

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

饱和压降低，电流大，无卤产品。

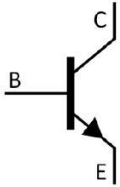
Low $V_{CE(sat)}$, high current, HF product.

用途 / Applications

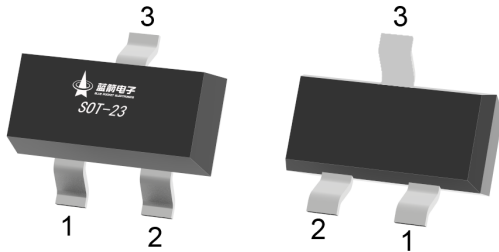
用于一般静音开关，液晶显示器的背景照明，线性开关电源。

General purpose switching and muting, LCD back-lighting, supply line switching circuits.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN 1 : Base

PIN 2 : Emitter

PIN 3 : Collector

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

h_{FE} Range	>200
Marking	HU5

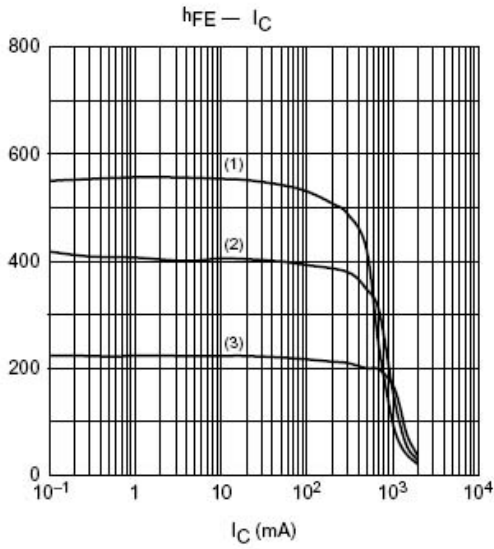
极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V _{CB0}	80	V
Collector to Emitter Voltage	V _{CEO}	60	V
Emitter to Base Voltage	V _{EBO}	5	V
Collector Current	I _C	1	A
Peak Collector Current	I _{CM}	2	A
Base Current	I _B	0.3	A
Peak Base Current	I _{BM}	1	A
Collector Power Dissipation	P _C	400	mW
Junction Temperature	T _j	150	°C
Storage Temperature Range	T _{stg}	-55~150	°C

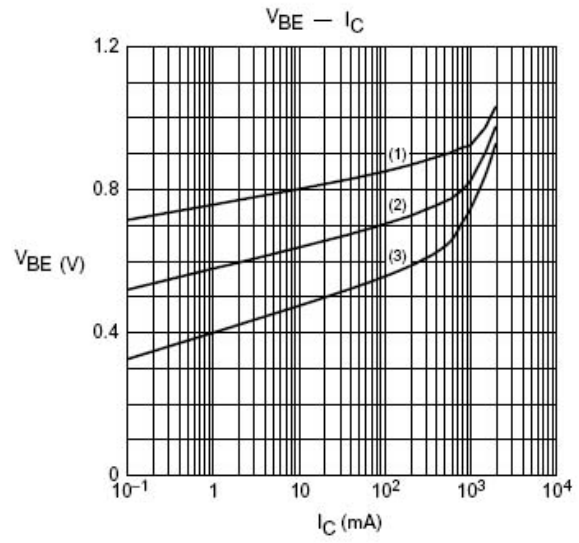
电性能参数 / Electrical Characteristics(Ta=25°C)

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 Cut-Off Current	I _{CBO}	V _{CB} =60V I _E =0A			100	nA
		V _{CB} =60V I _E =0A T _j =150°C			50	μA
Collector Cut-Off Current	I _{CES}	V _{CE} =60V V _{BE} =0V			100	nA
Emitter Cut-Off Current	I _{EBO}	V _{EB} =5.0V I _C =0A			100	nA
DC Current Gain	h _{FE(1)}	V _{CE} =5.0V I _C =500mA	200	350		
	h _{FE(2)}	V _{CE} =5.0V I _C =1.0mA	250	400		
	h _{FE(3)}	V _{CE} =5.0V I _C =1.0A	100	150		
Collector-Emitter Saturation Voltage	V _{CE(sat)(1)}	I _C =100mA I _B =1.0mA		90	110	mV
	V _{CE(sat)(2)}	I _C =500mA I _B =50mA		110	140	mV
	V _{CE(sat)(3)}	I _C =1.0A I _B =100mA		200	250	mV
Base-Emitter Saturation Voltage	V _{BE(sat)}	I _C =1.0A I _B =50mA		0.95	1.1	V
Base-Emitter Voltage	V _{BE}	V _{CE} =5.0V I _C =1.0A		0.82	0.9	V
Transition Frequency	f _T	V _{CE} =10V I _C =50mA f=100MHz	150	220		MHz
Output Capacitance	C _C	V _{CB} =10V I _E =0 f=1.0MHz		5.5	10	pF

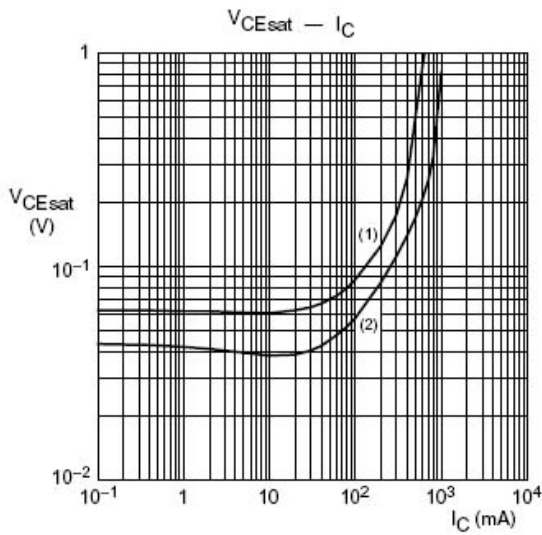
电参数曲线图 / Electrical Characteristic Curve



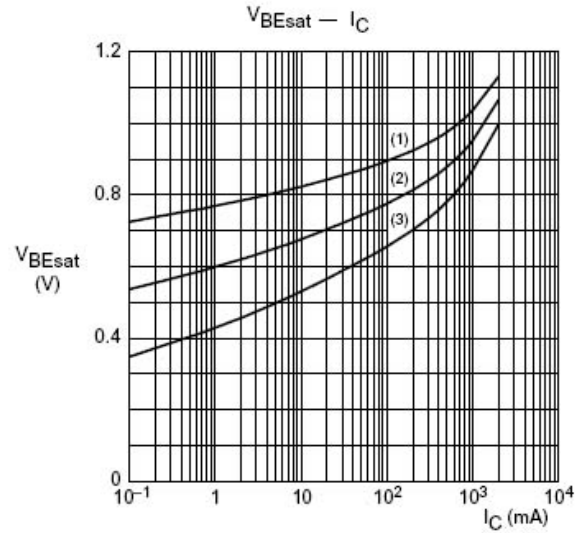
$V_{CE} = 5\text{ V.}$
(1) $T_{amb} = 100\text{ }^{\circ}\text{C.}$
(2) $T_{amb} = 25\text{ }^{\circ}\text{C.}$
(3) $T_{amb} = -55\text{ }^{\circ}\text{C.}$



$V_{CE} = 5\text{ V.}$
(1) $T_{amb} = -55\text{ }^{\circ}\text{C.}$
(2) $T_{amb} = 25\text{ }^{\circ}\text{C.}$
(3) $T_{amb} = 100\text{ }^{\circ}\text{C.}$



$T_{amb} = 25\text{ }^{\circ}\text{C.}$
(1) $I_C/I_B = 100.$
(2) $I_C/I_B = 50.$

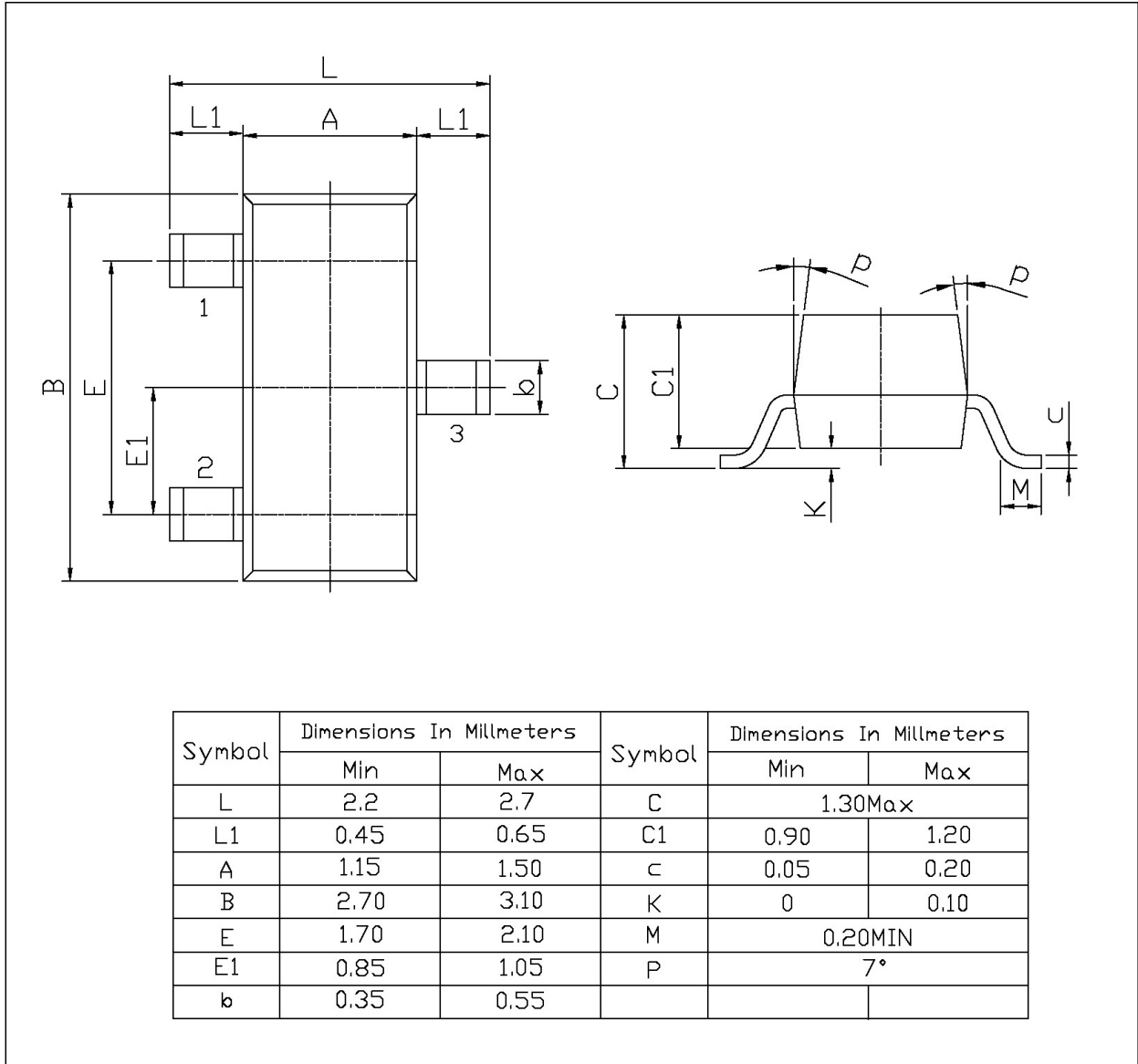


$I_C/I_B = 20.$
(1) $T_{amb} = -55\text{ }^{\circ}\text{C.}$
(2) $T_{amb} = 25\text{ }^{\circ}\text{C.}$
(3) $T_{amb} = 100\text{ }^{\circ}\text{C.}$

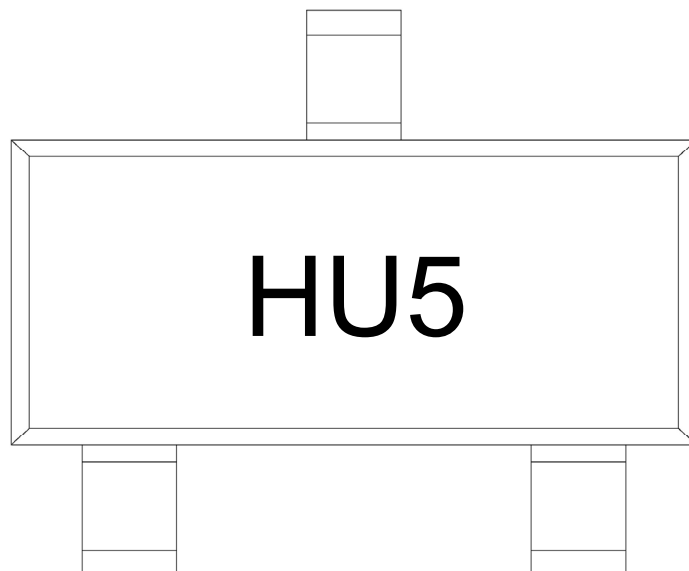
外形尺寸图 / Package Dimensions

SOT-23

单位: mm



印章说明 / Marking Instructions



说明：

H： 为公司代码

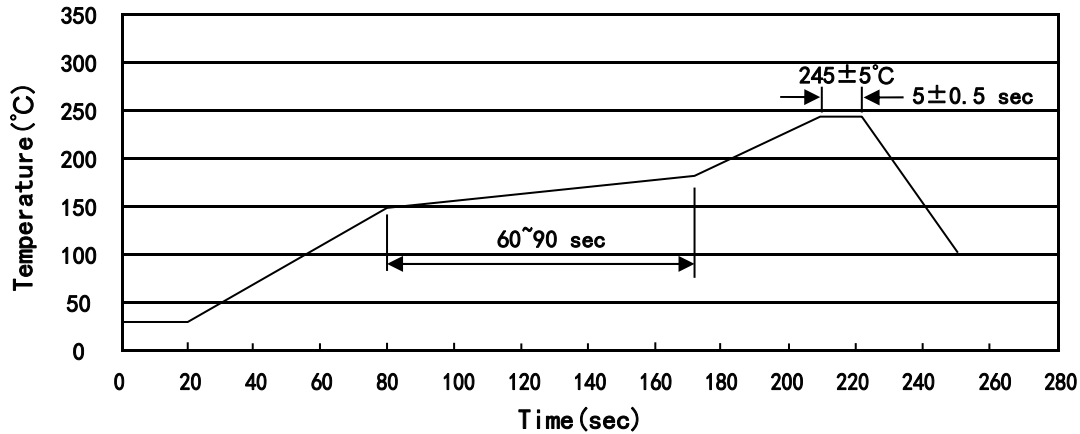
U5： 为型号代码

Note:

H： Company Code

U5： 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°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:150~180°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" ×8	180×120×180	390×385×205

使用说明 / Notices

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