

SOT-323 Plastic-Encapsulate Transistors

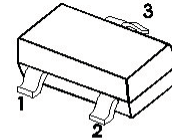
SOT-323

Features

- Complementary to MMBT3904W
- Power Dissipation of 200mW
- High Stability and High Reliability

Mechanical Data

- SOT-323 Small Outline Plastic Package
- Epoxy UL: 94V-0
- Mounting Position: Any



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

Marking: K5N

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

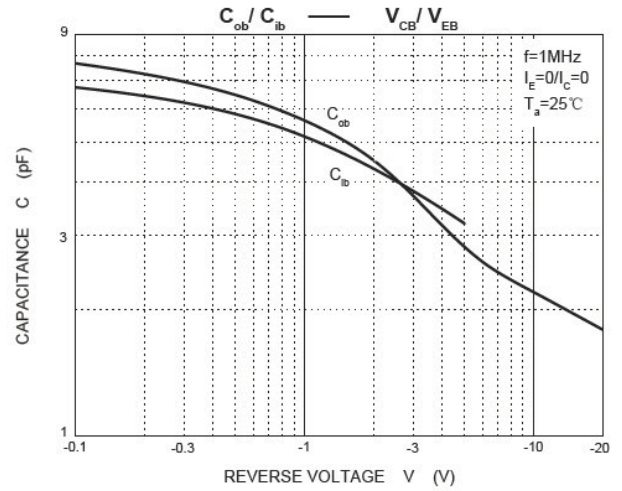
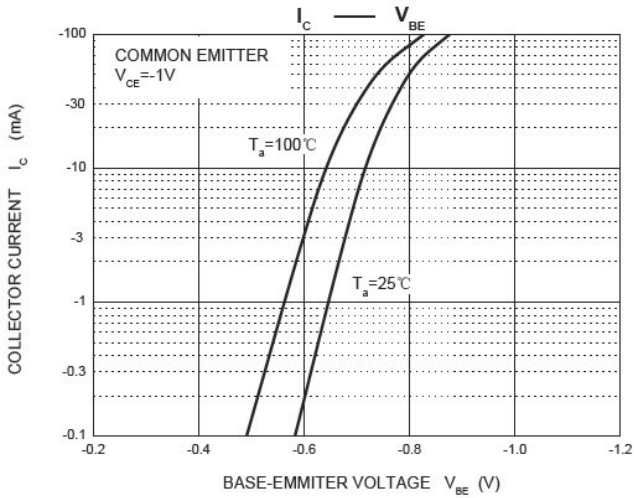
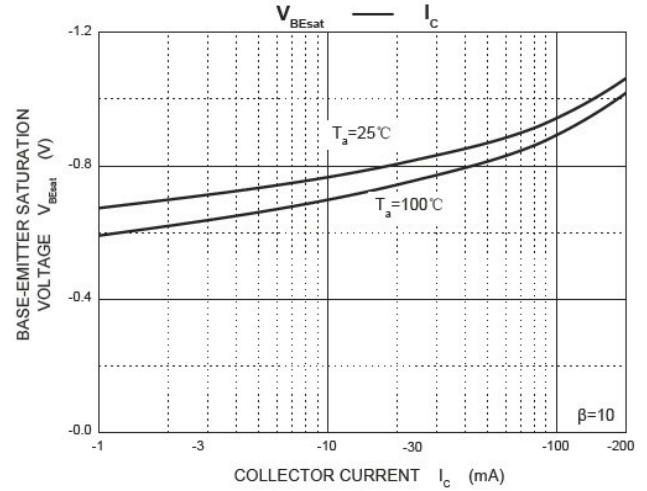
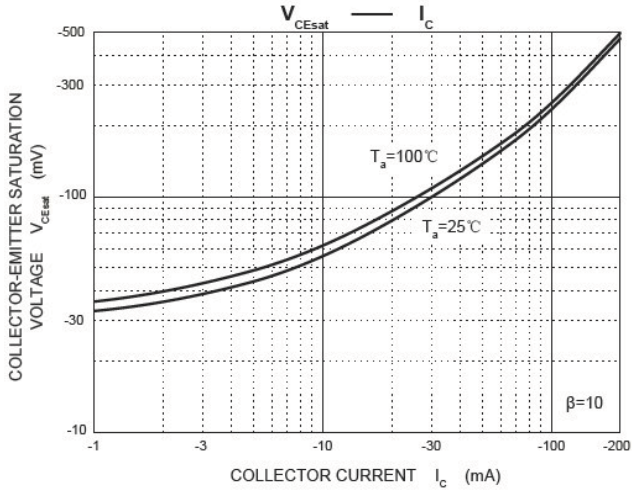
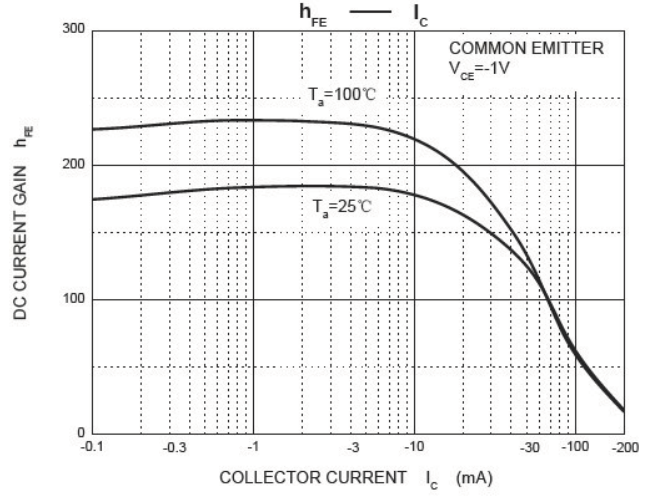
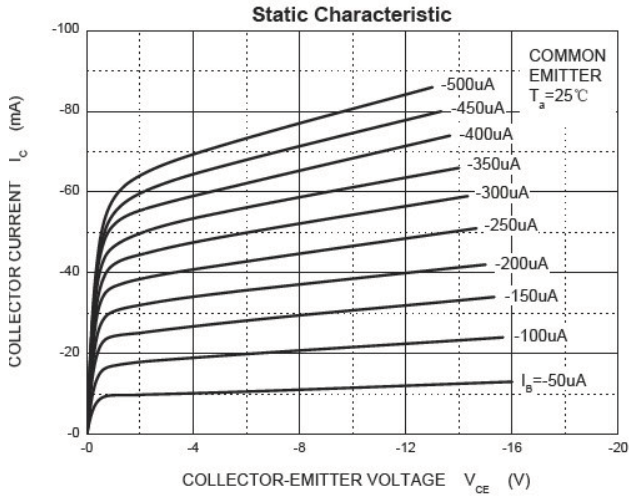
Parameters	Symbol	Value	Unit
Collector-Base Voltage	V _{CB0}	-40	V
Collector-Emitter Voltage	V _{CEO}	-40	V
Emitter -Base Voltage	V _{EBO}	-5	V
Collector Current-Continuous	I _C	-200	mA
Collector Power Dissipation	P _C	200	mW
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55-+150	°C
Thermal resistance From junction to ambient	R _{θJA}	625	°C/W

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

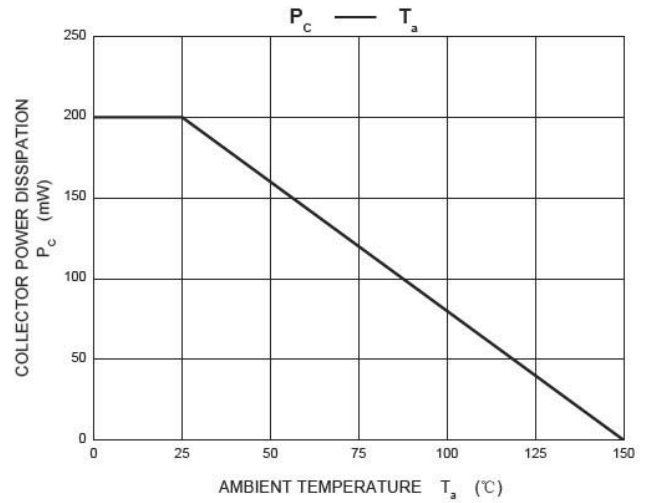
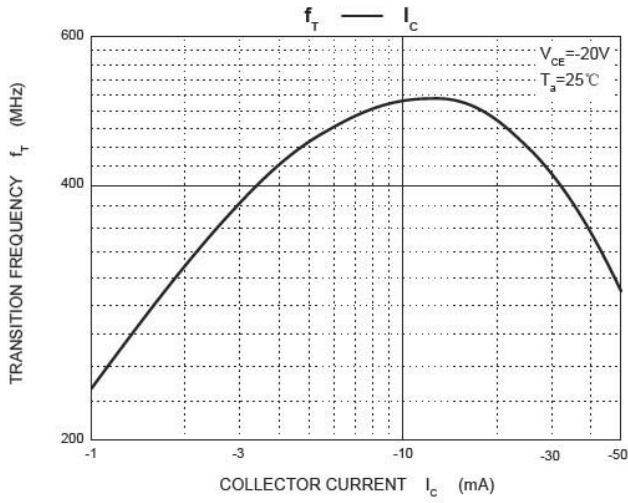
Parameter	Symbols	Test Condition	Limits		Unit
			Min	Max	
Collector-base breakdown voltage	V(BR)CBO	I _C =-10μA, I _E =0	-40		V
Collector-emitter breakdown voltage	V(BR)CEO	I _C =-1mA, I _B =0	-40		V
Emitter-base breakdown voltage	V(BR)EBO	I _E =-10μA, I _C =0	-5		V
Collector cut-off current	I _C EX	V _{CE} =-30V, V _{EB(off)} =-3V		-50	nA
Collector cut-off current	I _C B0	V _{CB} =-40V, I _E =0		-50	nA
DC current gain	hFE(1)	V _{CE} =-1V, I _C =-0.1mA	60		
	hFE(2)	V _{CE} =-1V, I _C =-1mA	80		
	hFE(3)	V _{CE} =-1V, I _C =-10mA	100	300	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =-10mA, I _B =-1mA		-0.20	V
		I _C =-50mA, I _B =-5mA		-0.30	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
Collector output capacitance	C _{ob}	V _{CB} =-5V, I _E =0, f=1MHz		4.5	pF
	C _{ib}	V _{EB} =-5V, I _E =0, f=1MHz		10	pF
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

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

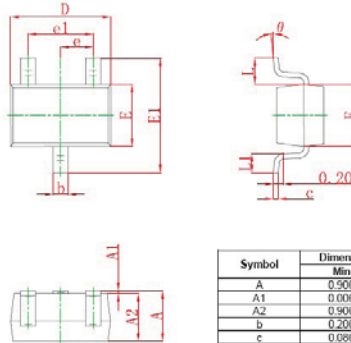
RATING AND CHARACTERISTICS CURVES (MMBT3906W)



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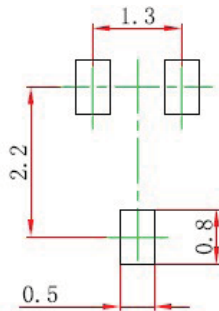
SOT-323 PACKAGE OUTLINE Plastic surface mounted package



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.800	0.100	0.030	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
phi	0°	8°	0°	8°

Precautions: PCB Design

Recommended land dimensions for SOT-323 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.

PACKAGING OF DIODE

REEL PACK

PACKAGE	PACKING CODE	REEL (EA)	COMPONENT SPACE(mm)	TAPE SPACE (mm)	REEL DIA (mm)	CARTON SIZE (mm)	EA PER CARTON	GROSS WEIGHT(Kg)
SOT-323	-T	3,000	---	---	178	390*205*310	120,000	5.29

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