



# 安徽富信半导体科技有限公司

ANHUI FOSAN SEMICONDUCTOR TECHNOLOGY CO., LTD.

MMBTA13/MMBTA14

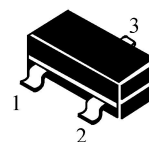
## SOT-23 Bipolar Transistor 双极型三极管

SOT-23

### ■ Features 特点

NPN Darlington Amplifier 达林顿放大

- 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	
		MMBTA13/MMBTA14	Unit 单位
Collector-Base Voltage 集电极基极电压	$V_{CBO}$	30	V
Collector-Emitter Voltage 集电极发射极电压	$V_{CEO}$	30	V
Emitter-Base Voltage 发射极基极电压	$V_{EBO}$	10	V
Collector Current 集电极电流	$I_C$	300	mA
Power dissipation 耗散功率	$P_C(T_a=25^\circ\text{C})$	300	mW
Thermal Resistance Junction-Ambient 热阻	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature 结温和储藏温度	$T_J, T_{stg}$	-55to+150 $^\circ\text{C}$	

### ■ Device Marking 产品打标

Type	MMBTA13	MMBTA14
Mark	K2D	K3D

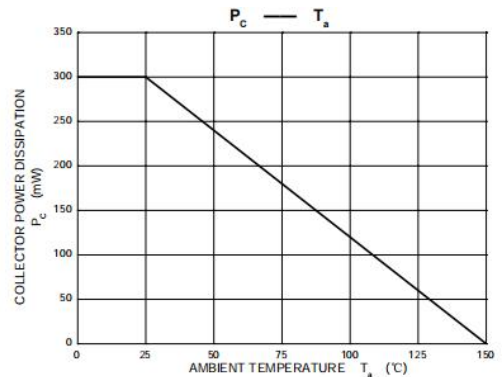
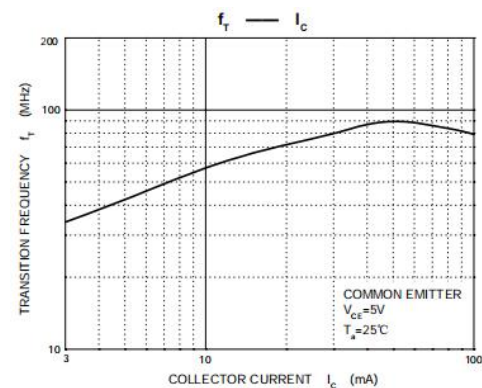
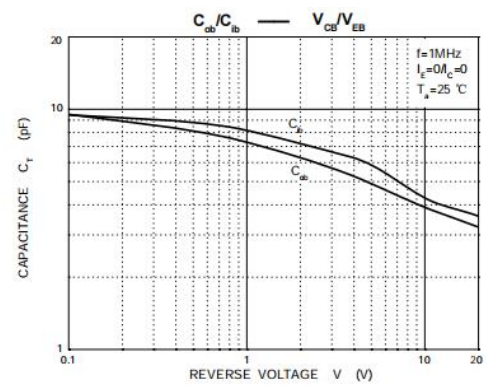
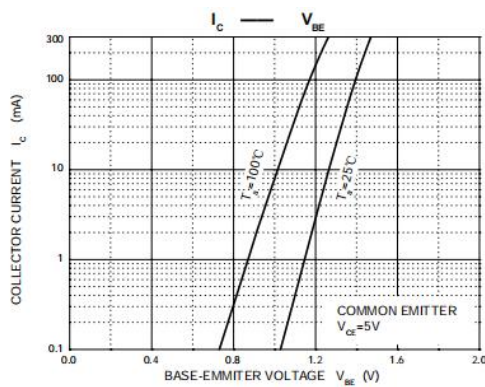
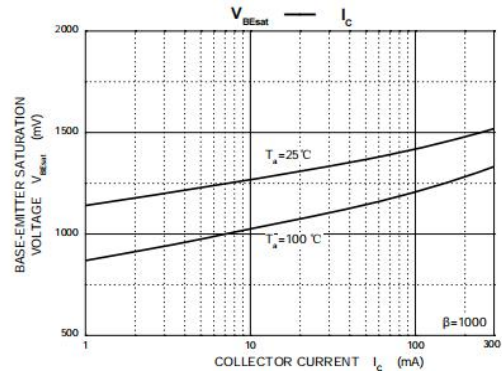
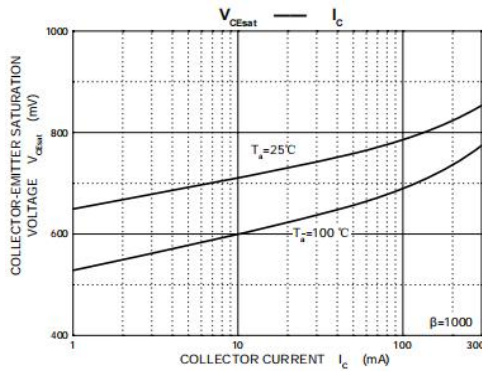
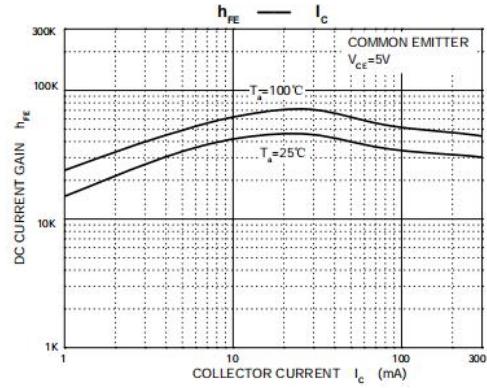
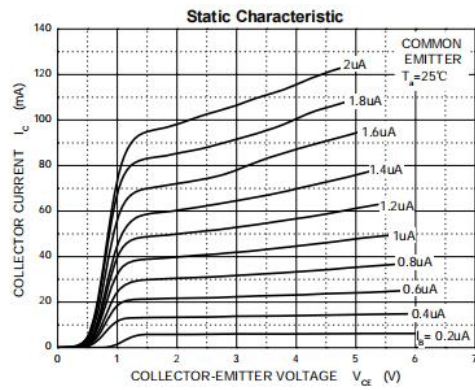


## ■ Electrical Characteristics 电特性

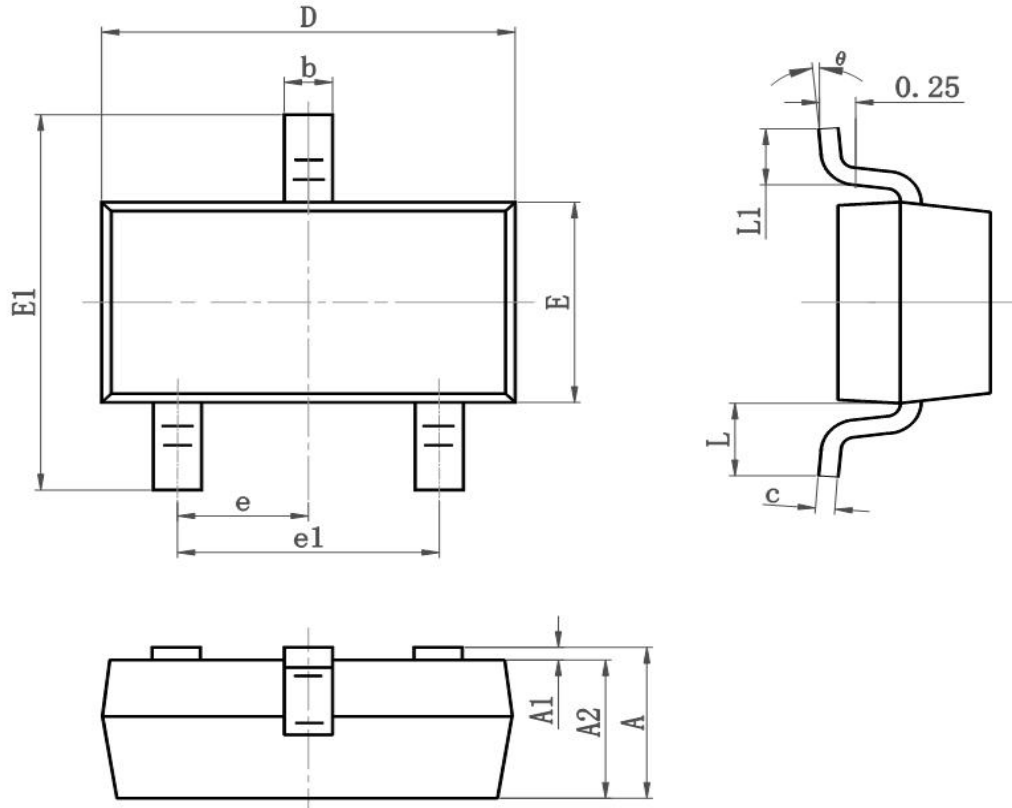
(TA=25°C unless otherwise noted 如无特殊说明, 温度为 25°C)

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 <sub>C</sub> = 100μA, I <sub>E</sub> =0)	BV <sub>CBO</sub>	30	—	—	V
Collector-Emitter Breakdown Voltage 集电极发射极击穿电压(I <sub>C</sub> = 100μA, I <sub>B</sub> =0)	BV <sub>CEO</sub>	30	—	—	V
Emitter-Base Breakdown Voltage 发射极基极击穿电压(I <sub>E</sub> = 100μA, I <sub>C</sub> =0)	BV <sub>EBO</sub>	10	—	—	V
Collector-Base Leakage Current 集电极基极漏电流(V <sub>CB</sub> =30V, I <sub>E</sub> =0)	I <sub>CBO</sub>	—	—	100	nA
Collector-Emitter Leakage Current 集电极发射极漏电流(V <sub>CE</sub> =30V, I <sub>B</sub> =0)	I <sub>CEO</sub>	—	—	100	nA
Emitter-Base Leakage Current 发射极基极漏电流(V <sub>EB</sub> =10V, I <sub>C</sub> =0)	I <sub>EBO</sub>	—	—	100	nA
DC Current Gain(V <sub>CE</sub> =5V, I <sub>C</sub> = 10mA)MMBTA13 (V <sub>CE</sub> =5V, I <sub>C</sub> = 10mA)MMBTA14 直流电流增益(V <sub>CE</sub> = 5V, I <sub>C</sub> = 100mA)MMBTA13 (V <sub>CE</sub> = 5V, I <sub>C</sub> = 100mA)MMBTA14	H <sub>FE</sub>	5000 10000 10000 20000	—	—	
Collector-Emitter Saturation Voltage 集电极发射极饱和压降(I <sub>C</sub> = 100mA, I <sub>B</sub> = 100μA)	V <sub>CE(sat)</sub>	—	—	1.5	V
Base-Emitter Saturation Voltage 基极发射极饱和压降(I <sub>C</sub> = 100mA, I <sub>B</sub> = 100μA)	V <sub>BE(sat)</sub>	—	—	2	V
Base-Emitter On Voltage 基极发射极导通电压(V <sub>CE</sub> = 5V, I <sub>C</sub> = 100mA)	V <sub>BE(on)</sub>	—	—	2	V
Transition Frequency 特征频率(V <sub>CE</sub> = 5V, I <sub>C</sub> = 10mA)	f <sub>T</sub>	125	—	—	MHz
Output Capacitance 输出电容(V <sub>CB</sub> = 10V, I <sub>E</sub> =0, f=1MHz)	C <sub>ob</sub>	—	—	12	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	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	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
$\theta$	0°	8°	0°	8°