T9013

TO-92 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	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}	25	V
Emitter-Base Voltage 发射极基极电压	V_{EBO}	5	V
Collector Current 集电极电流	I_C	500	mA
Power dissipation 耗散功率	$P_C(T_a=25℃)$	625	mW
Thermal Resistance Junction-Ambient 热阻	$R_{\Theta JA}$	200	℃/W
Junction and Storage Temperature 结温和储藏温度	T_J,T_{stg}	-55to+150℃	

■Classification of H_{FE} 放大倍数分档

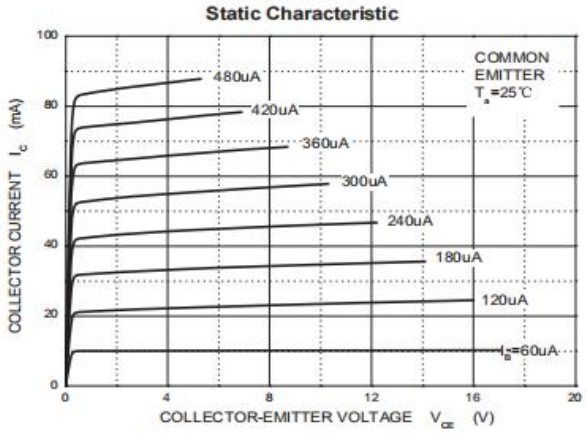
Rank 档位	D	E	F	G	H	I	J
H_{FE} Range	64-91	78-112	96-135	112-166	144-202	190-300	280-400

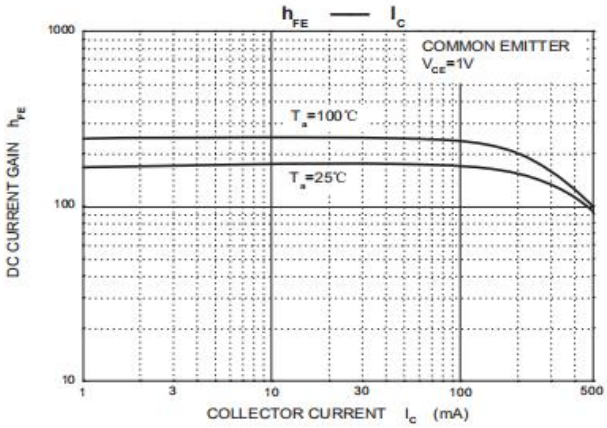
■Electrical Characteristics 电特性

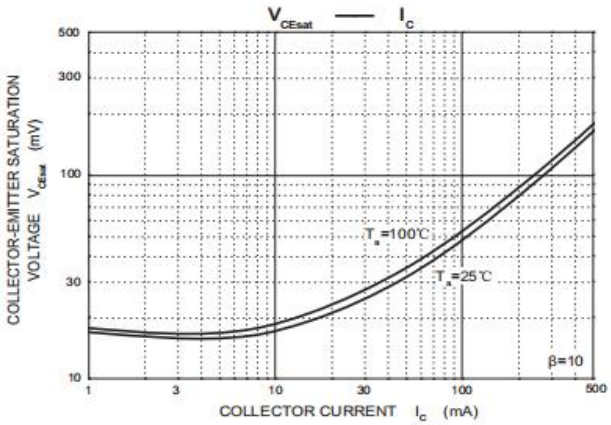
(T_A=25℃ unless otherwise noted 如无特殊说明，温度为 25℃)

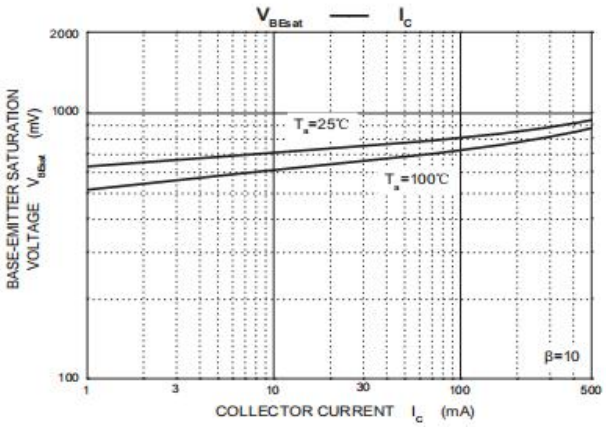
Characteristic 特性参数	Symbol 符号	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Collector-Base Breakdown Voltage 集电极基极击穿电压(I_C= 100uA，I_E=0)	BV_{CBO}	40	—	—	V
Collector-Emitter Breakdown Voltage 集电极发射极击穿电压(I_C= 1mA，I_B=0)	BV_{CEO}	25	—	—	V
Emitter-Base Breakdown Voltage 发射极基极击穿电压(I_E= 100uA，I_C=0)	BV_{EBO}	5	—	—	V
Collector-Base Leakage Current 集电极基极漏电流(V_{CB}= 40V，I_E=0)	I_{CBO}	—	—	100	nA
Collector-Emitter Punch Throng Current 集电极发射极穿透电流(V_{CE}= 20V，V_{BE}=0)	I_{CES}	—	—	100	nA
Emitter-Base Leakage Current 发射极基极漏电流(V_{EB}= 5V，I_C=0)	I_{EBO}	—	—	100	nA
DC Current Gain 直流电流增益(V_{CE}= 1V，I_C= 50mA)	H_{FE}	64	—	400	
Collector-Emitter Saturation Voltage 集电极发射极饱和压降 (I_C= 500mA，I_B= 50mA)	$V_{CE(sat)}$	—	—	0.6	V
Base-Emitter Saturation Voltage 基极发射极饱和压降 (I_C= 500mA，I_B= 50mA)	$V_{BE(sat)}$	—	—	1.2	V
Transition Frequency 特征频率(V_{CE}= 5V，I_C= 20mA)	f_T	—	200	—	MHz
Output Capacitance 输出电容(V_{CB}= 10V，I_E=0, f=1MHz)	Cob	—	7	—	pF

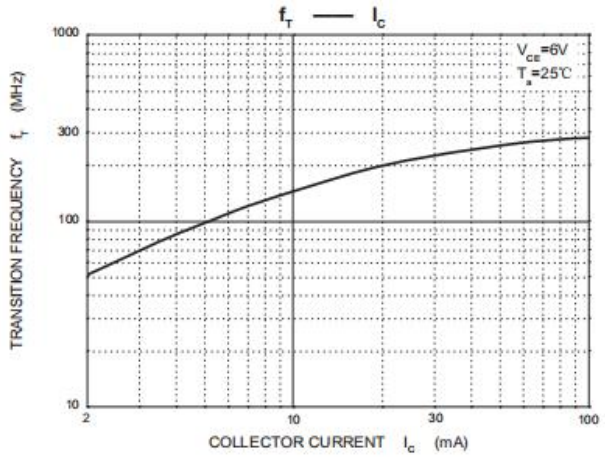
■Typical Characteristic Curve 典型特性曲线

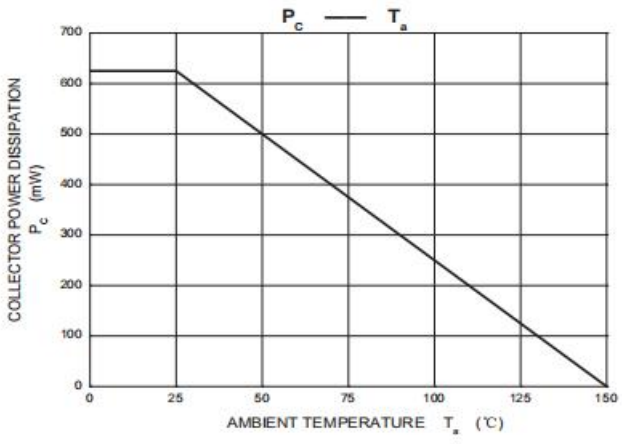




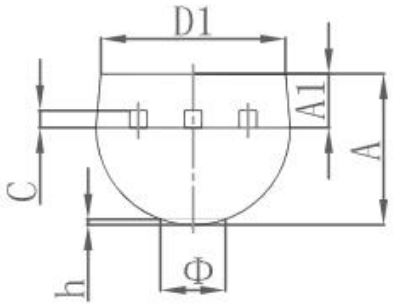


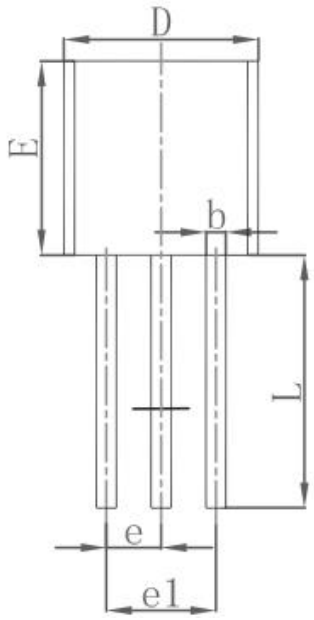






■**Dimension 外形封装尺寸**





Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015