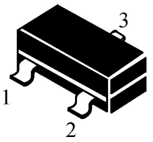
SOT-23 Bipolar Transistor 双极型三极管

■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}	400	V
Collector-Emitter Voltage 集电极发射极电压	V_{CEO}	350	V
Emitter-Base Voltage 发射极基极电压	V_{EBO}	6	V
Collector Current 集电极电流	I_C	200	mA
Pulsed Collector Current 集电极脉冲电流	I_{CM}	300	mA
Power dissipation 耗散功率	$P_C(T_a=25℃)$	350	mW
Thermal Resistance Junction-Ambient 热阻	$R_{\Theta JA}$	357	℃/W
Junction and Storage Temperature 结温和储藏温度	T_J,T_{stg}	-55to+150℃	

■Device Marking 产品打标

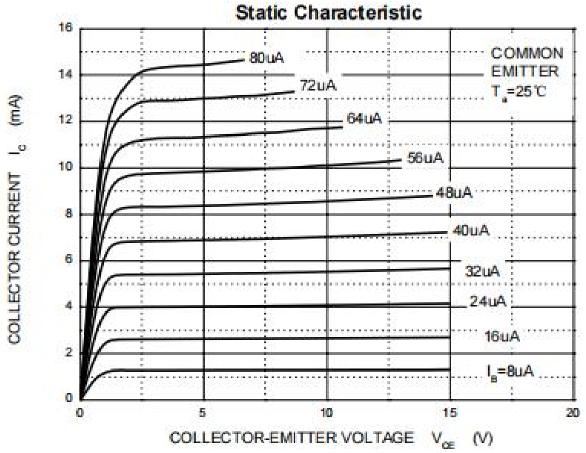
MMBTA45=3D

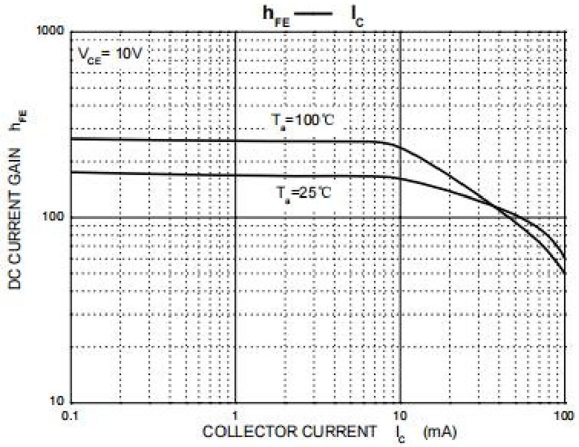
■Electrical Characteristics 电特性

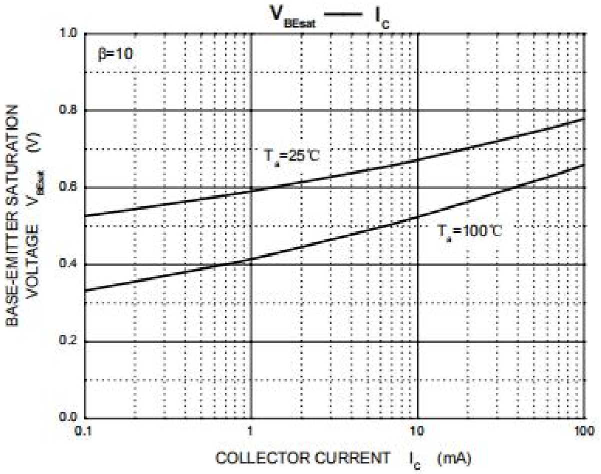
(T_A=25℃ unless otherwise noted 如无特殊说明，温度为 25℃)

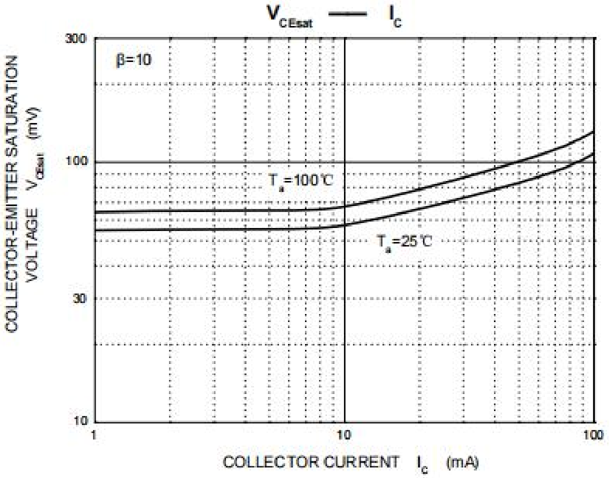
Characteristic 特性参数	Symbol 符号	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Collector-Base Breakdown Voltage 集电极基极击穿电压(I_C=100μA，I_E=0)	BV_{CBO}	400	—	—	V
Collector-Emitter Breakdown Voltage 集电极发射极击穿电压(I_C=1mA，I_B=0)	BV_{CEO}	350	—	—	V
Emitter-Base Breakdown Voltage 发射极基极击穿电压(I_E=10μA，I_C=0)	BV_{EBO}	6	—	—	V
Collector-Base Leakage Current 集电极基极漏电流(V_{CB}=400V，I_E=0)	I_{CBO}	—	—	100	nA
Collector-Emitter Leakage Current 集电极发射极漏电流(V_{CE}=300V，I_B=0)	I_{CEO}	—	—	100	nA
Emitter-Base Leakage Current 发射极基极漏电流(V_{EB}=6V，I_C=0)	I_{EBO}	—	—	100	nA
DC Current Gain 直流电流增益(V_{CE}=10V，I_C=1mA)	$H_{FE}(1)$	50	—	—	
DC Current Gain 直流电流增益(V_{CE}=10V，I_C=10mA)	$H_{FE}(2)$	80	—	300	
DC Current Gain 直流电流增益(V_{CE}=10V，I_C=50mA)	$H_{FE}(3)$	40	—	—	
DC Current Gain 直流电流增益(V_{CE}=10V，I_C=100mA)	$H_{FE}(4)$	40	—	—	
Collector-Emitter Saturation Voltage 集电极发射极饱和压降 (I_C=10mA，I_B=1mA) (I_C=50mA，I_B=5mA)	$V_{CE(sat)}$	—	—	0.2 0.3	V
Base-Emitter Saturation Voltage 基极发射极饱和压降(I_C=10mA，I_B=1mA)	$V_{BE(sat)}$	—	—	0.75	V
Transition Frequency 特征频率(V_{CE}=20V，I_C=10mA)	f_T	50	—	—	MHz
Input Capacitance 输入电容(V_{CB}=20V，I_E=0, f=1MHz)	Cib	—	130	—	pF
Output Capacitance 输出电容(V_{CB}=20V，I_E=0, f=1MHz)	Cob	—	7	—	pF

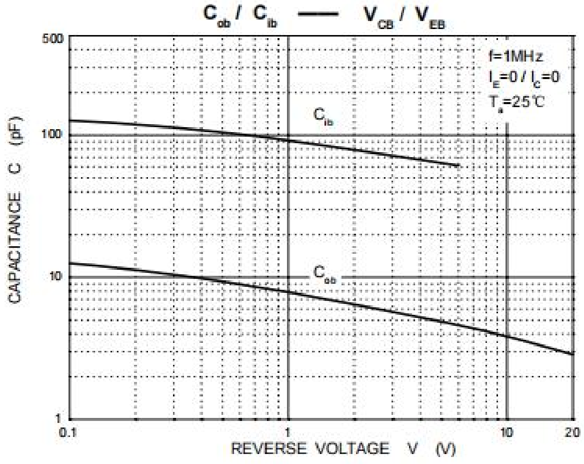
■Typical Characteristic Curve 典型特性曲线

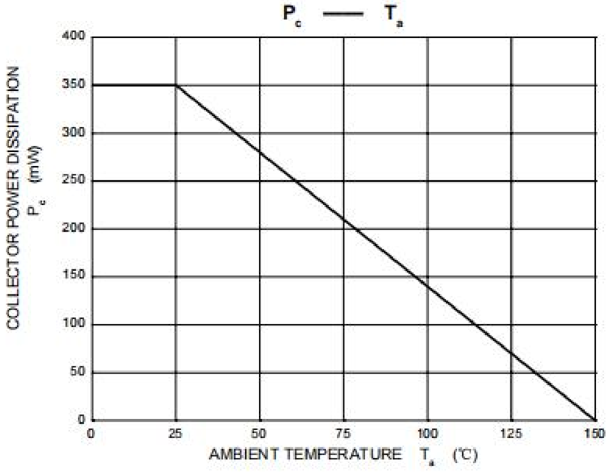

Static Characteristic


h_{FE} —— I_C

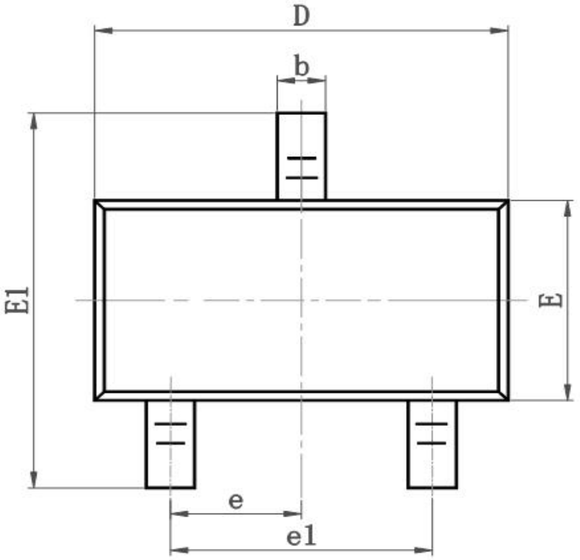

V_{BEsat} —— I_C

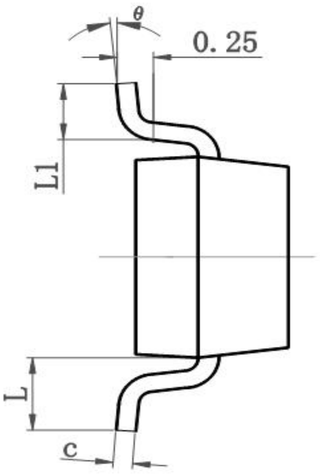

V_{CEsat} —— I_C

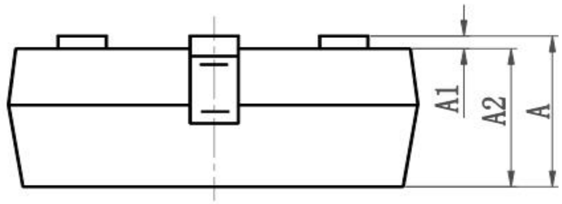

C_{ob} / C_{ib} —— V_{CB} / V_{EB}


P_c —— T_a

■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°