2SC1959M
Rev.E Mar.-2016

DATA SHEET

描述 / Descriptions

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

特征 / Features

极好的 h_{FE} 特性,与 2SA562M 互补。

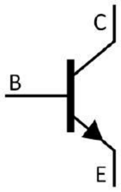
Excellent h_{FE} Linearity, complementary pair with 2SA562M.

用途 / Applications

用于音频小功率放大,激励级放大及开关电路。

Audio frequency low power amplifier,driver stage amplifier and switching applications.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning

PIN1：Emitter PIN 2：Base PIN 3：Collector

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

h_{FE} Classifications Symbol	O	Y
h_{FE} Range	70～140	120～240
Marking	HVBO	HVBY

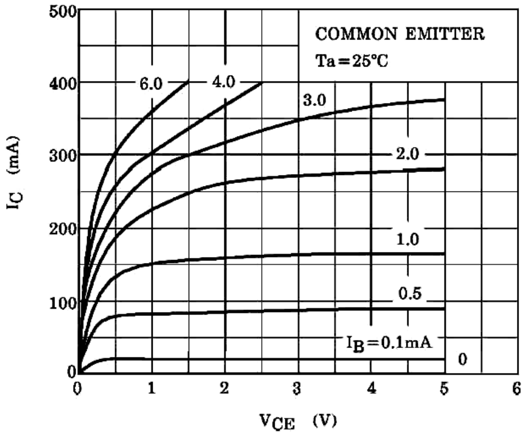
极限参数 / Absolute Maximum Ratings(Ta=25℃)

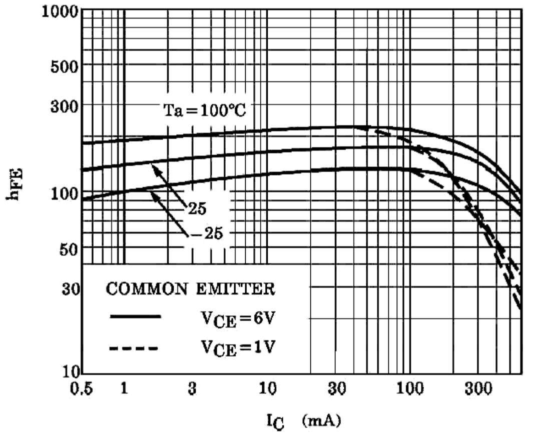
参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V_{CBO}	35	V
Collector to Emitter Voltage	V_{CEO}	30	V
Emitter to Base Voltage	V_{EBO}	5.0	V
Collector Current	I_C	500	mA
Emitter Current	I_E	-500	mA
Collector Power Dissipation	P_C	400	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55～150	℃

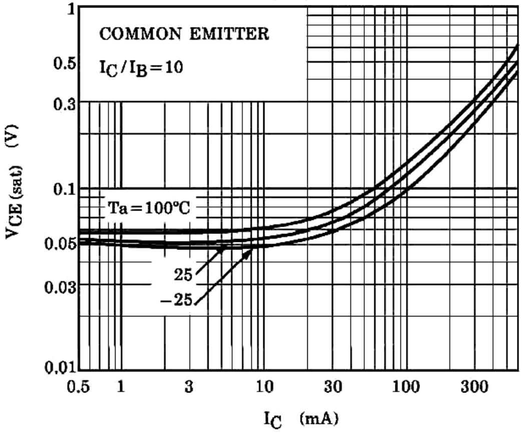
电性能参数 / Electrical Characteristics(Ta=25℃)

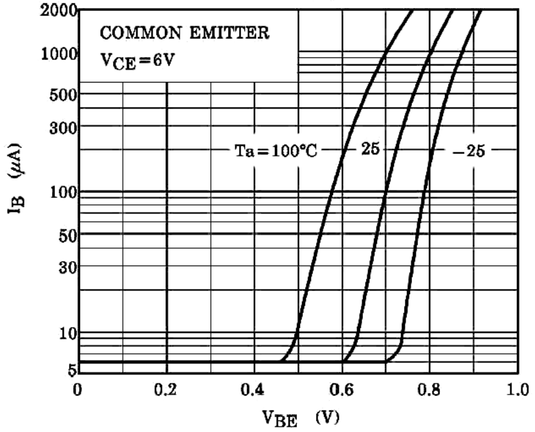
参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Collector Cut-Off Current	I_{CBO}	V_{CB}=35V I_E=0			0.1	μA
Emitter Base Cut-Off Current	I_{EBO}	V_{EB}=5.0V I_c=0			0.1	μA
DC Current Gain	$h_{FE(1)}$	V_{CE}=1.0V I_c=100mA	70		240	
	$h_{FE(2)}$	V_{CE}=6.0V I_c=400mA	25			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	I_c=100mA I_B=10mA		0.1	0.25	V
Base to Emitter Saturation Voltage	V_{BE}	I_c=100mA V_{CE}=1.0V		0.8	1.0	V
Transition Frequency	f_T	V_{CE}=6.0V I_E=20mA		300		MHz
Collector Output Capacitance	C_{ob}	V_{CB}=6.0V I_E=0 f=1.0MHz		7.0		pF

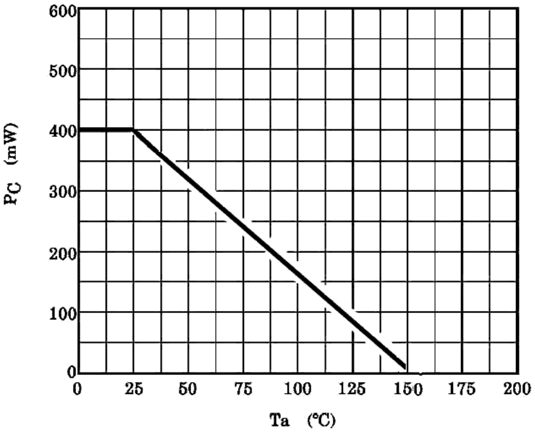
电参数曲线图 / Electrical Characteristic Curve


I_C – V_{CE}


h_{FE} – I_C


$V_{CE(sat)}$ – I_C

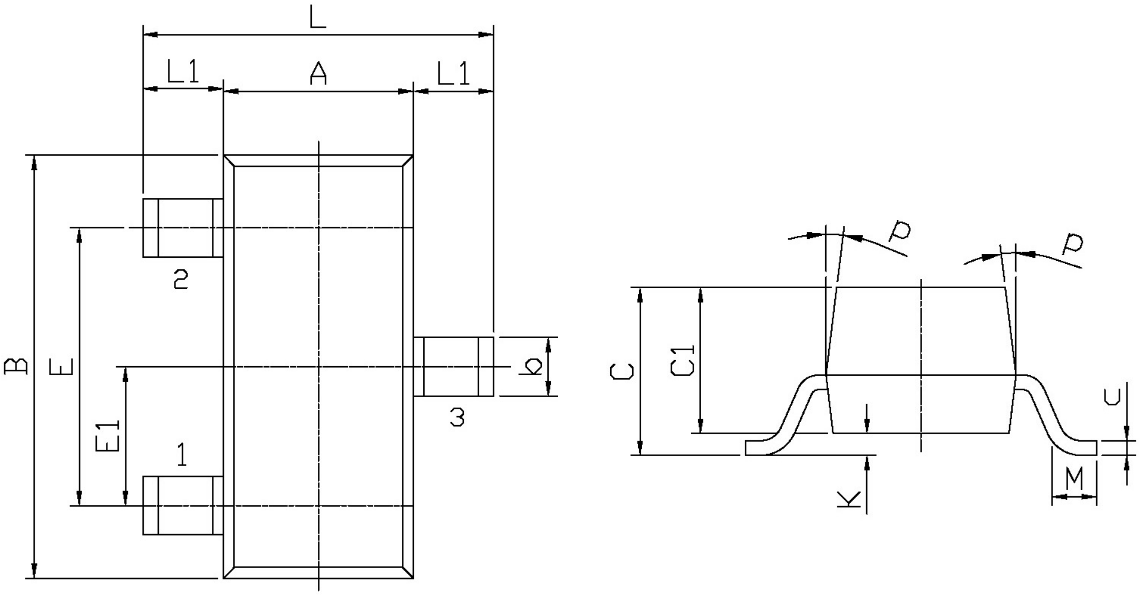

I_B – V_{BE}


P_C – Ta

外形尺寸图 / Package Dimensions

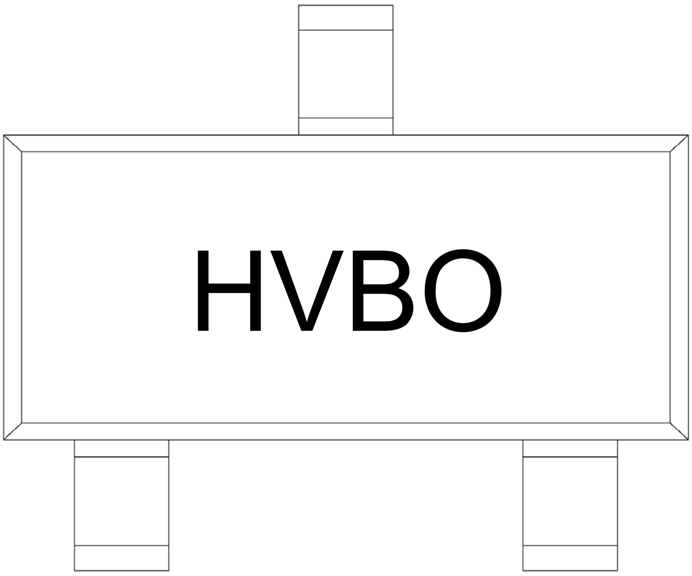
SOT-23

单位：mm



Symbol	Dimensions In Millmeters		Symbol	Dimensions In Millmeters	
	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

VB： 为型号代码

O: 为 h_{FE} 档次代码

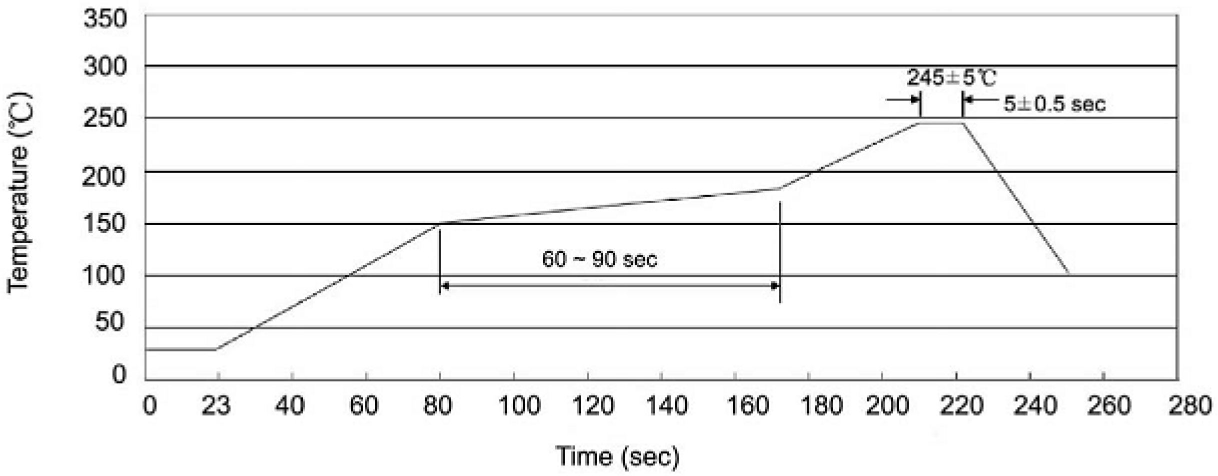
Note:

H: Company Code

VB: Product Type Code

O: h_{FE} Classifications Symbol 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℃，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:25~150℃, 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-23	3,000	10	30,000	8	240,000	7″ ×8	180×120×180	385×257×392

使用说明 / Notices