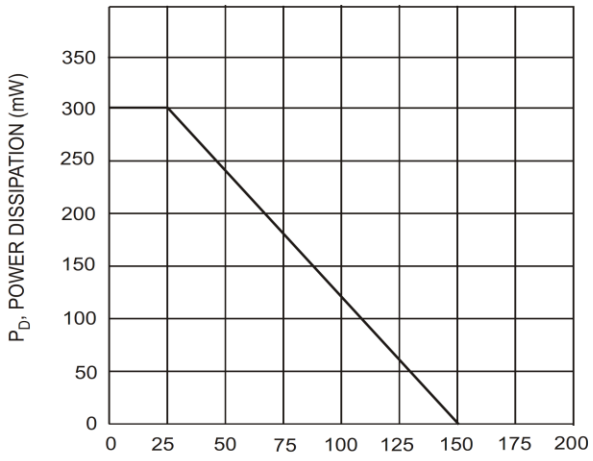


Fig. 1, Max Power Dissipation vs Ambient Temperature

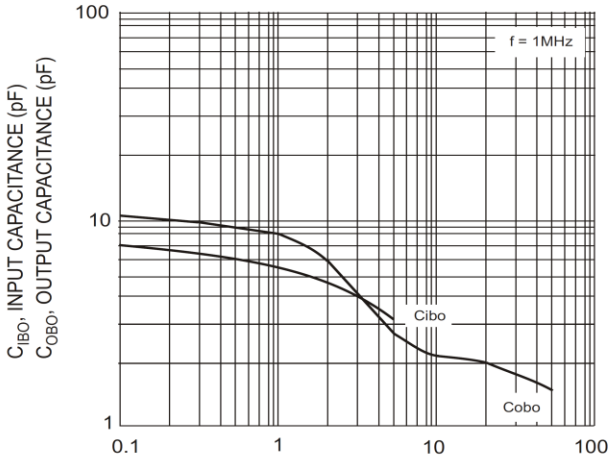


Fig. 2, Input and Output Capacitance vs. Collector-Base Voltage

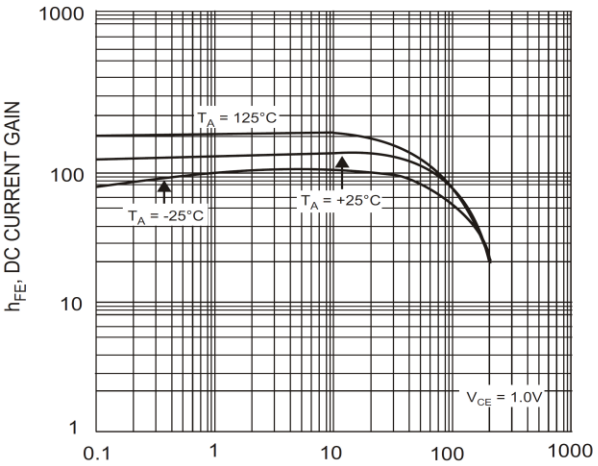


Fig. 3, Typical DC Current Gain vs Collector Current

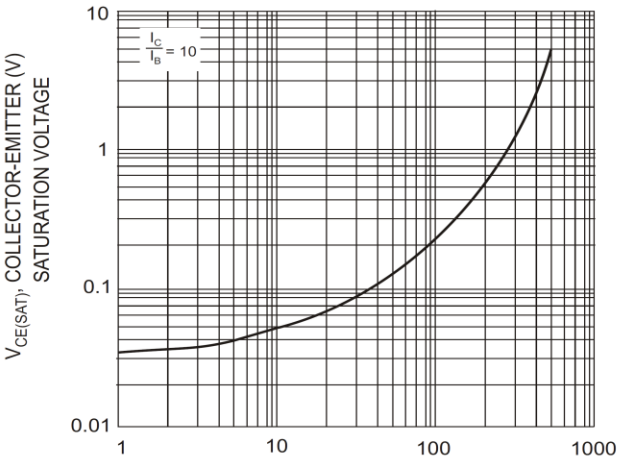


Fig. 4, Typical Collector-Emitter Saturation Voltage vs. Collector Current

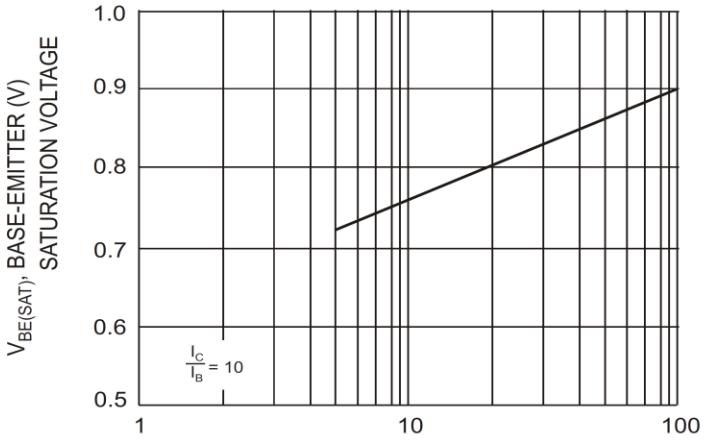
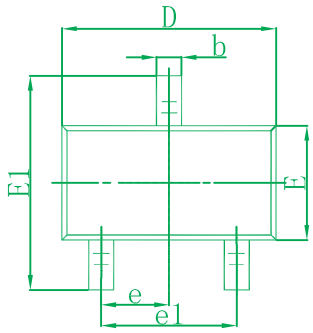
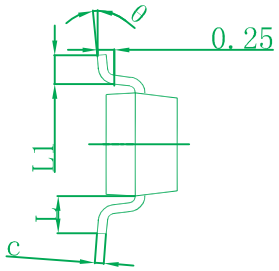
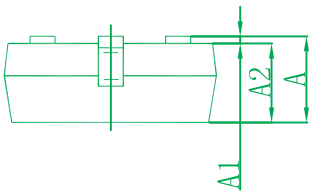


Fig. 5, Typical Base-Emitter Saturation Voltage vs. Collector Current

SOT-23 Package Information

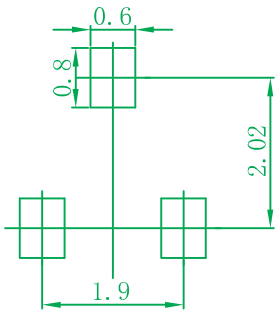






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.150	0.035	0.045
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.050	0.110	0.120
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 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°

SOT-23 Suggested Pad Layout



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

3000/Tape&Reel(7inches)

Ordering information

Device	Package	Shipping
MMBT3906	SOT-23	3000/Tape&Reel