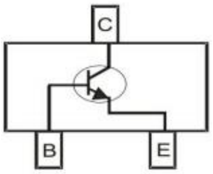
SOT-323 Bipolar Transistor 双极型三极管

■Features 特点

NPN Switching 开关



■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}	60	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℃)	200	mW
Thermal Resistance Junction-Ambient 热阻	$R_{\Theta JA}$	625	℃/W
Junction and Storage Temperature 结温和储藏温度	T_J,T_{stg}	-55to+150℃	

■Device Marking 产品打标

MMBT4401W=2X

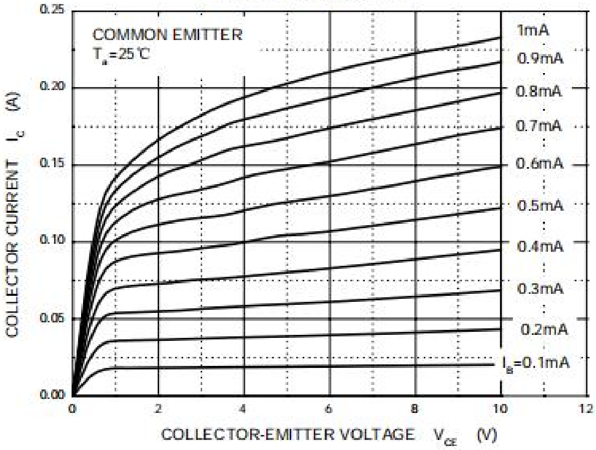
■Electrical Characteristics 电特性

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

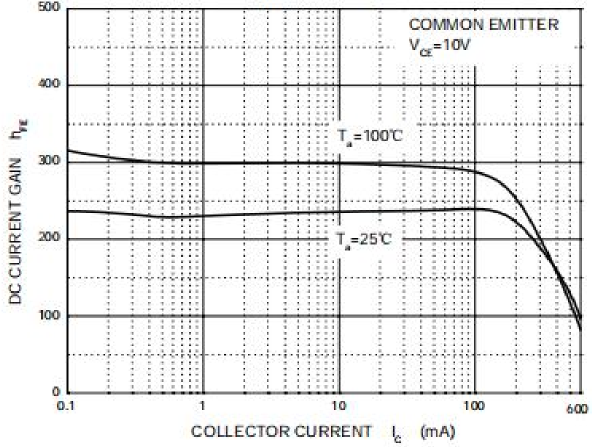
Characteristic 特性参数	Symbol 符号	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Collector-Base Breakdown Voltage 集电极基极击穿电压(I_C= 0.1mA，I_E=0)	BV_{CBO}	60	—	—	V
Collector-Emitter Breakdown Voltage 集电极发射极击穿电压(I_C= 1mA，I_B=0)	BV_{CEO}	40	—	—	V
Emitter-Base Breakdown Voltage 发射极基极击穿电压(I_E= 0.1mA，I_C=0)	BV_{EBO}	6	—	—	V
Collector-Base Leakage Current 集电极基极漏电流(V_{CB}= 35V，I_E=0)	I_{CBO}	—	—	100	nA
Collector-Emitter Leakage Current 集电极发射极漏电流(V_{CE}= 30V,V_{BE}= -0.5V)	I_{CEX}	—	—	100	nA
Emitter-Base Leakage Current 发射极基极漏电流(V_{EB}= 4V，I_C=0)	I_{EBO}	—	—	100	nA
DC Current Gain(V_{CE}= 1V，I_C= 0.1mA) 直流电流增益(V_{CE}= 1V，I_C= 150mA) (V_{CE}= 2V，I_C= 500mA)	H_{FE}	20 100 40	—	300	
Collector-Emitter Saturation Voltage 集电极发射极饱和压降(I_C= 500mA,I_B= 50mA) (I_C= 150mA,I_B= 15mA)	$V_{CE(sat)}$	—	—	0.75 0.4	V
Base-Emitter Saturation Voltage 基极发射极饱和压降(I_C= 500mA,I_B= 50mA) (I_C= 150mA,I_B= 15mA)	$V_{BE(sat)}$	—	—	1.2 0.95	V
Transition Frequency 特征频率(V_{CE}= 10V，I_C= 20mA)	f_T	250	—	—	MHz
Delay Time 延迟时间 (V_{CC}=30V,V_{BE}=-0.5V,I_C=150mA,I_{B1}=15mA)	t_d	—	—	10	ns
Rise Time 上升时间 (V_{CC}=30V,V_{BE}=-0.5V,I_C=150mA,I_{B1}=15mA)	t_r	—	—	25	ns
Storage Time 贮存时间 (V_{CC}=30V,I_C=150mA,I_{B1}=I_{B2}=15mA)	t_s	—	—	225	ns
Fall Time 下降时间 (V_{CC}=30V,I_C=150mA,I_{B1}=I_{B2}=15mA)	t_f	—	—	60	ns

■Typical Characteristic Curve 典型特性曲线

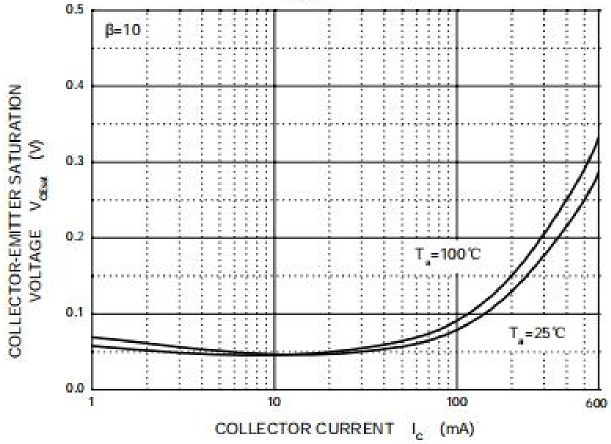
Static Characteristic



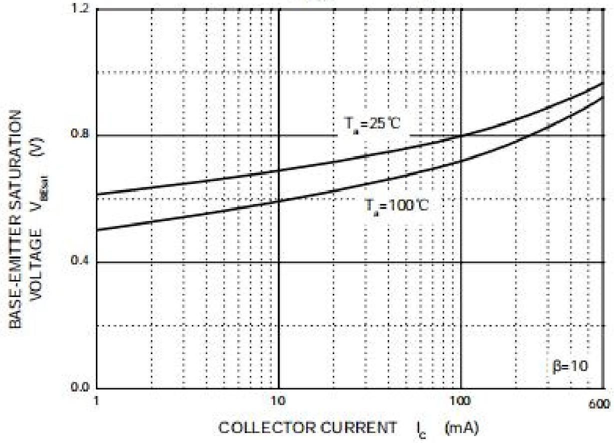
h_{FE} —— I_C



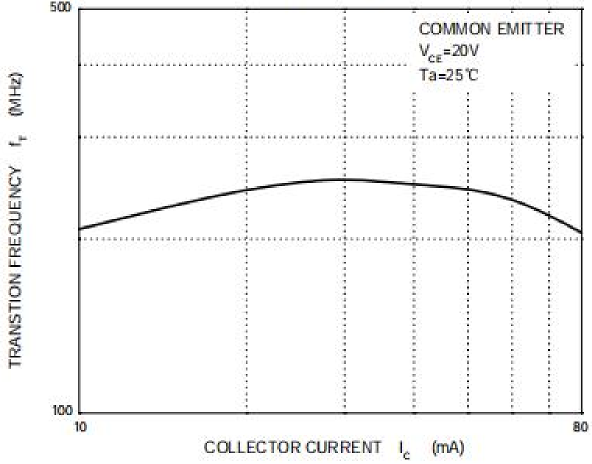
V_{CEsat} —— I_C



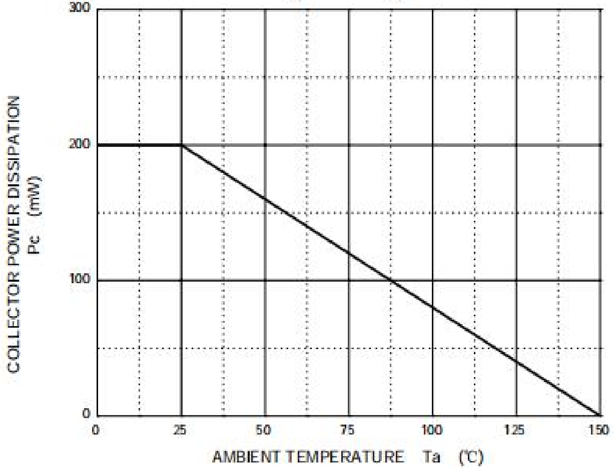
V_{BEsat} —— I_C



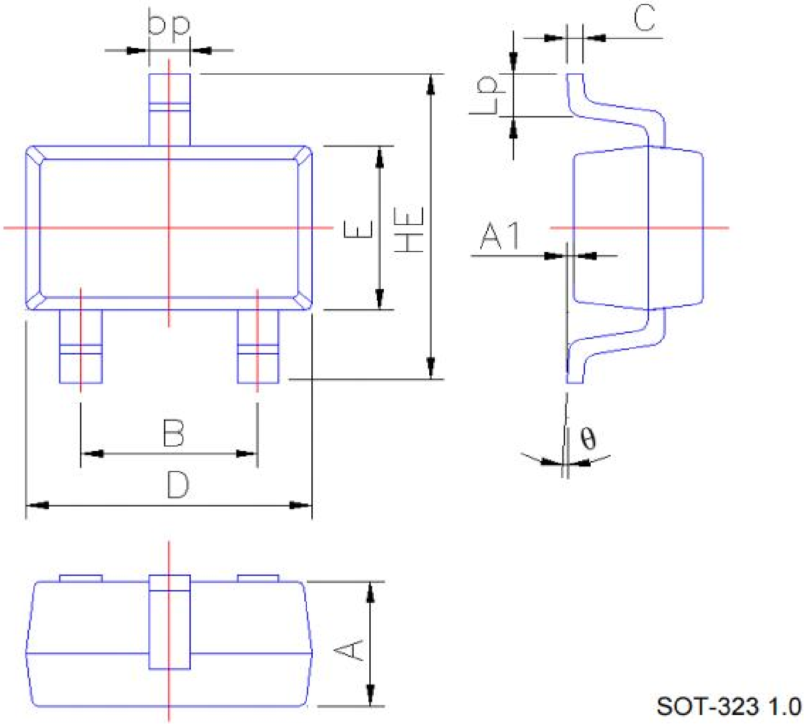
f_T —— I_C



P_c —— T_a



■Dimension 外形封装尺寸



Symbol	Dimension in Millimeters	
	Min	Max
A	0.90	1.00
A1	0.010	0.100
B	1.20	1.40
bp	0.25	0.45
C	0.09	0.15
D	2.00	2.20
E	1.15	1.35
HE	2.15	2.55
Lp	0.25	0.46
θ	0º	6º