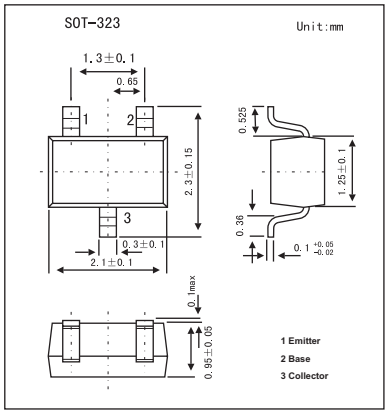
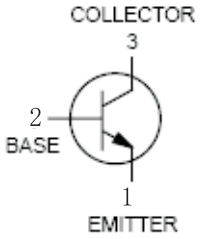
MMBT3906W



■ Features

- General purpose transistor.
- Pb?Free package is available.



■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Collector-emitter voltage	V_{CEO}	-40	V
Collector-base voltage	V_{CBO}	-40	V
Emitter-base voltage	V_{EBO}	-5	V
Collector current	I_C	-200	mA
Total Device Dissipation FR-5 Board	P_D	150	mW
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	833	℃/W
Junction temperature	T_j	150	℃
Storage temperature	T_{stg}	-55 to +150	℃

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C = -1.0 mA, I_B = 0	-40			V
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C = -10 μA, I_E = 0	-40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E = -10 μA, I_C = 0	-5			V
Base cutoff current	I_{BL}	V_{CE} = -30 V, V_{EB} = -3.0 V			-50	nA
Collector cutoff current	I_{CEX}	V_{CE} = -30 V, V_{EB} = -3.0 V			-50	nA
DC current gain *	H_{FE}	I_C = -0.1 mA, V_{CE} = -1.0 V I_C = -1.0 mA, V_{CE} = -1.0 V I_C = -10 mA, V_{CE} = -1.0 V I_C = -50 mA, V_{CE} = -1.0 V I_C = -100 mA, V_{CE} = -1.0 V	60 80 100 60 30		300	
Collector-emitter saturation voltage *	$V_{CE(sat)}$	I_C = -10 mA, I_B = -1.0 mA			-0.25	V
		I_C = -50 mA, I_B = -5.0 mA			-0.4	
Base-emitter saturation voltage *	$V_{BE(sat)}$	I_C = -10 mA, I_B = -1.0 mA	-0.65		-0.85	
		I_C = -50 mA, I_B = -5.0 mA			-0.95	
Current-gain-bandwidth product	f_T	I_C = -10 mA, V_{CE} = -20 V, f = 100 MHz	250			MHz
Output capacitance	C_{obo}	V_{CB} = -5.0 V, I_E = 0, f = 1.0 MHz			4.5	pF
Input capacitance	C_{ibo}	V_{EB} = -0.5 V, I_C = 0, f = 1.0 MHz			10	pF
Input impedance	h_{ie}	V_{CE} = -10 V, I_C = -1.0 mA, f = 1.0 kHz	2.0		12	kΩ
Voltage feedback ratio	h_{re}	V_{CE} = -10 V, I_C = -1.0 mA, f = 1.0 kHz	0.1		10	$X10^{-4}$
Small-signal current gain	h_{fe}	V_{CE} = -10 V, I_C = -1.0 mA, f = 1.0 kHz	100		400	
Output admittance	h_{oe}	V_{CE} = -10 V, I_C = -1.0 mA, f = 1.0 kHz	3.0		60	μmhos
Noise figure	NF	V_{CE} = -5.0 V, I_C = -100 μA, R_S = 1.0 kΩ, f = 1.0 kHz			4.0	dB
Delay time	t_d	V_{CC} = -3.0 V, V_{BE} = 0.5 V			35	ns
Rise time	t_r	I_C = -10 mA, I_{B1} = -1.0 mA			35	ns
Storage time	t_s	V_{CC} = -3.0 V, I_C = -10 mA			225	ns
Fall time	t_f	I_{B1} = I_{B2} = -1.0 mA			75	ns

* Pulse test: pulse width ⩽ 300 μs, duty cycle ⩽ 2.0%.

■ Marking

Marking	2A