



安徽富信半导体科技有限公司

ANHUI FOSAN SEMICONDUCTOR TECHNOLOGY CO., LTD.

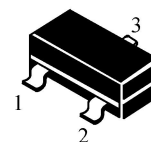
MMBT2222AW

SOT-323 Bipolar Transistor 双极型三极管

■ Features 特点

NPN Switching 开关

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



■ Absolute Maximum Ratings 最大额定值

Characteristic 特性参数	Symbol 符号	Rat 额定值	Unit 单位
Collector-Base Voltage 集电极基极电压	V_{CBO}	75	V
Collector-Emitter Voltage 集电极发射极电压	V_{CEO}	40	V
Emitter-Base Voltage 发射极基极电压	V_{EBO}	6	V
Collector Current 集电极电流	I_C	600	mA
Power dissipation 耗散功率	$P_C(T_a=25^{\circ}C)$	200	mW
Thermal Resistance Junction-Ambient 热阻	$R_{\theta JA}$	625	$^{\circ}C/W$
Junction and Storage Temperature 结温和储藏温度	T_J, T_{stg}	-55to+150 $^{\circ}C$	

■ Device Marking 产品打标

MMBT2222AW=K3P

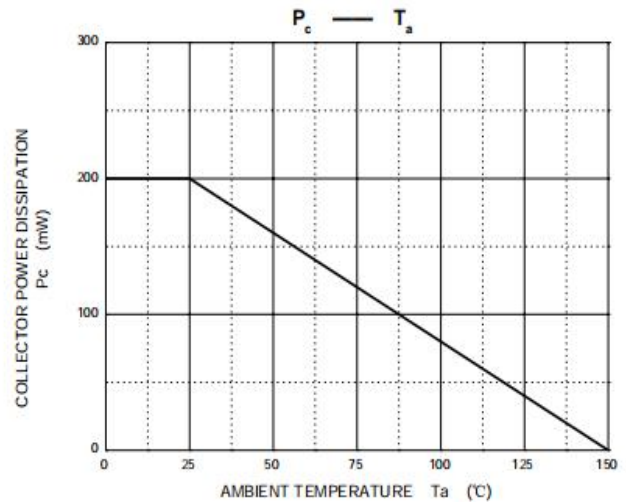
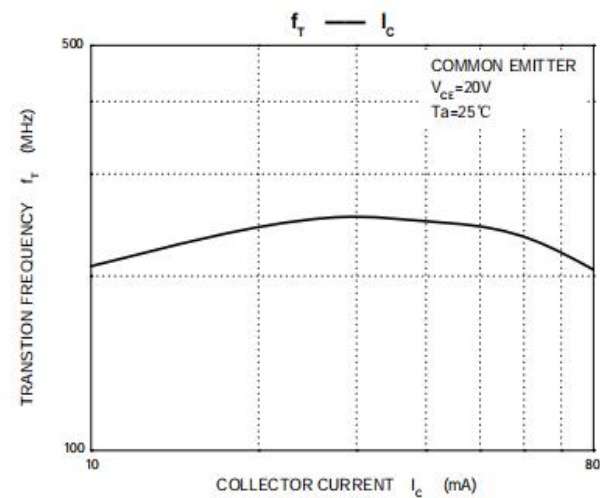
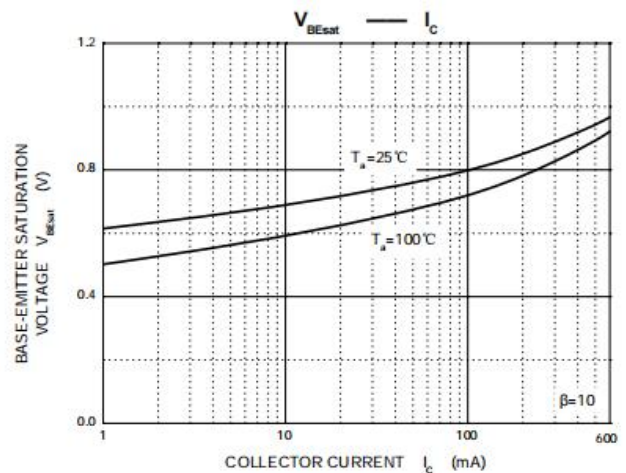
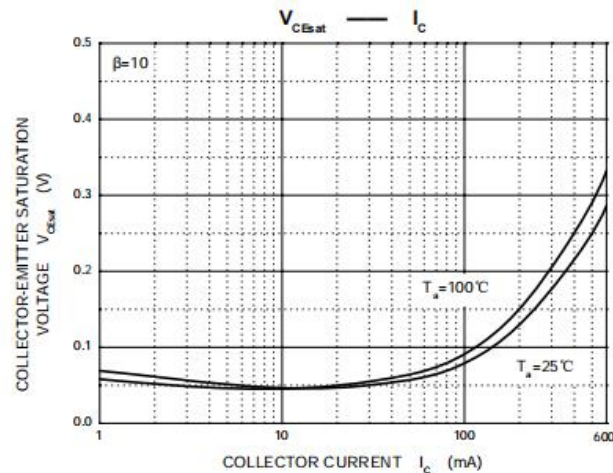
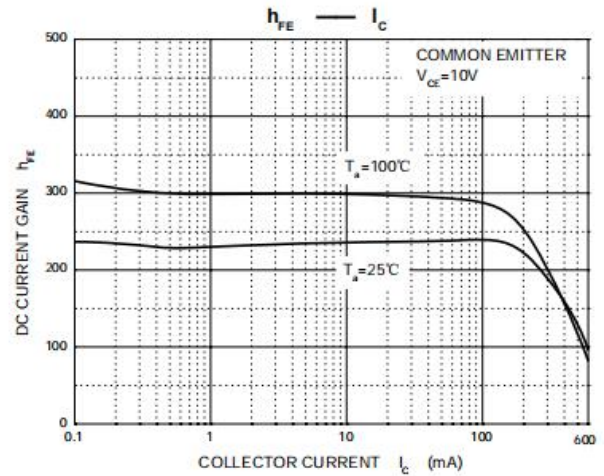
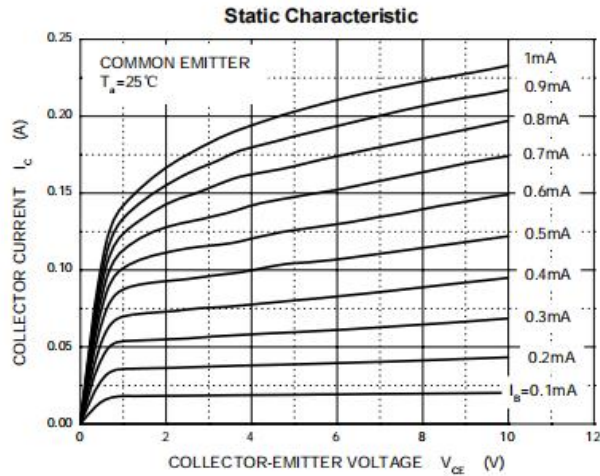


■ Electrical Characteristics 电特性

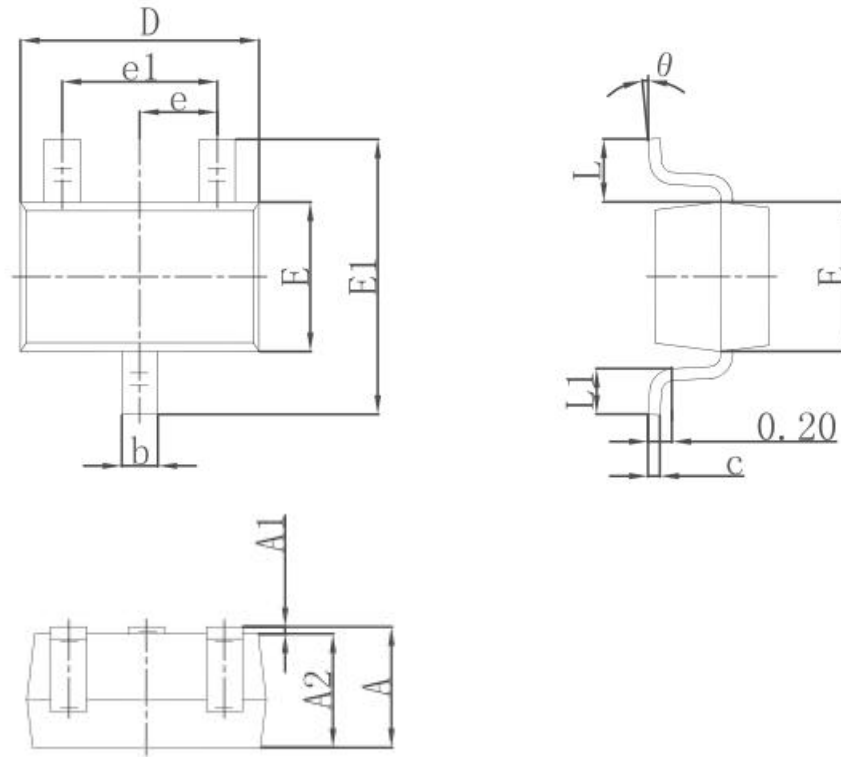
($T_A=25^{\circ}\text{C}$ unless otherwise noted 如无特殊说明, 温度为 25°C)

Characteristic 特性参数	Symbol 符号	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Collector-Base Breakdown Voltage 集电极基极击穿电压($I_C=1\text{mA}$, $I_E=0$)	BV_{CBO}	75	—	—	V
Collector-Emitter Breakdown Voltage 集电极发射极击穿电压($I_C=10\text{mA}$, $I_B=0$)	BV_{CEO}	40	—	—	V
Emitter-Base Breakdown Voltage 发射极基极击穿电压($I_E=1\text{mA}$, $I_C=0$)	BV_{EBO}	6	—	—	V
Collector-Base Leakage Current 集电极基极漏电流($V_{CB}=50\text{V}$, $I_E=0$)	I_{CBO}	—	—	100	nA
Collector-Emitter Leakage Current 集电极发射极漏电流($V_{CE}=30\text{V}$, $V_{BE}=-0.5\text{V}$)	I_{CEX}	—	—	100	nA
Emitter-Base Leakage Current 发射极基极漏电流($V_{EB}=4\text{V}$, $I_C=0$)	I_{EBO}	—	—	100	nA
DC Current Gain($V_{CE}=10\text{V}$, $I_C=0.1\text{mA}$) 直流电流增益($V_{CE}=10\text{V}$, $I_C=150\text{mA}$) ($V_{CE}=10\text{V}$, $I_C=500\text{mA}$)	H_{FE}	35 100 40	—	300	
Collector-Emitter Saturation Voltage 集电极发射极饱和压降($I_C=500\text{mA}$, $I_B=50\text{mA}$) ($I_C=150\text{mA}$, $I_B=15\text{mA}$)	$V_{CE(sat)}$	—	—	0.6 0.4	V
Base-Emitter Saturation Voltage 基极发射极饱和压降($I_C=500\text{mA}$, $I_B=50\text{mA}$) ($I_C=150\text{mA}$, $I_B=15\text{mA}$)	$V_{BE(sat)}$	—	—	2 1.2	V
Transition Frequency 特征频率($V_{CE}=20\text{V}$, $I_C=20\text{mA}$)	f_T	300	—	—	MHz
Delay Time 延迟时间 ($V_{CC}=30\text{V}$, $V_{BE}=-0.5\text{V}$, $I_C=150\text{mA}$, $I_{B1}=15\text{mA}$)	t_d	—	—	10	ns
Rise Time 上升时间 ($V_{CC}=30\text{V}$, $V_{BE}=-0.5\text{V}$, $I_C=150\text{mA}$, $I_{B1}=15\text{mA}$)	t_r	—	—	25	ns
Storage Time 贮存时间 ($V_{CC}=30\text{V}$, $I_C=150\text{mA}$, $I_{B1}=I_{B2}=15\text{mA}$)	t_s	—	—	225	ns
Fall Time 下降时间 ($V_{CC}=30\text{V}$, $I_C=150\text{mA}$, $I_{B1}=I_{B2}=15\text{mA}$)	t_f	—	—	60	ns

■ Typical Characteristic Curve 典型特性曲线



■Dimension 外形封装尺寸



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	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
θ	0°	8°	0°	8°