

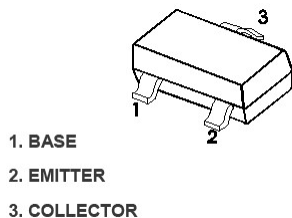
MMBT2222A TRANSISTOR(NPN)

Rev.3.0

SOT-23

SOT-23 贴片塑封三极管

SOT-23 Plastic-Encapsulate Transistors



Marking: 1P

特征 Features

- 与 MMBT2907A 配对; Complementary to MMBT2907A
- 最大功率耗散 300mW; Power Dissipation of 300mW
- 高稳定性和可靠性。High Stability and High Reliability

机械数据 Mechanical Data

- 封装: SOT-23 封装 SOT-23 Small Outline Plastic Package
- 环氧树脂 UL 易燃等级 Epoxy UL: 94V-0
- 安装位置: 任意 Mounting Position: Any

极限值和温度特性(TA = 25°C 除非另有规定)

Maximum Ratings & Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

参数 Parameters	符号 Symbol	数值 Value	单位 Unit
Collector-Base Voltage	V _{CBO}	75	V
Collector-Emitter Voltage	V _{CEO}	40	V
Emitter -Base Voltage	V _{EBO}	6	V
Collector Current-Continuous	I _C	600	mA
Collector Power Dissipation	P _C	300	mW
Junction Temperature	T _j	150	°C
Operating ambient temperature	T _{amb}	-55-+150	°C
Storage Temperature	T _{stg}	-55-+150	°C
Thermal resistance From junction to ambient	R _{θJA}	417	°C/W

电特性 (TA = 25°C 除非另有规定)

Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified.)

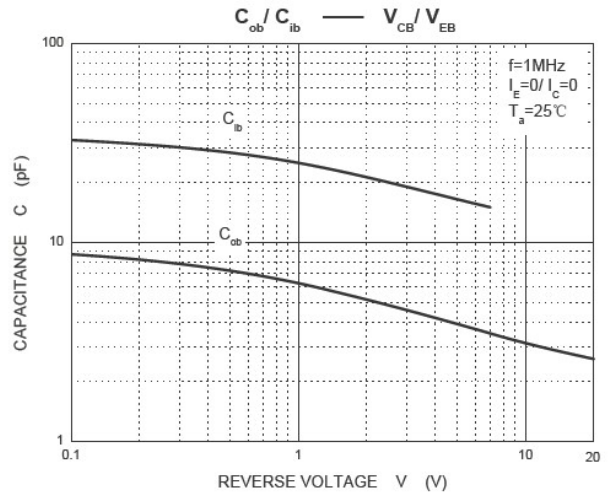
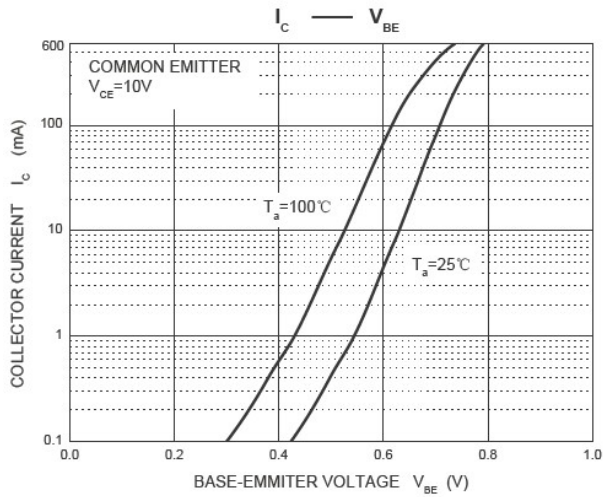
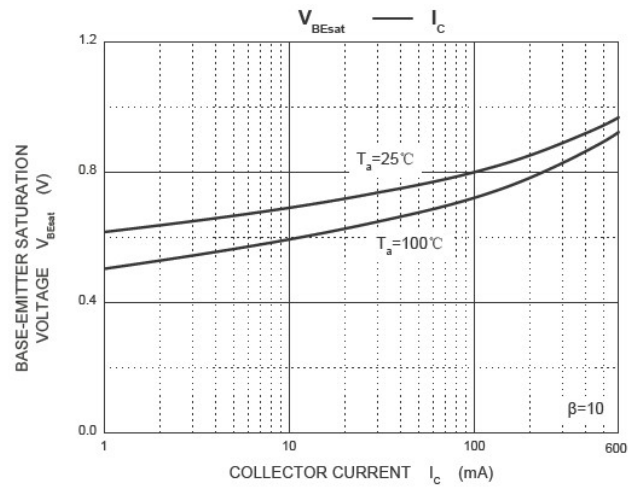
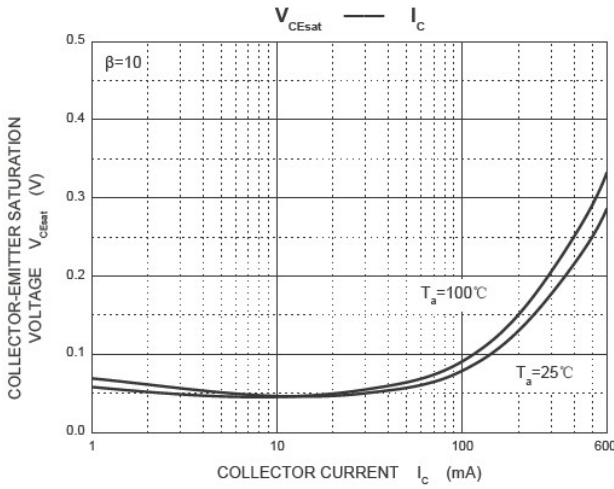
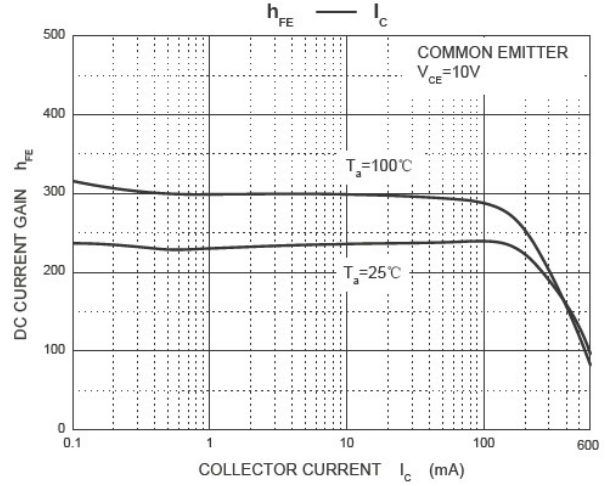
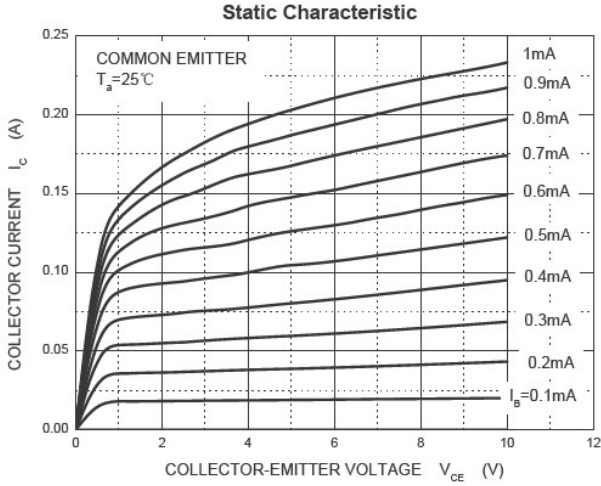
参数 Parameter	符号 Symbols	测试条件 Test Condition	界限 Limits		单位 Unit
			Min	Max	
Collector-base breakdown voltage	V(BR)CBO	I _C =10uA, I _E =0	75		V
Collector-emitter breakdown voltage	V(BR)CEO	I _C =10mA, I _B =0	40		V
Emitter-base breakdown voltage	V(BR)EBO	I _E =10uA, I _C =0	6		V
Collector cut-off current	I _{CEX}	V _{CE} =30V, V _{EB(off)} =3V		10	nA
Collector cut-off current	I _{CBO}	V _{CB} =60V, I _E =0		10	nA
Emitter cut-off current	I _{EBO}	V _{EB} =3V, I _C =0		100	nA
DC current gain	h _{FE(1)} *	V _{CE} =10V, I _C =150mA	100	300	
	h _{FE(2)} *	V _{CE} =10V, I _C =0.1mA	40		
	h _{FE(3)} *	V _{CE} =10V, I _C =500mA	42		
Collector-emitter saturation voltage	V _{CE(sat)1} *	I _C =500mA, I _B =50mA		1.00	V
Collector-emitter saturation voltage	V _{CE(sat)2} *	I _C =150mA, I _B =15mA		0.30	V
Base -emitter saturation voltage	V _{BE(sat)1} *	I _C =500mA, I _B =50mA		2.00	V
Base -emitter saturation voltage	V _{BE(sat)2} *	I _C =150mA, I _B =15mA		1.20	V
Transition frequency	f _T	V _{CE} =20V, I _C =20mA, f=100MHz	300		MHz
Delay time	t _d	V _{CC} =30V, V _{BE(off)} =-0.5V, I _C =150mA, I _{B1} =15mA		10	nS
Rise time	t _r			25	nS
Storage time	t _s			225	nS
Fall time	t _f			60	nS

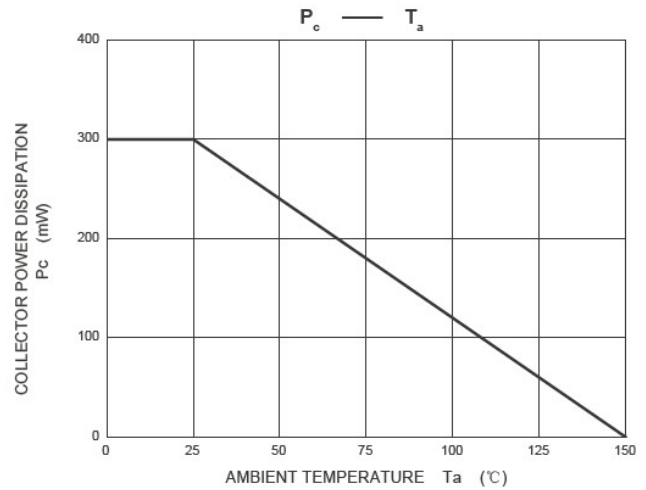
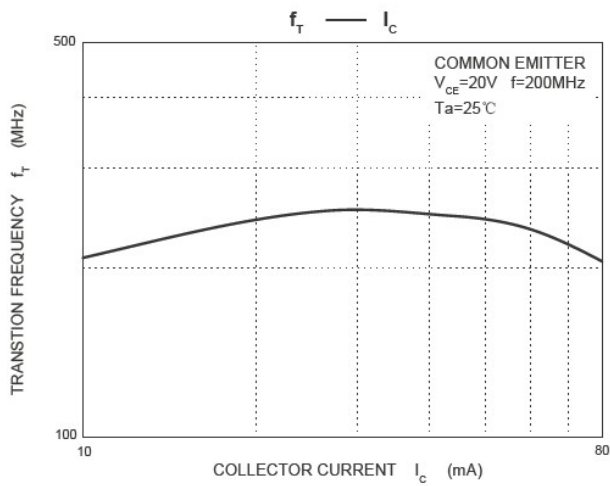
*Pulse test: pulse width ≤ 300us, duty cycle ≤ 2.0%.

CLASSIFICATION OF h_{FE(1)}

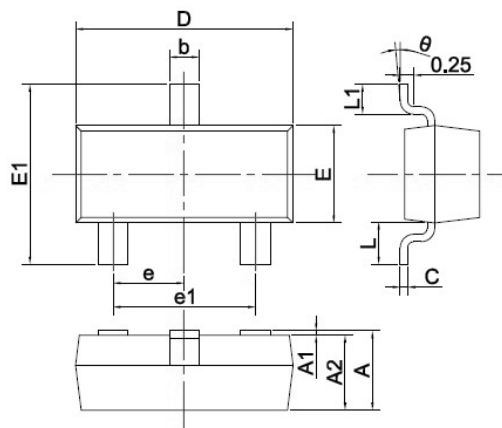
HFE	100-300	
RANK	L	H
RANGE	100-200	200-300

Typical characteristics





SOT-23 PACKAGE OUTLINE Plastic surface mounted package

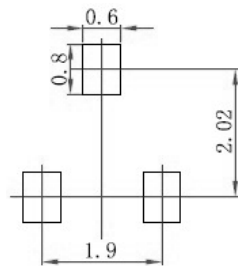


SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0 $^{\circ}$	8 $^{\circ}$

Unit: mm

焊盘设计参考 Precautions: PCB Design

Recommended land dimensions for SOT-23 diode. Electrode patterns for PCBs



- Note:
1. Controlling dimension: In millimeters.
 2. General tolerance: $\pm 0.05mm$.
 3. The pad layout is for reference purposes only.

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