



浩畅半导体
www.szhaochang.cn

MMBTA13, 14 TRANSISTOR (NPN)

SOT-23 Plastic-Encapsulate Transistors

产
品
规
格
书

承
认
书

客户确认：

公司签章：

部门

工程部

品保部

采购部

签名

日期



SOT-23 Plastic-Encapsulate Transistors

MMBTA13,14 TRANSISTOR (NPN)

FEATURES

Darlington Amplifier

Marking : MMBTA13:K2D; MMBTA14:K3D

MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V _{CB0}	Collector-Base Voltage	30	V
V _{CEO}	Collector-Emitter Voltage	30	V
V _{EBO}	Emitter-Base Voltage	10	V
I _c	Collector Current -Continuous	0.3	A
P _c	Collector Power Dissipation	300	mW
R _{θJA}	Thermal Resistance Junction to Ambient	417	°C/W
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55 to +150	°C

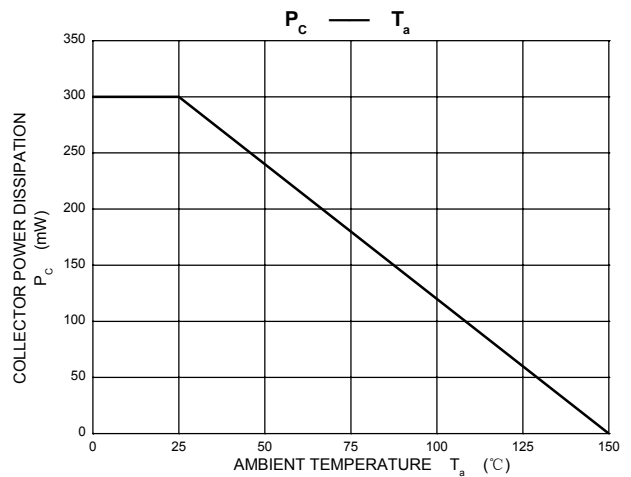
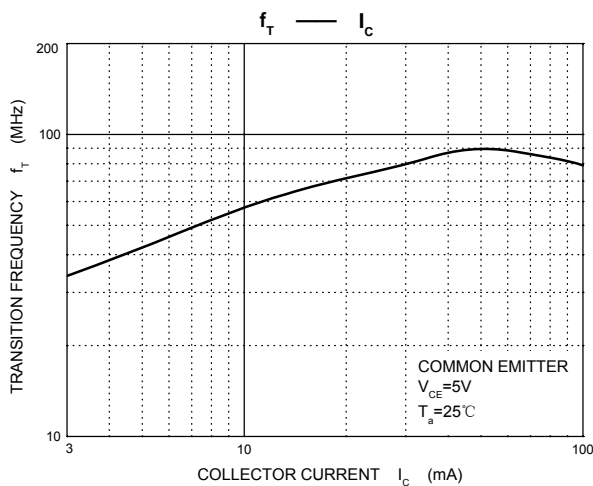
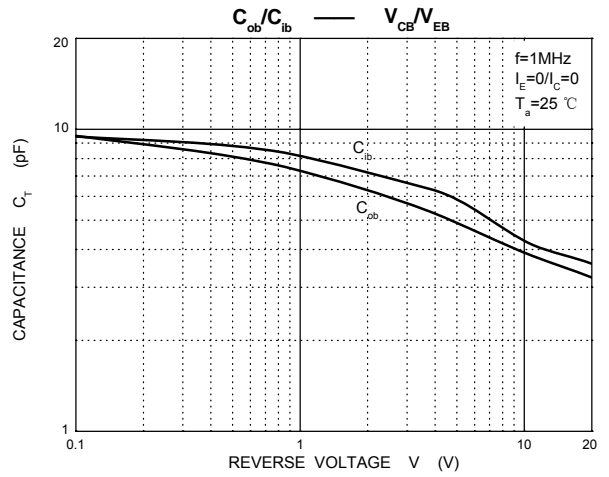
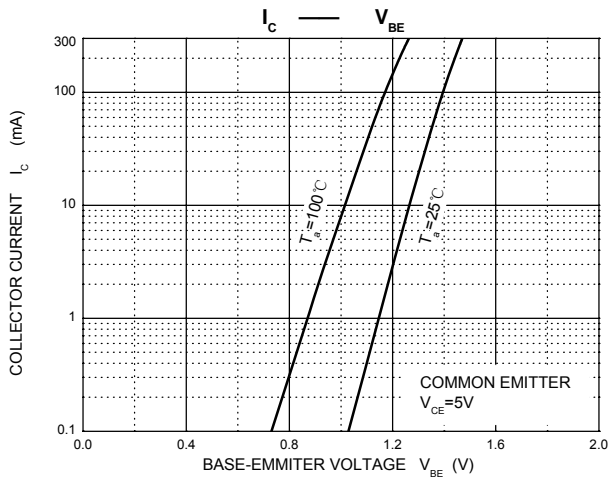
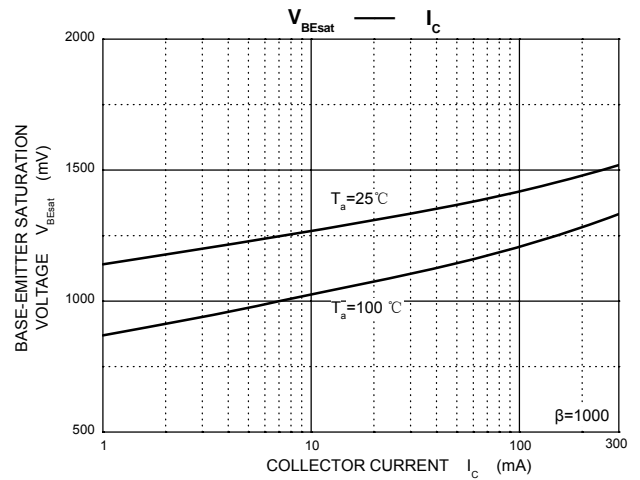
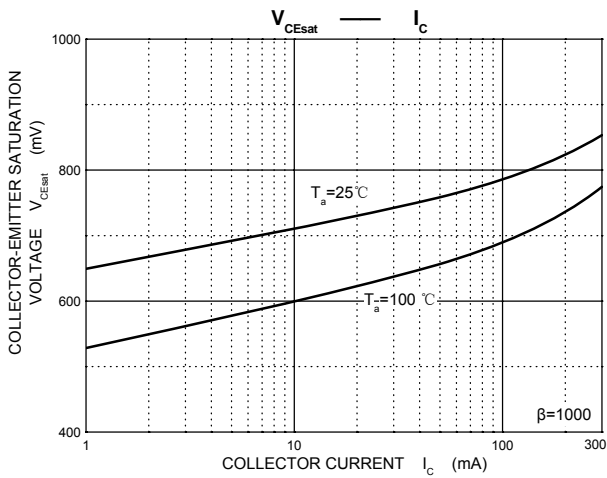
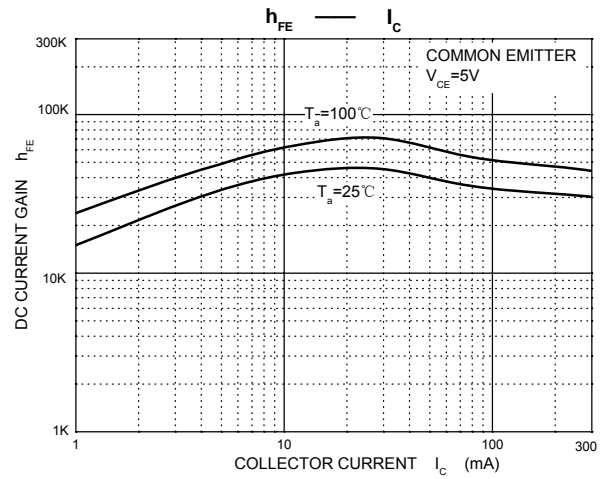
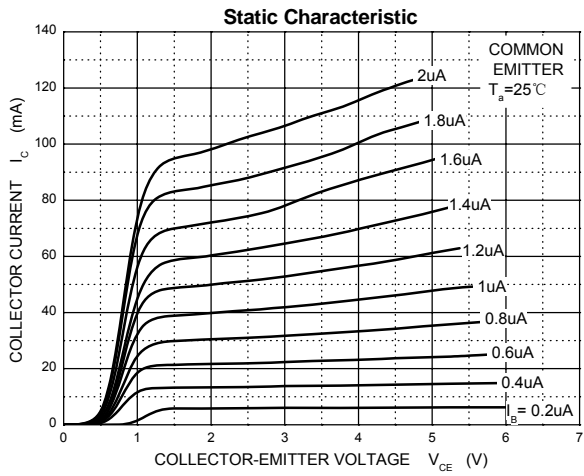


ELECTRICAL CHARACTERISTICS (T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	MAX	UNIT
Collector-base breakdown voltage	V _{(BR)CBO}	I _C = 100μA, I _E =0	30		V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C = 100uA, I _B =0	30		V
Collector-emitter breakdown voltage	V _{(BR)EBO}	I _E = 100μA, I _C =0	10		V
Collector cut-off current	I _{CBO} *	V _{CB} =30 V, I _E =0		0.1	μA
Emitter cut-off current	I _{EBO} *	V _{EB} = 10V, I _C =0		0.1	μA
DC current gain	h _{FE(1)} *	V _{CE} =5V, I _C = 10mA	MMBTA13 5000		
	h _{FE(2)} *	V _{CE} =5V, I _C = 100mA	MMBTA13 10000 MMBTA14 20000		
Collector-emitter saturation voltage	V _{CE(sat)} *	I _C =100mA, I _B =0.1mA		1.5	V
Base-emitter saturation voltage	V _{BE(sat)} *	I _C =100mA, I _B =0.1mA		2	V
Base-emitter voltage	V _{BE} *	V _{CE} =5V, I _C = 100mA		2.0	V
Transition frequency	f _T	V _{CE} =5V, I _C = 10mA f=100MHz	125		MHz
Collector output capacitance	C _{ob}	V _{CB} =10V, I _E =0, f=1MHz		12	pF

* Pulse Test : pulse width≤300μs,duty cycles≤2%.

Typical Characteristics

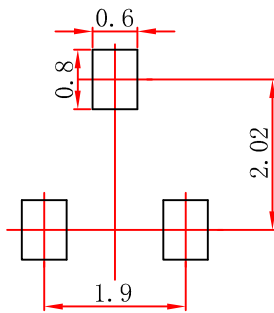


SOT-23 Package Outline Dimensions



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	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.