

MMBT589

Rev.F Apr.-2017

描述 / Descriptions

SOT-23 塑封封装 PNP 半导体三极管。Silicon PNP transistor in a SOT-23 Plastic Package.

特征 / Features

电流大，表面贴装封装。

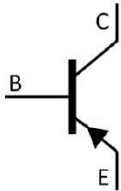
Large current, surface mount device.

用途 / Applications

用于大电流开关电路。

Switching for high current applications.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN1 : Base

PIN 2 : Emitter

PIN 3 : Collector

放大及印章代码 / h_{FE} Classifications & Marking

h_{FE} Range	100~300
Marking	HG3

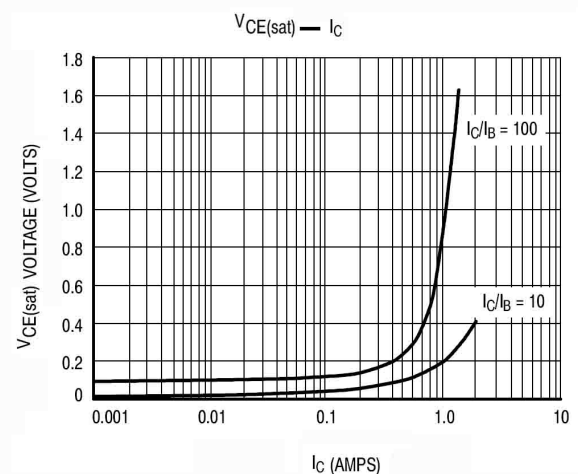
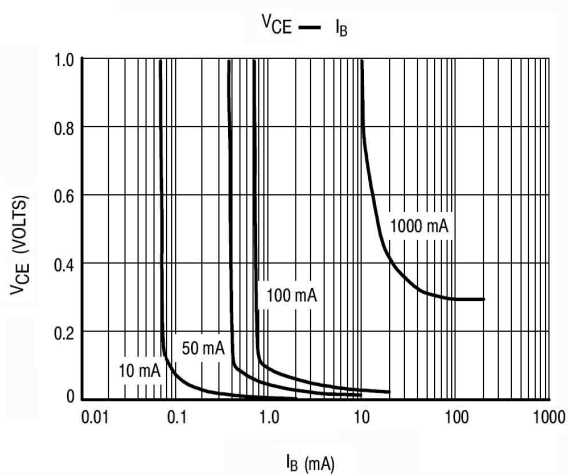
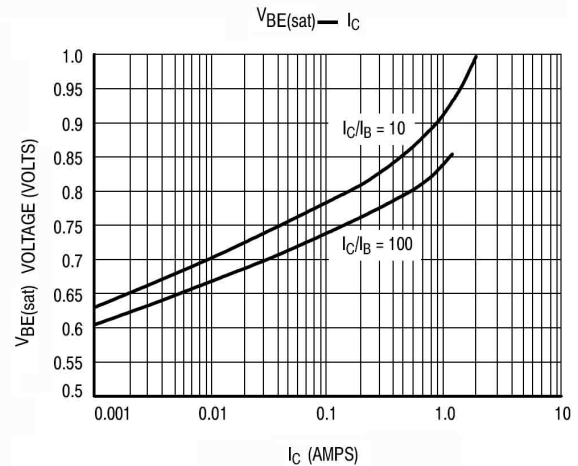
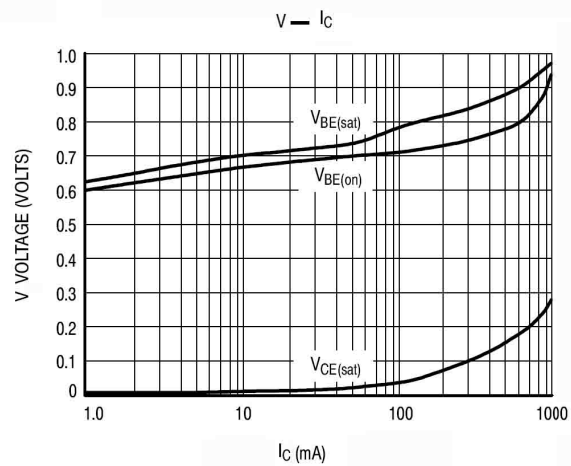
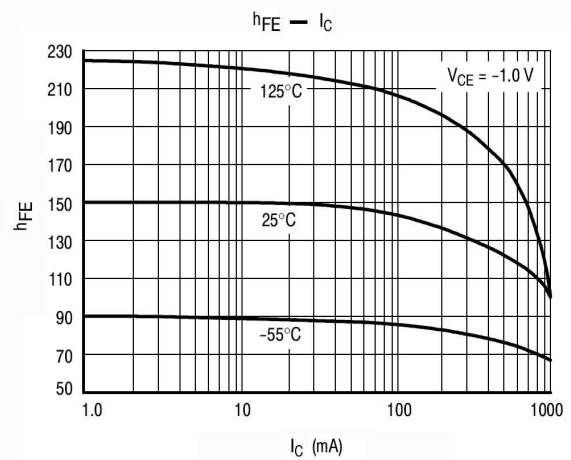
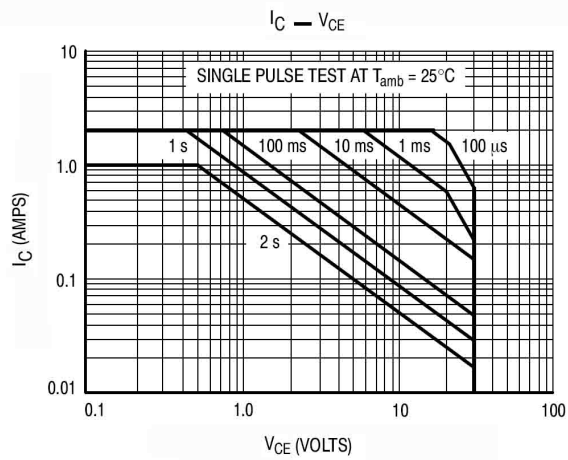
极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V_{CBO}	-50	V
Collector to Emitter Voltage	V_{CEO}	-30	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current	I_C	-1.0	A
Collector Current – Peak	I_{CM}	-2.0	A
Collector Power Dissipation	P_D	310	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C

电性能参数 / Electrical Characteristics(Ta=25°C)

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C = -0.1mA$ $I_E = 0$	-50			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C = -10mA$ $I_B = 0$	-30			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E = -0.1mA$ $I_C = 0$	-5.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB} = -30V$ $I_E = 0$			-0.1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = -4.0V$ $I_E = 0$			-0.1	μA
Collector-Emitter Cutoff Current	I_{CES}	$V_{CES} = -30V$ $I_E = 0$			-0.1	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE} = -2.0V$ $I_C = -500mA$	100		300	
	$h_{FE(2)}$	$V_{CE} = -2.0V$ $I_C = -2.0A$	40			
	$h_{FE(3)}$	$V_{CE} = -2.0V$ $I_C = -1.0A$	80			
	$h_{FE(4)}$	$V_{CE} = -2.0V$ $I_C = -1.0mA$	100			
Collector –Emitter Saturation Voltage	$V_{CE(sat)(1)}$	$I_C = -500mA$ $I_B = -50mA$			-0.25	V
	$V_{CE(sat)(2)}$	$I_C = -1.0A$ $I_B = -100mA$			-0.30	V
	$V_{CE(sat)(3)}$	$I_C = -2.0A$ $I_B = -200mA$			-0.65	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C = -1.0A$ $I_B = -0.1A$			-1.2	V
Base-Emitter Turn-on Voltage	$V_{BE(ON)}$	$I_C = -1.0A$ $V_{CE} = -2.0V$			-1.1	V
Transition Frequency	f_T	$I_C = -100mA$ $f = 100MHz$ $V_{CE} = -5.0V$	100			MHz
Collector Output Capacitance	C_{obo}	$f = 1.0MHz$			15	pF

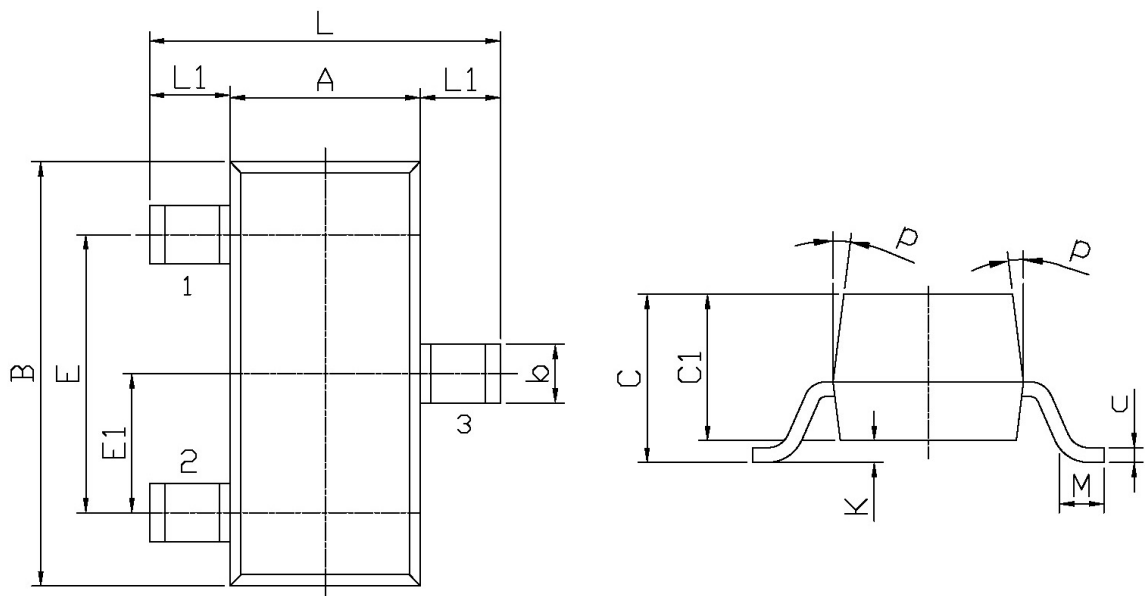
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

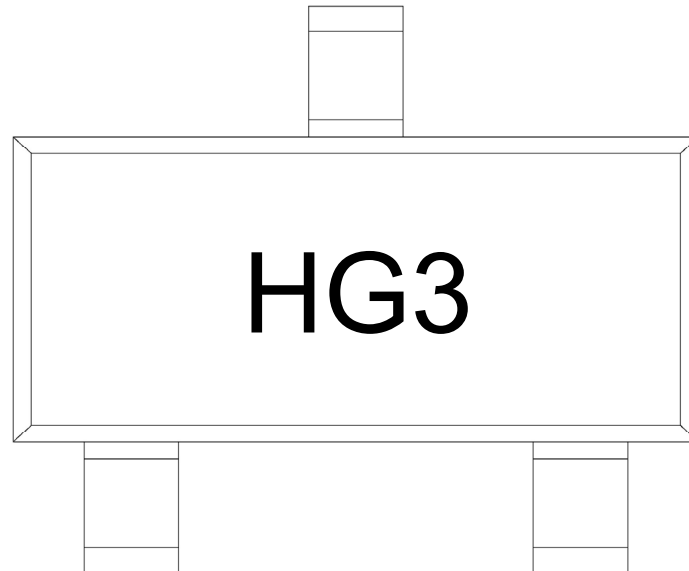
SOT-23

单位：mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
L	2.2	2.7	C	1.30Max	
L1	0.45	0.65	C1	0.90	1.20
A	1.15	1.50	c	0.05	0.20
B	2.70	3.10	K	0	0.10
E	1.70	2.10	M	0.20MIN	
E1	0.85	1.05	P	7°	
b	0.35	0.55			

印章说明 / Marking Instructions



说明：

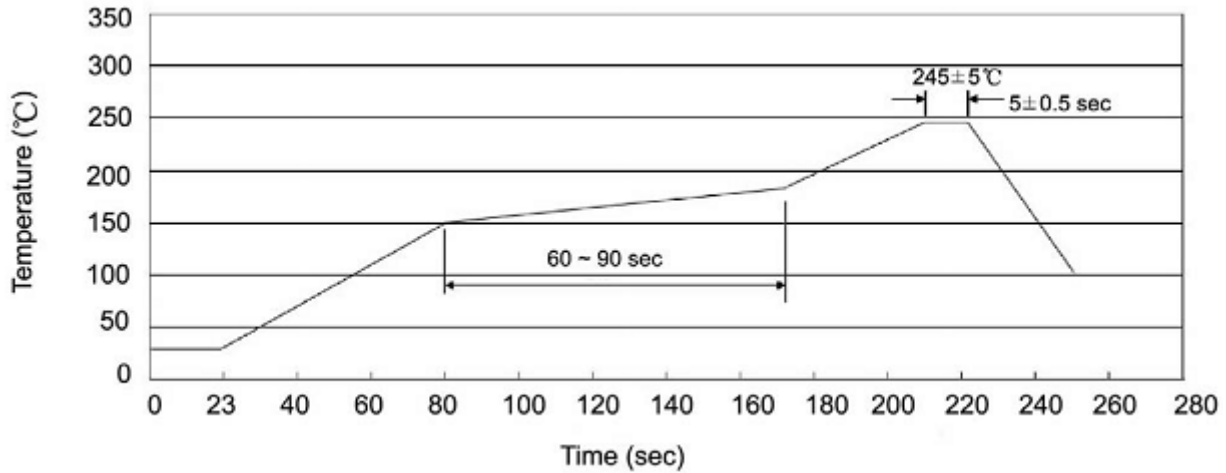
H： 为公司代码

G3： 为型号代码

Note:

H： Company Code

G3： Product Type Code

回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)


说明：

- 1、预热温度 25 ~ 150°C，时间 60 ~ 90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

Note:

- 1.Preheating:25~150°C, Time:60~90sec.
- 2.Peak Temp.:245±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

包装规格 / Packaging SPEC.

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SOT-23	3,000	10	30,000	6	180,000	7" x8	180×120×180	390×385×205

使用说明 / Notices