

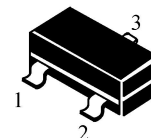
SOT-23 Bipolar Transistor 双极型三极管

■ **Features 特点**

NPN High Voltage 高压

SOT-23

- 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}	300	V
Collector-Emitter Voltage 集电极发射极电压	V_{CEO}	300	V
Emitter-Base Voltage 发射极基极电压	V_{EBO}	5	V
Collector Current 集电极电流	I_C	300	mA
Collector Peak Current 集电极脉冲电流	I_{CM}	500	mA
Power dissipation 耗散功率	$P_C(T_a=25^\circ\text{C})$	350	mW
Thermal Resistance Junction-Ambient 热阻	$R_{\theta JA}$	357	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature 结温和储藏温度	T_J, T_{stg}	-55to+150 $^\circ\text{C}$	

■ **Device Marking 产品打标**

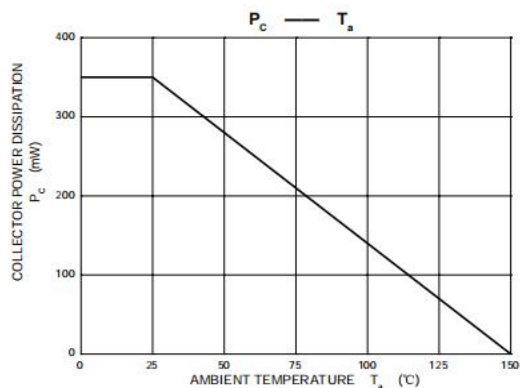
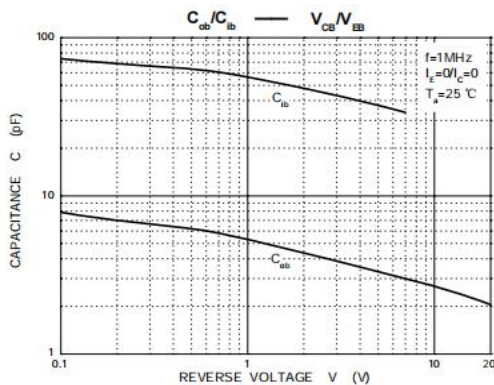
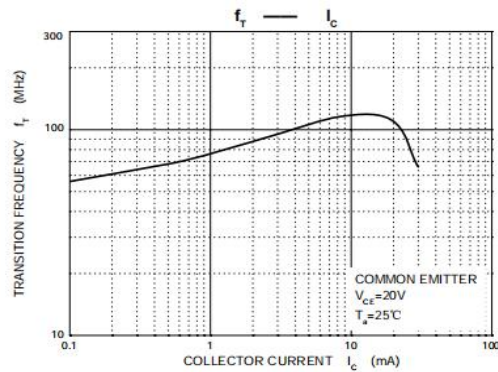
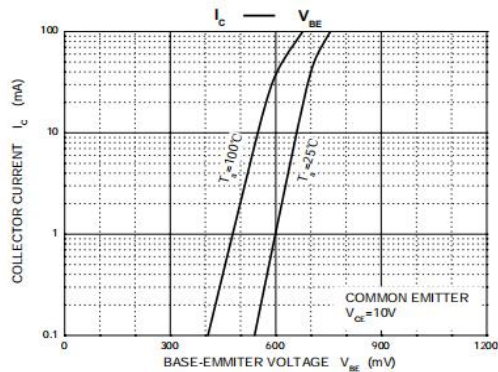
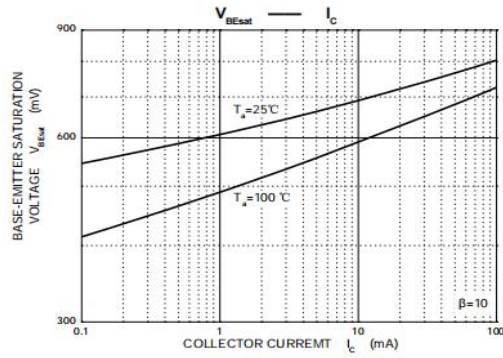
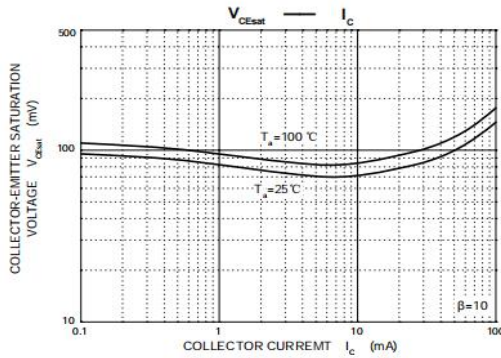
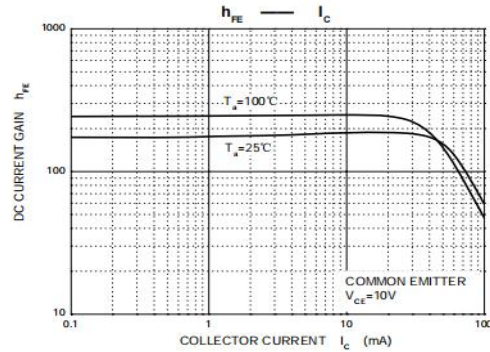
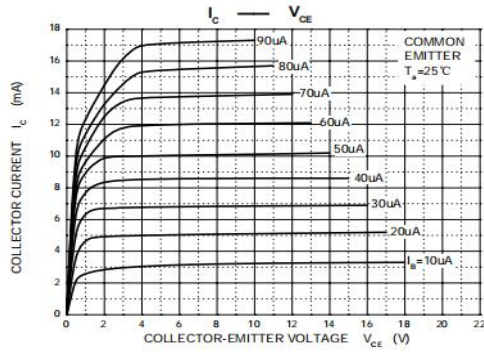
MMBTA42=1D

■ 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($I_C=100\mu\text{A}$, $I_E=0$)	BV_{CBO}	300	—	—	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}	300	—	—	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($V_{CB}=300\text{V}$, $I_E=0$)	I_{CBO}	—	—	100	nA
Collector-Emitter Leakage Current 集电极发射极漏电流($V_{CE}=200\text{V}$, $I_B=0$)	I_{CEO}	—	—	100	nA
Emitter-Base Leakage Current 发射极基极漏电流($V_{EB}=5\text{V}$, $I_C=0$)	I_{EBO}	—	—	100	nA
DC Current Gain 直流电流增益($V_{CE}=10\text{V}$, $I_C=1\text{mA}$)	$H_{FE(1)}$	60	—	—	
DC Current Gain 直流电流增益($V_{CE}=10\text{V}$, $I_C=10\text{mA}$)	$H_{FE(2)}$	100	—	200	
DC Current Gain 直流电流增益($V_{CE}=10\text{V}$, $I_C=30\text{mA}$)	$H_{FE(3)}$	60	—	—	
Collector-Emitter Saturation Voltage 集电极发射极饱和压降($I_C=20\text{mA}$, $I_B=2\text{mA}$)	$V_{CE(sat)}$	—	—	0.2	V
Base-Emitter Saturation Voltage 基极发射极饱和压降($I_C=20\text{mA}$, $I_B=2\text{mA}$)	$V_{BE(sat)}$	—	—	0.9	V
Transition Frequency 特征频率($V_{CE}=20\text{V}$, $I_C=10\text{mA}$)	f_T	50	—	—	MHz
Output Capacitance 输出电容($V_{CB}=20\text{V}$, $I_E=0$, $f=1\text{MHz}$)	C_{ob}	—	6	—	pF

■ 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°