

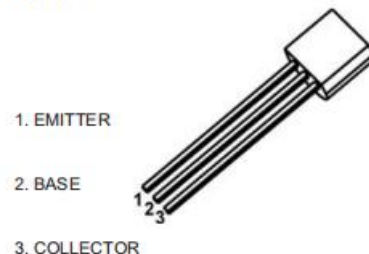
TO-92 Bipolar Transistor 双极型三极管

■ **Features 特点**

PNP Switching 开关

■ **Absolute Maximum Ratings 最大额定值**

TO-92



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}	-40	V
Emitter-Base Voltage 发射极基极电压	V_{EBO}	-5	V
Collector Current 集电极电流	I_C	-200	mA
Power dissipation 耗散功率	$P_C(T_a=25^\circ\text{C})$	625	mW
Thermal Resistance Junction-Ambient 热阻	$R_{\theta JA}$	200	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature 结温和储藏温度	T_J, T_{stg}	-55to+150 $^\circ\text{C}$	

■ **Device Rank 产品分档**

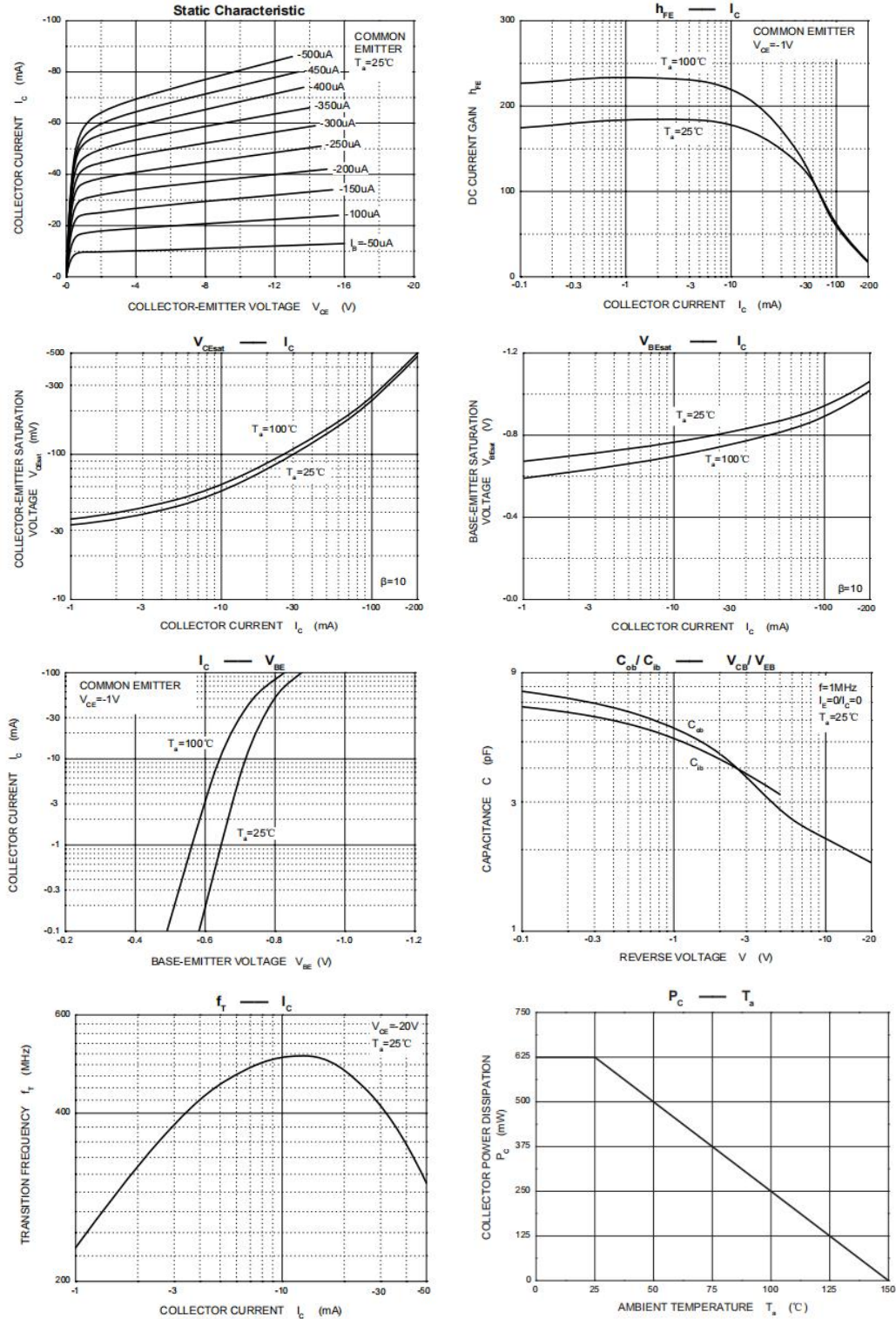
Rank 档位	O	Y	G
H_{FE} Range	100-200	200-300	300-400

■ Electrical Characteristics 电特性

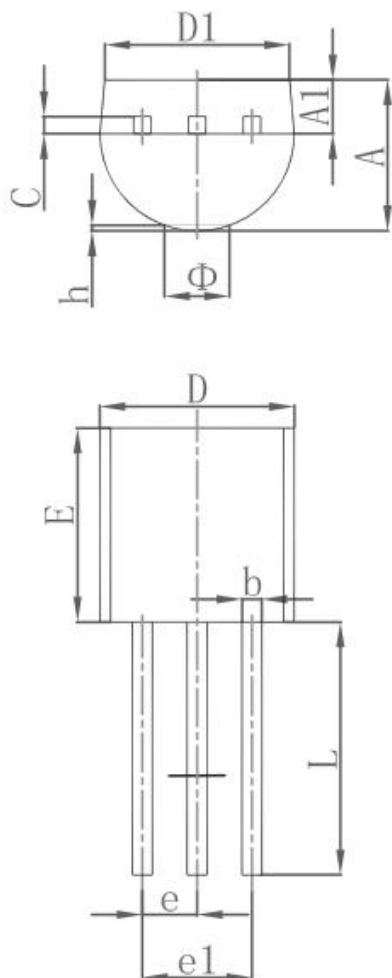
($T_A=25^{\circ}\text{C}$ unless otherwise noted 如无特殊说明, 温度为 25°C)

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($I_C = -10\mu\text{A}$, $I_E = 0$)	BV_{CBO}	-40	—	—	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}	-40	—	—	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($V_{CB} = -40\text{V}$, $I_E = 0$)	I_{CBO}	—	—	-100	nA
Collector-Emitter Leakage Current 集电极发射极漏电流($V_{CE} = -30\text{V}$, $V_{BE} = 3\text{V}$)	I_{CEX}	—	—	-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($V_{CE} = -1\text{V}$, $I_C = -10\text{mA}$) 直流电流增益($V_{CE} = -1\text{V}$, $I_C = -50\text{mA}$) ($V_{CE} = -1\text{V}$, $I_C = -100\text{mA}$)	H_{FE}	100 60 30	—	400	
Collector-Emitter Saturation Voltage 集电极发射极饱和压降($I_C = -50\text{mA}$, $I_B = -5\text{mA}$)	$V_{CE(sat)}$	—	—	-0.3	V
Base-Emitter Saturation Voltage 基极发射极饱和压降($I_C = -50\text{mA}$, $I_B = -5\text{mA}$)	$V_{BE(sat)}$	—	—	-0.95	V
Transition Frequency 特征频率($V_{CE} = -20\text{V}$, $I_C = -10\text{mA}$)	f_T	300	—	—	MHz
Delay Time 延迟时间 ($V_{CC} = -3\text{V}$, $V_{BE} = 0.5\text{V}$, $I_C = -10\text{mA}$, $I_{B1} = -1\text{mA}$)	t_d	—	—	35	ns
Rise Time 上升时间 ($V_{CC} = -3\text{V}$, $V_{BE} = 0.5\text{V}$, $I_C = -10\text{mA}$, $I_{B1} = -1\text{mA}$)	t_r	—	—	35	ns
Storage Time 贮存时间 ($V_{CC} = -3\text{V}$, $I_C = -10\text{mA}$, $I_{B1} = I_{B2} = -1\text{mA}$)	t_s	—	—	225	ns
Fall Time 下降时间 ($V_{CC} = -3\text{V}$, $I_C = -10\text{mA}$, $I_{B1} = I_{B2} = -1\text{mA}$)	t_f	—	—	75	ns

■ 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