

<p>PNP型 小功率 贴片开关三极管 PNP Switching Transistor SMD</p>	<p>MMBT3906 对应其他工业型号 3906</p>
<ul style="list-style-type: none"> ■ Excellent hFE linearity ■ Low noise ■ Transistor Polarity: PNP ■ Transistor pinout: BEC ■ SOT-23 Package ■ Marking Code: 2A ■ hFE: 100~200, 200~300 	

<p>Inner circuit</p>  <p>SOT-23 内部结构</p>	<p>MMBT3906</p>  <p>1. Base 2. Emitter 3. Collector</p> <p>SOT-23 管脚排列</p>	<p>元件标识 (打印)</p>  <p>DEVICE MARKING</p>
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■ CLASSIFICATION OF hFE

RANK	L	H
RANGE	100~200	200~300

■ MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	-40	V
V_{CEO}	Collector-Emitter Voltage	-40	V
V_{EBO}	Emitter-Base Voltage	-6	V
I_C	Collector Current	-200	mA
P_C	Collector Power Dissipation	300	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	417	°C/W
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	°C

■ ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$ unless otherwise noted 25°C)

Characteristic	Test Condition	Symbol	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage	$I_B=0, I_C=-1\text{mA}$	$V_{(BR)CEO}$	-40	--	--	V
Collector-Base Breakdown Voltage	$I_E=0, I_C=-10\mu\text{A}$	$V_{(BR)CBO}$	-40	--	--	
Emitter-Base Breakdown Voltage	$I_C=0, I_E=-10\mu\text{A}$	$V_{(BR)EBO}$	-6.0	--	--	
Base Cutoff Current	$V_{CE}=-30\text{V}, V_{EB}=-3\text{V}$	I_{BEX}	--	--	-50	nA
Collector Cutoff Current	$V_{CE}=-30\text{V}, V_{EB}=-3\text{V}$	I_{CEX}	--	--	-50	
DC Current Gain	$I_C=-0.1\text{mA}, V_{CE}=-1\text{V}$	hFE	40	--	--	
	$I_C=-1\text{mA}, V_{CE}=-1\text{V}$		70	--	--	
	$I_C=-10\text{mA}, V_{CE}=-1\text{V}$		100	--	300	
	$I_C=-50\text{mA}, V_{CE}=-1\text{V}$		60	--	--	
	$I_C=-100\text{mA}, V_{CE}=-1\text{V}$		30	--	300	
Collector-Emitter Saturation Voltage	$I_C=-10\text{mA}, I_B=-1\text{mA}$	$V_{CE(sat)}$	--	--	0.25	V
	$I_C=-50\text{mA}, I_B=-5\text{mA}$		--	--	0.40	
Base-Emitter Saturation Voltage	$I_C=-10\text{mA}, I_B=-1\text{mA}$	$V_{BE(sat)}$	0.65	--	0.85	
	$I_C=-50\text{mA}, I_B=-5\text{mA}$		--	--	0.95	
Current-Gain-Bandwidth Product	$I_C=-10\text{mA}, V_{CE}=-20\text{V}, f=100\text{MHz}$	f_T	300	--	--	MHz
Collector Output Capacitance	$V_{CB}=-5\text{V}, I_E=0, f=1\text{MHz}$	C_{OB}	--	--	4.0	pF
Input Capacitance	$V_{EB}=-0.5\text{V}, I_C=0, f=1\text{MHz}$	C_{ibo}	--	--	8.0	
Input Impedance	$I_C=-1\text{mA}, V_{CE}=-10\text{V}, f=1\text{kHz}$	h _{ie}	1.0	--	10	K Ω
Voltage Feedback Ratio	$I_C=-1\text{mA}, V_{CE}=-10\text{V}, f=1\text{kHz}$	h _{re}	0.5	--	8.0	$\times 10^{-4}$
Small-Signal Current Gain	$I_C=-1\text{mA}, V_{CE}=-10\text{V}, f=1\text{kHz}$	hFE	100	--	400	
Output Admittance	$I_C=-1\text{mA}, V_{CE}=-10\text{V}, f=1\text{kHz}$	h _{oe}	1.0	--	40	$\mu\Omega$
Noise Figure	$I_C=-100\mu\text{A}, V_{CE}=-5\text{V}, R_s=1\text{K}\Omega, f=1\text{kHz}$	NF	--	--	5.0	db
Delay Time	$V_{CC}=-30\text{V}, V_{BE(off)}=-0.5\text{V}$ $I_C=-10\text{mA}, I_{B1}=-1\text{mA}$	t_d	--	--	35	nS
Rise Time		t_r	--	--	35	
Storage Time	$V_{CC}=-30\text{V}, I_C=-10\text{mA}$ $I_{B1} = I_{B2} = -1\text{mA}$	t_s	--	--	225	
Fall Time		t_f	--	--	75	

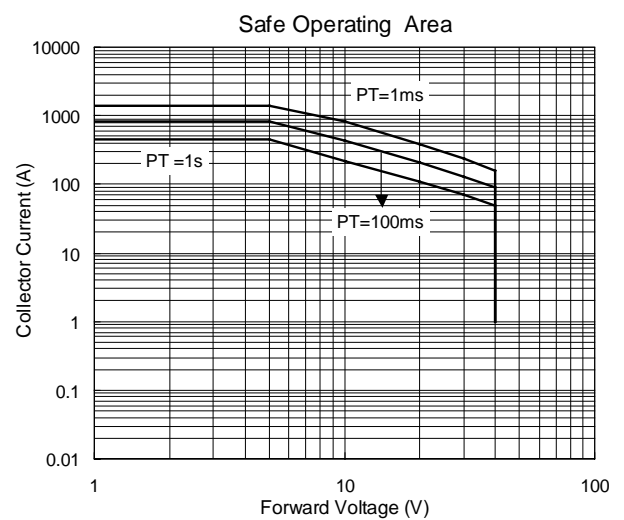
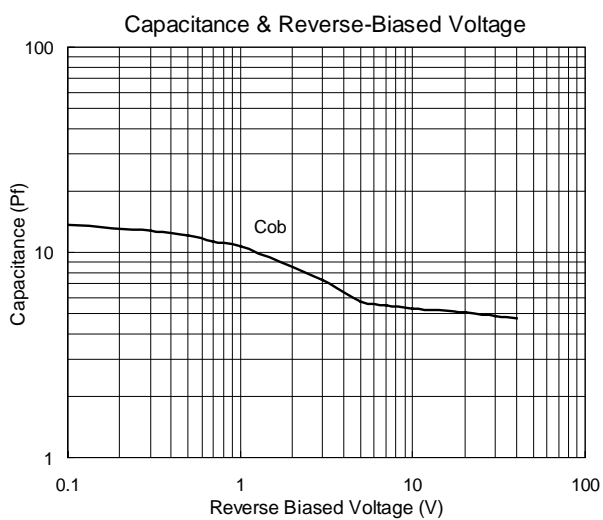
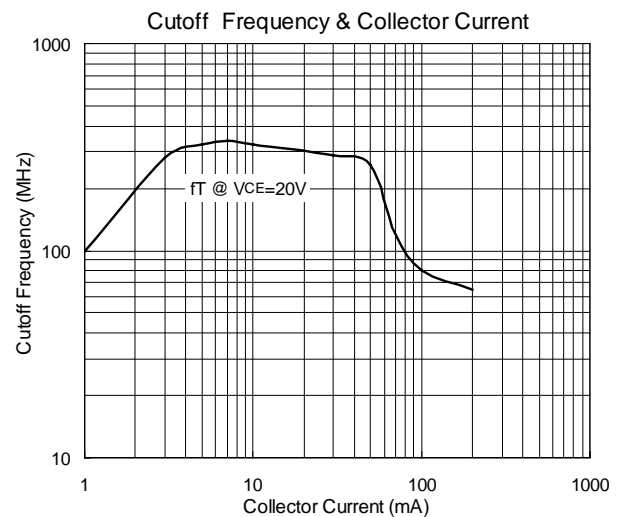
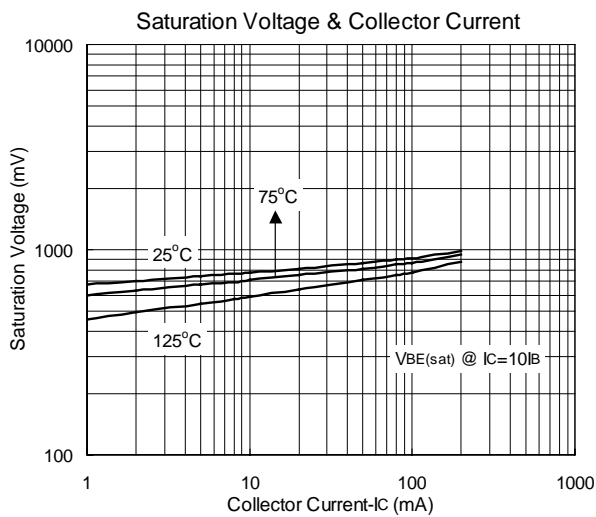
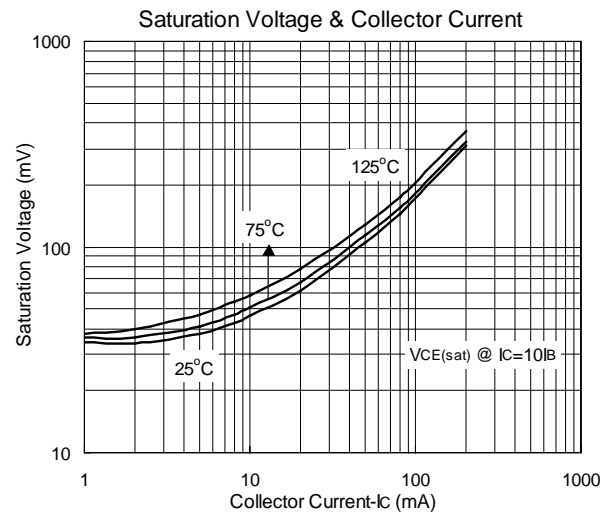
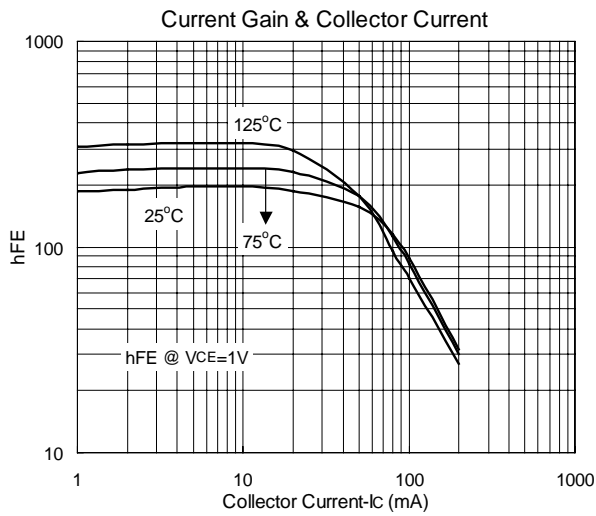
1. FR-5 = 1.0 × 0.75 × 0.062 in.

2. Alumina = 0.4 × 0.3 × 0.024 in. 99.5% alumina.

 3. Pulse Width ≤ 300 μs ; Duty Cycle ≤ 2.0%.

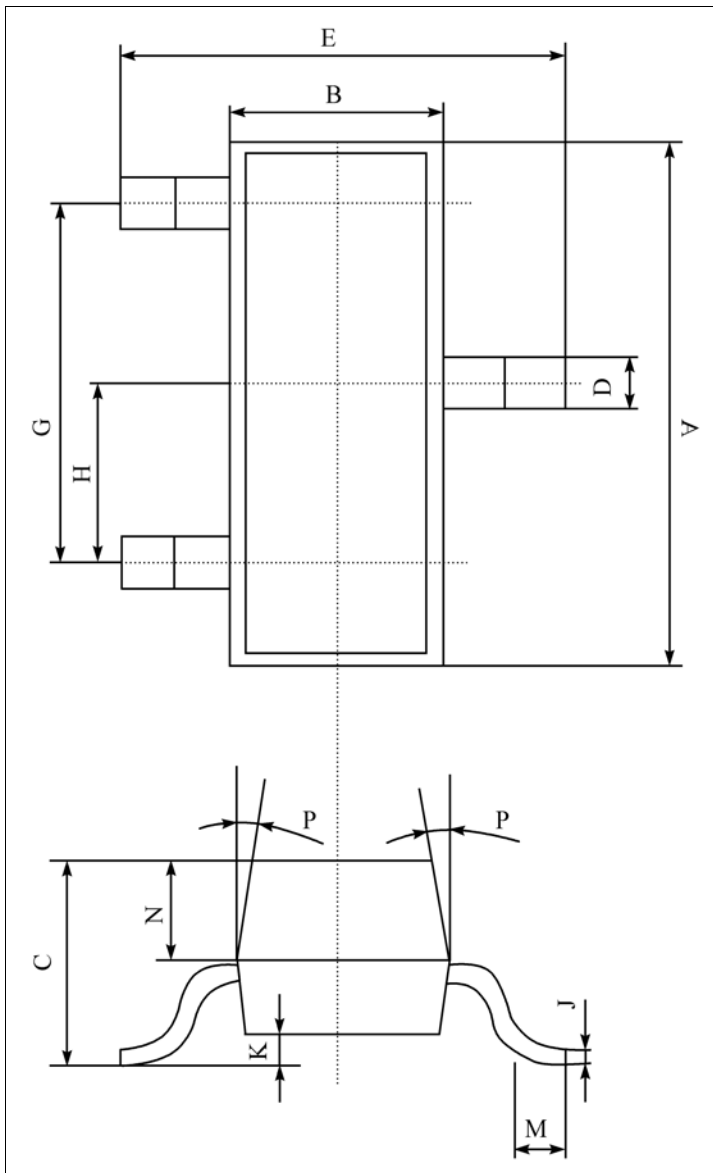
 4. Pulse Test: Pulse Width ≤ 300 μs ; Duty Cycle ≤ 2.0%.

■ TYPICAL CHARACTERISTICS



■ DIMENSION

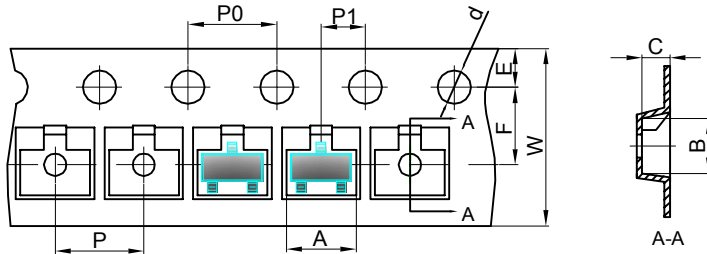
单位 (UNIT) : mm



序号	数值及公差
A	2.90±0.10
B	1.30±0.10
C	1.00±0.10
D	0.40±0.10
E	2.40±0.20
G	1.90±0.10
H	0.95±0.05
J	0.13±0.05
K	0.00-0.10
M	≥0.20
N	0.60±0.10
P	7±2°
Packing SOT-23 包装规格 SMD片式表面贴封装 包装方式: 载带卷盘包装 Tape & Reel, 3Kpcs/Reel 每卷数量3000只 (3Kpcs/Reel) 每盒数量45000只 (45Kpcs/BOX) 每箱数量180000只 (180Kpcs/Cartons)	

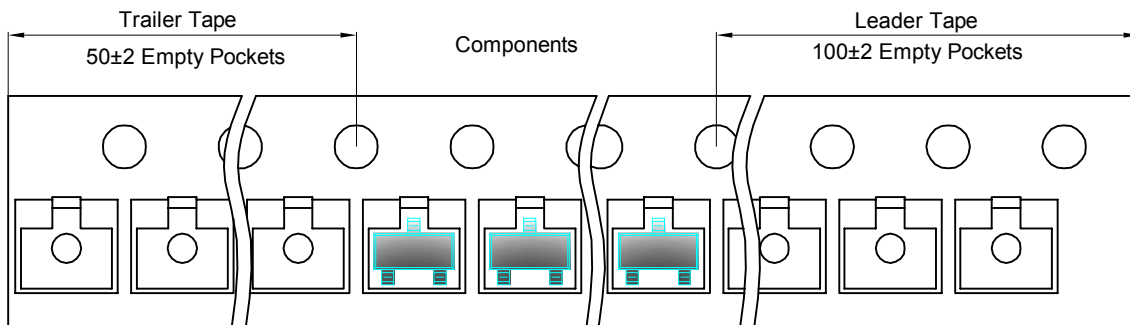
SOT-23 Tape and reel

SOT-23 Embossed Carrier Tape

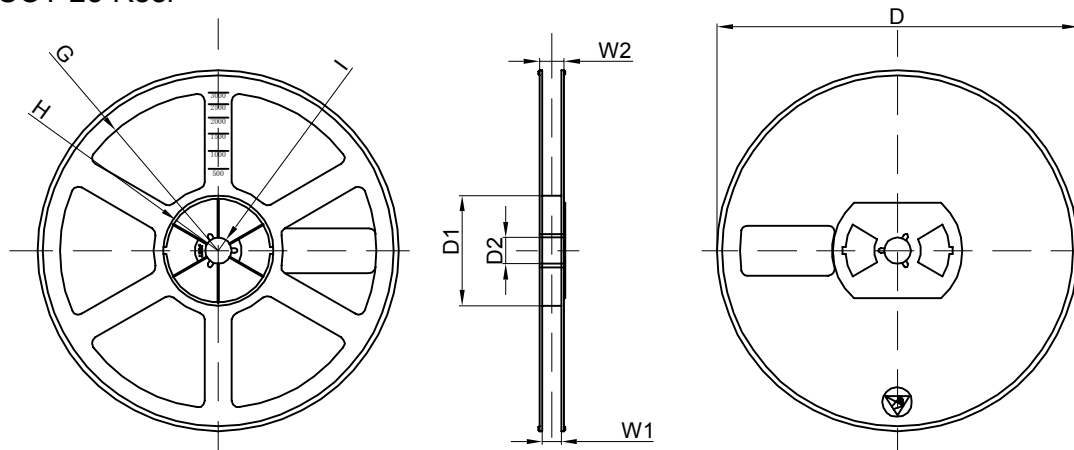


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer



SOT-23 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	192×192×193	180,000 pcs	404×404×214	