

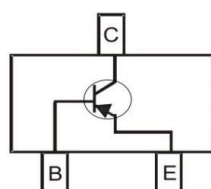
SOT-23 Bipolar Transistor 双极型三极管



■Features 特点

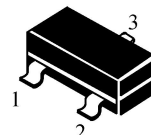
PNP Switching 开关

■Absolute Maximum Ratings 最大额定值



SOT-23

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



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}	-40	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}	-5	V
Collector Current 集电极电流	I_C	-600	mA
Power dissipation 耗散功率	$P_C(T_a=25^{\circ}C)$	250	mW
Thermal Resistance Junction-Ambient 热阻	$R_{\theta JA}$	500	$^{\circ}C/W$
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

MMBT4403-6AF=2T

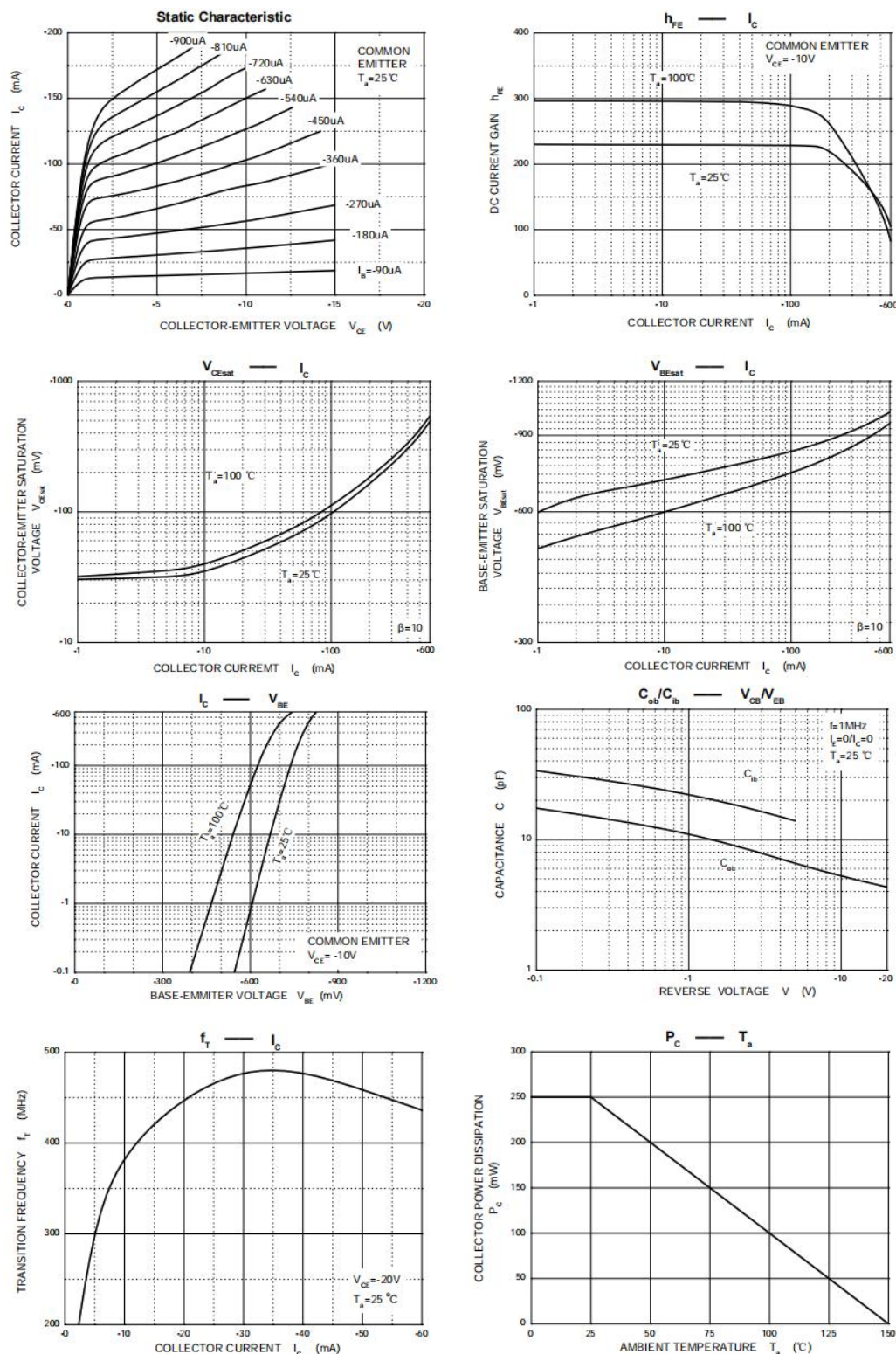


■Electrical Characteristics 电特性

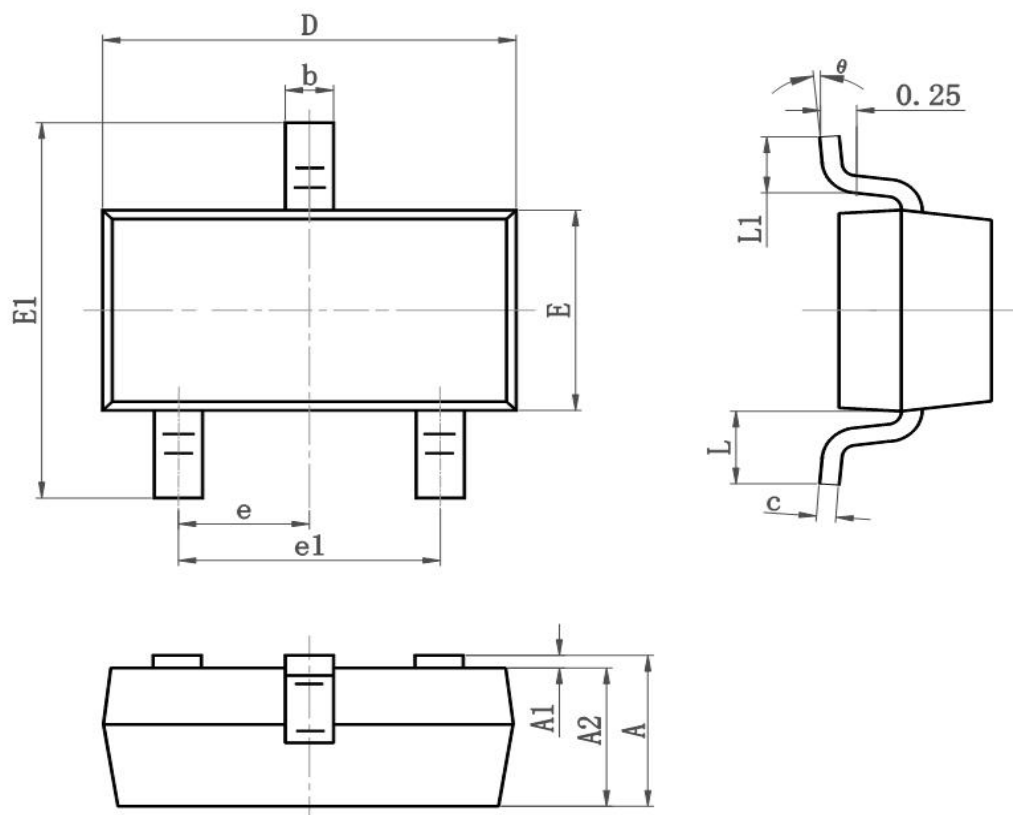
($T_A=25^{\circ}\text{C}$ unless otherwise noted 如无特殊说明, 温度为 25°C)

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($I_C = -10\mu\text{A}$, $I_E = 0$)	BV_{CBO}	-40	—	—	V
Collector-Emitter Breakdown Voltage 集电极发射极击穿电压($I_C = -1\text{mA}$, $I_B = 0$)	BV_{CEO}	-40	—	—	V
Emitter-Base Breakdown Voltage 发射极基极击穿电压($I_E = -10\mu\text{A}$, $I_C = 0$)	BV_{EBO}	-5	—	—	V
Collector-Base Leakage Current 集电极基极漏电流($V_{CB} = -35\text{V}$, $I_E = 0$)	I_{CBO}	—	—	-100	nA
Collector-Emitter Leakage Current 集电极发射极漏电流($V_{CE} = -35\text{V}$, $V_{BE} = 0.5\text{V}$)	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($V_{CE} = -2\text{V}$, $I_C = -150\text{mA}$) 直流电流增益($V_{CE} = -1\text{V}$, $I_C = -0.1\text{mA}$) ($V_{CE} = -2\text{V}$, $I_C = -500\text{mA}$)	H_{FE}	100 30 20	—	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($I_C = -500\text{mA}$, $I_B = -50\text{mA}$) ($I_C = -150\text{mA}$, $I_B = -15\text{mA}$)	$V_{BE(sat)}$	—	—	-2.6 -1.3	V
Transition Frequency 特征频率($V_{CE} = -20\text{V}$, $I_C = -20\text{mA}$)	f_T	200	—	—	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	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.050	0.055
E1	2.250	2.550	0.089	0.100
e	0.900	1.00	0.035	0.039
e1	1.800	2.000	0.071	0.079
L	0.500	0.600	0.020	0.024
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°