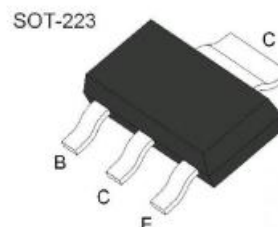




SOT-223 Bipolar Transistor 双极型三极管

■ Features 特点

NPN General Purpose 通用



■ Absolute Maximum Ratings 最大额定值

Characteristic 特性参数	Symbol 符号	BCP54 -xx-2AF	BCP55 -xx-2AF	BCP56 -xx-2AF	Unit 单位
Collector-Base Voltage 集电极基极电压	V_{CBO}	45	60	100	V
Collector-Emitter Voltage 集电极发射极电压	V_{CEO}	45	60	80	V
Emitter-Base Voltage 发射极基极电压	V_{EBO}	5			V
Collector Current 集电极电流	I_C	1000			mA
Power dissipation 耗散功率	$P_C(T_a=25^{\circ}C)$	1000			mW
Thermal Resistance Junction-Ambient 热阻	$R_{\theta JA}$	125			$^{\circ}C/W$
Junction and Storage Temperature 结温和储藏温度	T_J, T_{stg}	-55to+150 $^{\circ}C$			

■ hFE Classification 放大倍数分档

$H_{FE}(2)$		Type		
Classification	63-160	BCP54-10-2AF	BCP55-10-2AF	BCP56-10-2AF
	100-250	BCP54-16-2AF	BCP55-16-2AF	BCP56-16-2AF
	160-400	BCP54-25-2AF	BCP55-25-2AF	BCP56-25-2AF
	250-630	BCP54-40-2AF	BCP55-40-2AF	BCP56-40-2AF



■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 ($I_C=100\mu\text{A}$, $I_E=0$)	BCP54 BCP55 BCP56	BV_{CBO}	45 60 100	—	—	V
Collector-Emitter Breakdown Voltage 集电极发射极击穿电压 ($I_C=1\text{mA}$, $I_B=0$)	BCP54 BCP55 BCP56	BV_{CEO}	45 60 80	—	—	V
Emitter-Base Breakdown Voltage 发射极基极击穿电压($I_E=100\mu\text{A}$, $I_C=0$)		BV_{EBO}	5	—	—	V
Collector-Base Leakage Current 集电极基极漏电流	BCP54 ($V_{CB}=30\text{V}$, $I_E=0$) BCP55 ($V_{CB}=50\text{V}$, $I_E=0$) BCP56 ($V_{CB}=80\text{V}$, $I_E=0$)	I_{CBO}	—	—	100	nA
Emitter-Base Leakage Current 发射极基极漏电流($V_{EB}=5\text{V}$, $I_C=0$)		I_{EBO}	—	—	10	μA
DC Current Gain 直流电流增益($V_{CE}=2\text{V}$, $I_C=5\text{mA}$)		$H_{FE}(1)$	25	—	—	
DC Current Gain 直流电流增益 ($V_{CE}=2\text{V}$, $I_C=0.15\text{A}$)	BCP54/BCP55/BCP56-10 BCP54/BCP55/BCP56-16 BCP54/BCP55/BCP56-25 BCP54/BCP55/BCP56-40	$H_{FE}(2)$	63 100 160 250	—	160 250 400 630	
DC Current Gain 直流电流增益($V_{CE}=2\text{V}$, $I_C=0.5\text{A}$)		$H_{FE}(3)$	25	—	—	
Collector-Emitter Saturation Voltage 集电极发射极饱和压降($I_C=0.5\text{A}$, $I_B=50\text{mA}$)		$V_{CE(sat)}$	—	—	0.5	V
Base-Emitter Saturation Voltage 基极发射极饱和压降($I_C=500\text{mA}$, $I_B=50\text{mA}$)		$V_{BE(sat)}$	—	—	1	V
Base-Emitter On Voltage 基极发射极导通电压($V_{CE}=2\text{V}$, $I_C=0.5\text{A}$)		$V_{BE(on)}$	—	—	1	V
Transition Frequency 特征频率($V_{CE}=5\text{V}$, $I_C=10\text{mA}$)		f_T	—	130	—	MHz
Output Capacitance 输出电容($V_{CB}=10\text{V}$, $I_E=0$, $f=1\text{MHz}$)		C_{ob}	—	15	—	pF

■ Typical Characteristic Curve 典型特性曲线

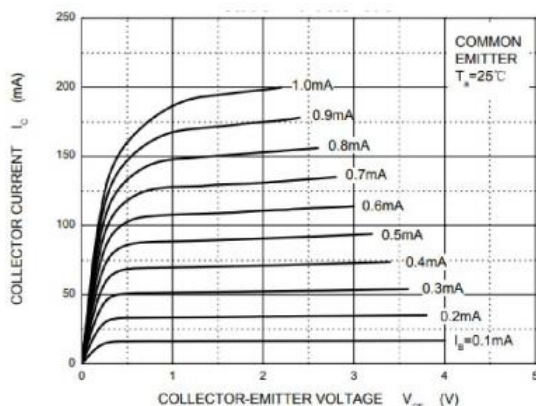


Figure 1. Static Characteristic

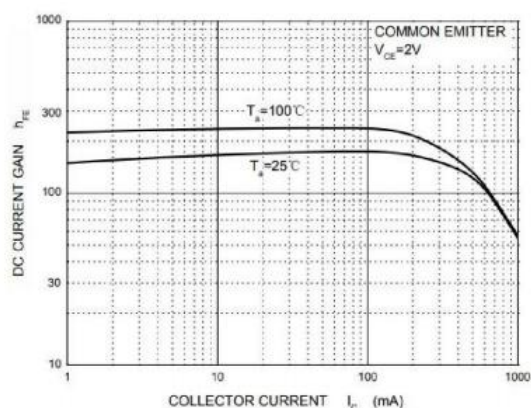


Figure 2. DC current Gain

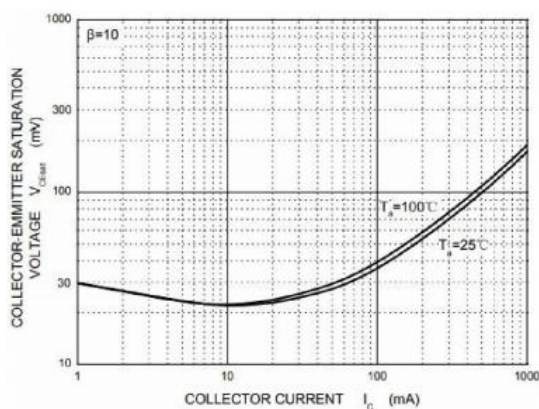


Figure 3. Collector-Emitter Saturation Voltage

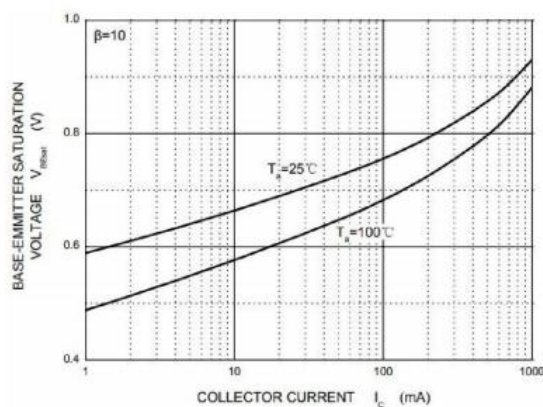


Figure 4. Base-Emitter Saturation Voltage

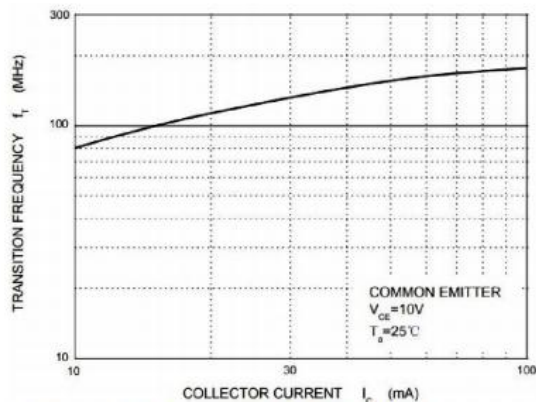


Figure 5. Current Gain Bandwidth Product

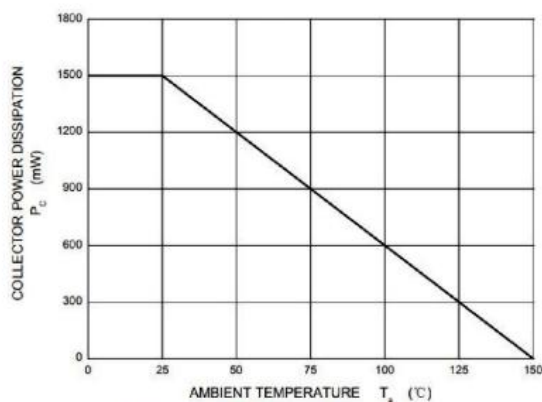
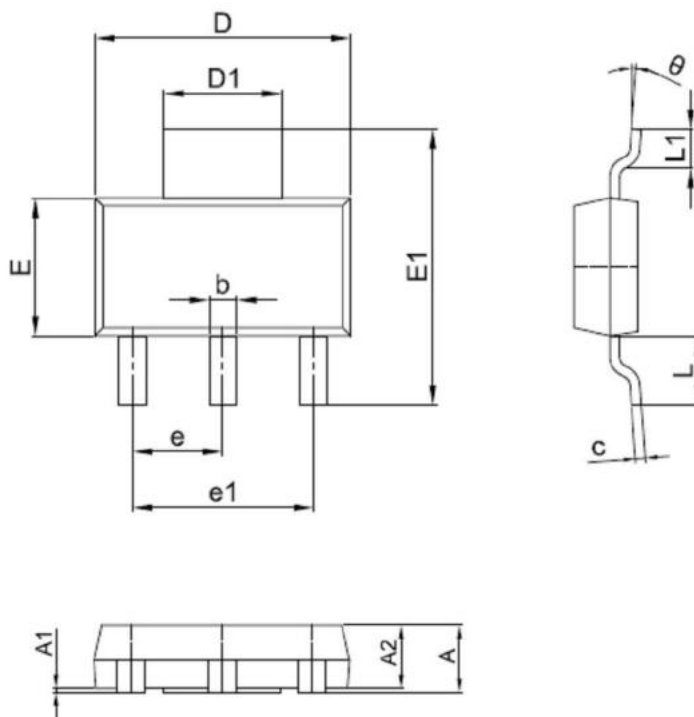


Figure 6. Power Derating

■Dimension 外形封装尺寸



Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	1.50	1.80	0.059	0.071
A1	0.00	0.10	0.000	0.004
A2	1.50	1.70	0.059	0.067
b	0.65	0.75	0.026	0.030
c	0.20	0.30	0.008	0.012
D	6.40	6.60	0.252	0.260
D1	2.90	3.10	0.114	0.122
E	3.30	3.70	0.130	0.146
E1	6.85	7.15	0.270	0.281
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	1.65	1.85	0.065	0.073
L1	0.90	1.15	0.035	0.045