

MMBT3906W

Rev.F Dec.-2024

描述 / Descriptions

SOT-323 塑封封装 PNP 半导体三极管。Silicon PNP transistor in a SOT-323 Plastic Package.

特征 / Features

低电流、低电压，无卤产品。

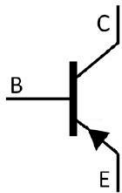
Low current, Low voltage, HF Product.

用途 / Applications

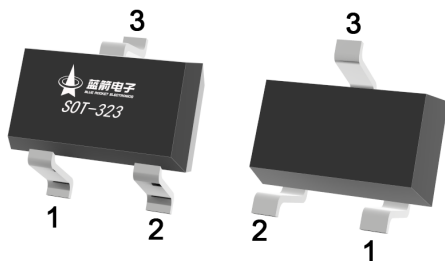
用于普通放大及开关。

General purpose amplifier and switching.

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

Marking	• H2A
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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}	-40	V
Collector to Emitter Voltage	V_{CEO}	-40	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current - Continuous	I_C	-200	mA
Collector Power Dissipation	P_C	200	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)

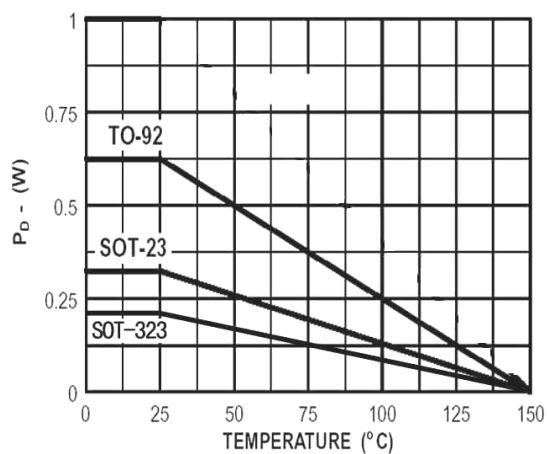
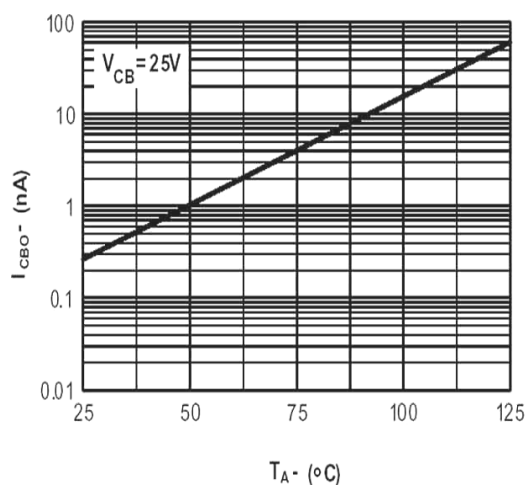
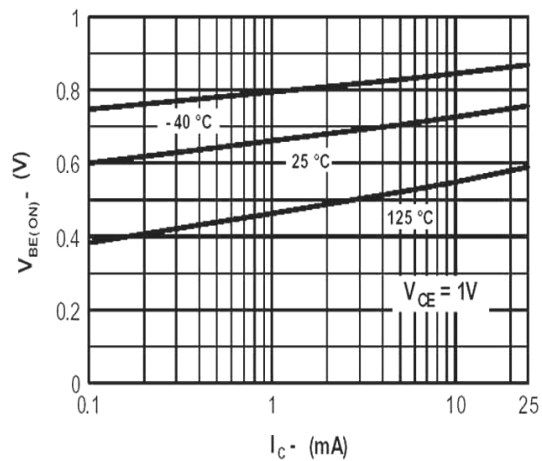
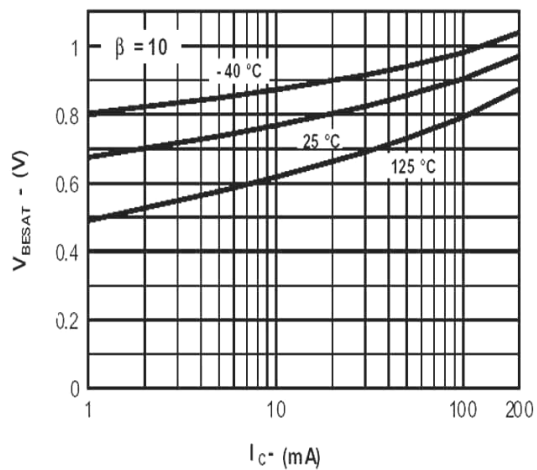
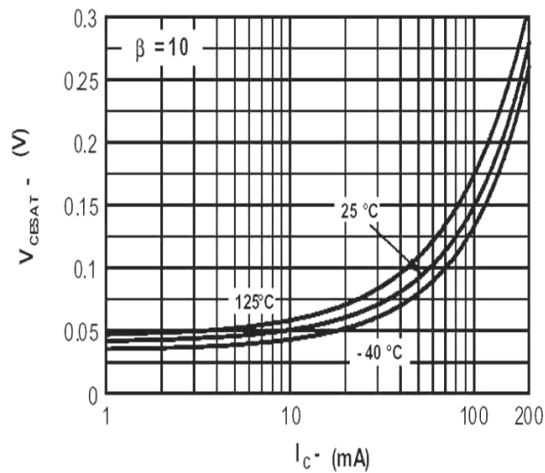
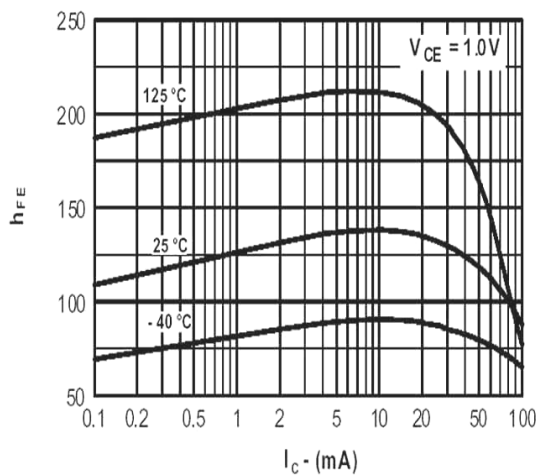
参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C = -10\mu A$ $I_E = 0$	-40			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C = -1.0mA$ $I_B = 0$	-40			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E = -10\mu A$ $I_C = 0$	-5.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB} = -30V$ $I_E = 0$			-0.05	μA
Emitter to Base Current	I_{EBO}	$V_{EB} = -3.0V$ $I_C = 0$			-0.05	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE} = -1.0V$ $I_C = -10mA$	100		300	
	$h_{FE(2)}$	$V_{CE} = -1.0V$ $I_C = -100mA$	30			
	$h_{FE(3)}$	$V_{CE} = -1.0V$ $I_C = -50mA$	60			
	$h_{FE(4)}$	$V_{CE} = -1.0V$ $I_C = -1.0mA$	80			
	$h_{FE(5)}$	$V_{CE} = -1.0V$ $I_C = -0.1mA$	60			
Collector to Emitter Saturation Voltage	$V_{CE(sat)(1)}$	$I_C = -10mA$ $I_B = -1.0mA$			-0.25	V
	$V_{CE(sat)(2)}$	$I_C = -50mA$ $I_B = -5.0mA$			-0.4	V
Base to Emitter Saturation Voltage	$V_{BE(sat)(1)}$	$I_C = -10mA$ $I_B = -1.0mA$	-0.65		-0.85	V
	$V_{BE(sat)(2)}$	$I_C = -50mA$ $I_B = -5.0mA$			-0.95	V



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
Transition Frequency	f_T	$I_C = -10\text{mA}$ $V_{CE} = -20\text{V}$ $f = 100\text{MHz}$	250			MHz
Collector output capacitance	C_{ob}	$V_{CB} = -5.0\text{V}$ $f = 1.0\text{MHz}$			4.5	pF
Storage Time	t_{stg}	$V_{CC} = -3.0\text{V}$ $I_C = -10\text{mA}$ $I_{B1} = -I_{B2} = -1.0\text{mA}$			225	ns
Fall Time	t_f	$V_{CC} = -3.0\text{V}$ $I_C = -10\text{mA}$ $I_{B1} = -I_{B2} = -1.0\text{mA}$			75	ns
Delay Time	t_d	$V_{CC} = -3.0\text{V}$ $V_{BE} = -0.5\text{V}$ $I_C = -10\text{mA}$ $I_{B1} = -1.0\text{mA}$			35	ns
Rise Time	t_r	$V_{CC} = -3.0\text{V}$ $V_{BE} = -0.5\text{V}$ $I_C = -10\text{mA}$ $I_{B1} = -1.0\text{mA}$			35	ns
Input Capacitance	C_{ib}	$V_{EB} = -0.5\text{V}$ $f = 1.0\text{MHz}$			10	pF

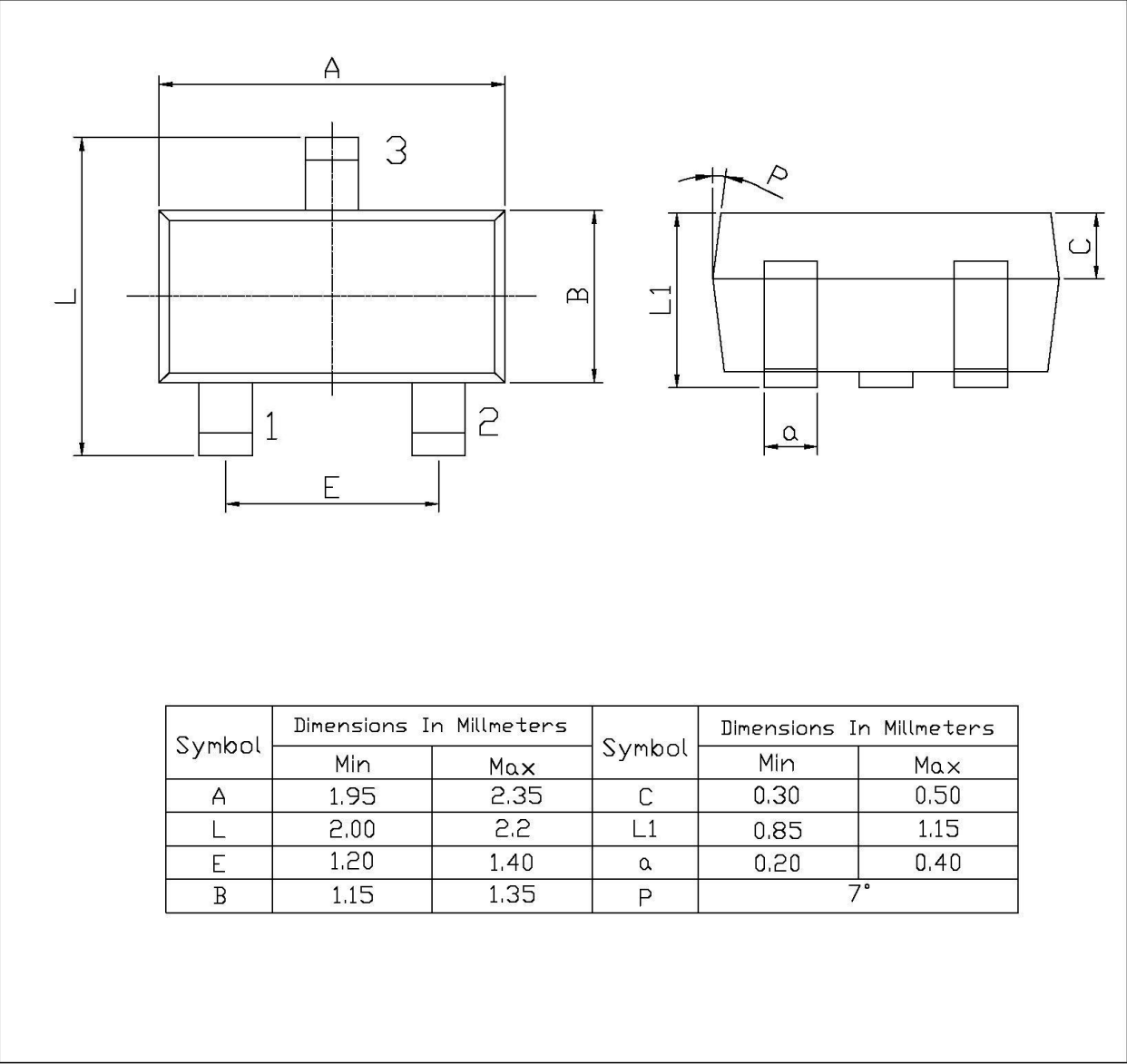
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

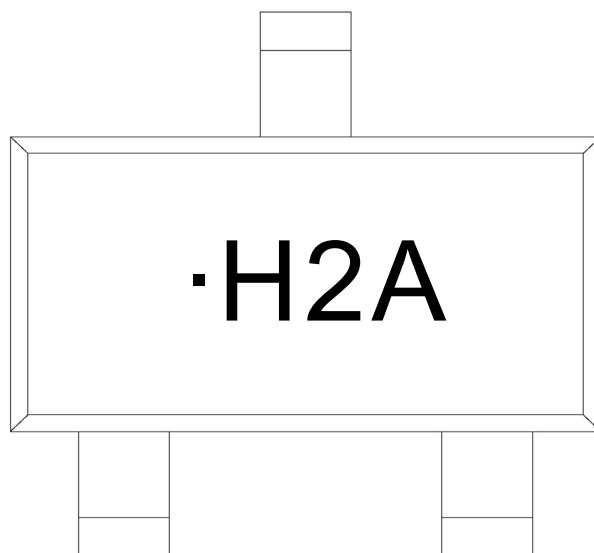
SOT-323

单位：mm





印章说明 / Marking Instructions



说明：

·： 区分标识

H： 为公司代码

2A： 为型号代码

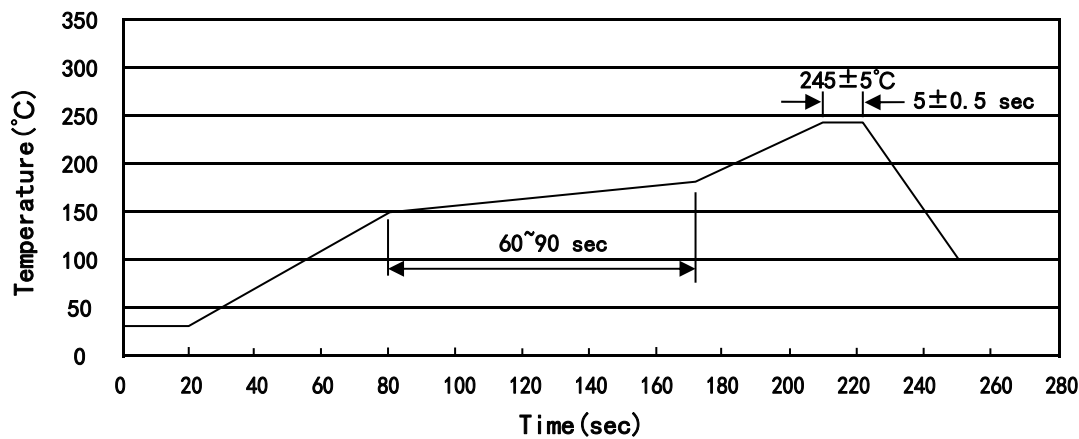
Note:

·： Identify

H: Company Code

2A: 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 150 ~ 180℃ , 时间 60 ~ 90sec;
 - 2、峰值温度 245±5℃ , 时间持续为 5±0.5sec;
 - 3、焊接制程冷却速度为 2 ~ 10℃/sec.
- Note:
- 1.Preheating:150~180℃, Time:60~90sec.
 - 2.Peak Temp.:245±5℃, Duration:5±0.5sec.
 3. Cooling Speed: 2~10℃/sec.

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

温度 : 260±5℃ 时间 : 10±1 sec. Temp.:260±5℃ 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-323	3,000	10	30,000	6	180,000	7" ×8	180×120×180	390×385×205

使用说明 / Notices