

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。

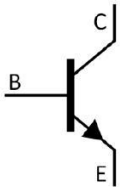
Low $V_{CE(sat)}$, high current.

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 : Emitter PIN 2 : Base PIN 3 : Collector

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

h_{FE} Range	>200
Marking	HU5

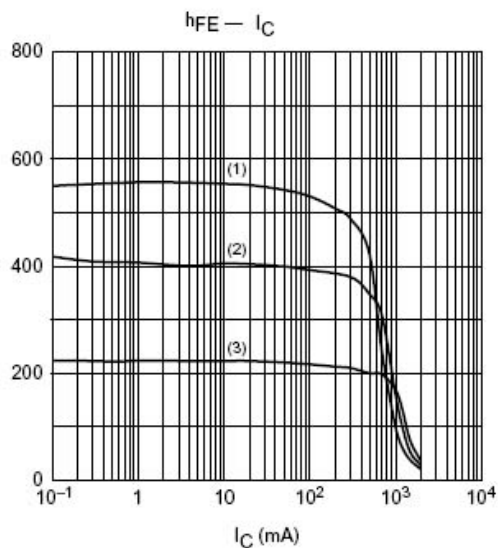
极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V_{CBO}	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

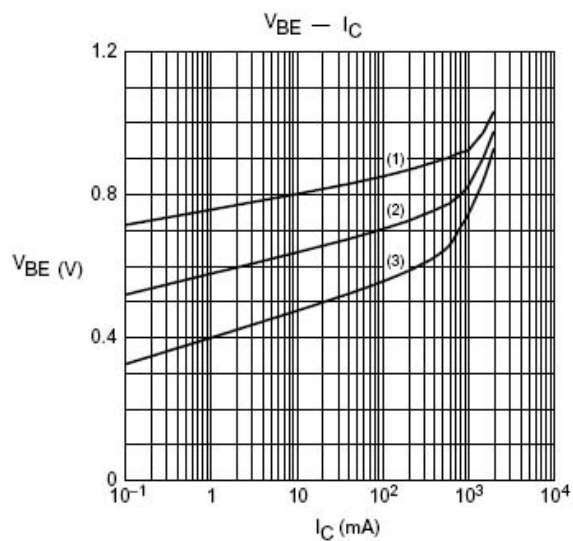
电性能参数 / Electrical Characteristics(Ta=25°C)

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}	$V_{CB}=60V \quad I_E=0A$			100	nA
		$V_{CB}=60V \quad I_E=0A \quad T_J=150^\circ C$			50	μA
Collector Cut-Off Current	I_{CES}	$V_{CE}=60V \quad V_{BE}=0V$			100	nA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=5.0V \quad I_C=0A$			100	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5.0V \quad I_C=500mA$	200	350		
	$h_{FE(2)}$	$V_{CE}=5.0V \quad I_C=1.0mA$	250	400		
	$h_{FE(3)}$	$V_{CE}=5.0V \quad I_C=1.0A$	100	150		
Collector-Emitter Saturation Voltage	$V_{CE(sat)(1)}$	$I_C=100mA \quad I_B=1.0mA$		90	110	mV
	$V_{CE(sat)(2)}$	$I_C=500mA \quad I_B=50mA$		110	140	mV
	$V_{CE(sat)(3)}$	$I_C=1.0A \quad I_B=100mA$		200	250	mV
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1.0A \quad I_B=50mA$		0.95	1.1	V
Base-Emitter Voltage	V_{BE}	$V_{CE}=5.0V \quad I_C=1.0A$		0.82	0.9	V
Transition Frequency	f_T	$V_{CE}=10V \quad I_C=50mA \quad f=100MHz$	150	220		MHz
Output Capacitance	C_C	$V_{CB}=10V \quad I_E=0 \quad f=1.0MHz$		5.5	10	pF

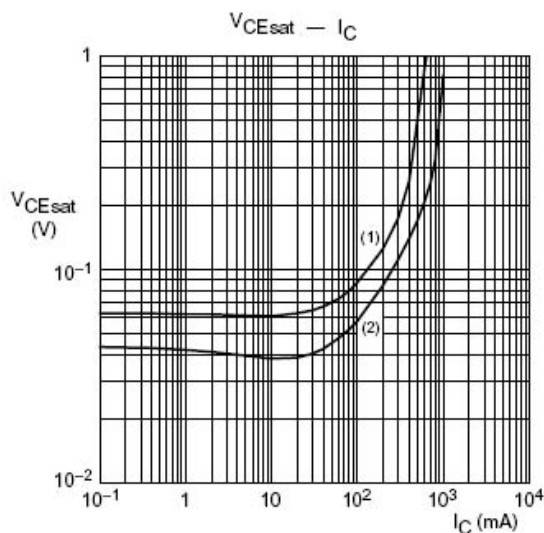
电参数曲线图 / Electrical Characteristic Curve



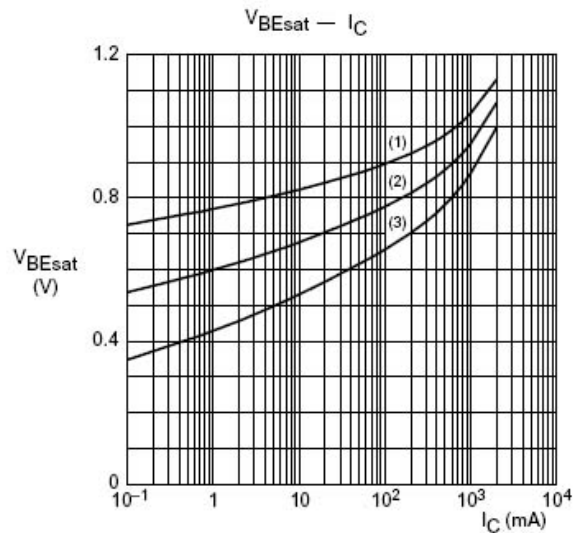
$V_{CE} = 5$ V.
(1) $T_{amb} = 100$ °C.
(2) $T_{amb} = 25$ °C.
(3) $T_{amb} = -55$ °C.



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



$T_{amb} = 25$ °C.
(1) $I_C/I_B = 100$.
(2) $I_C/I_B = 50$.

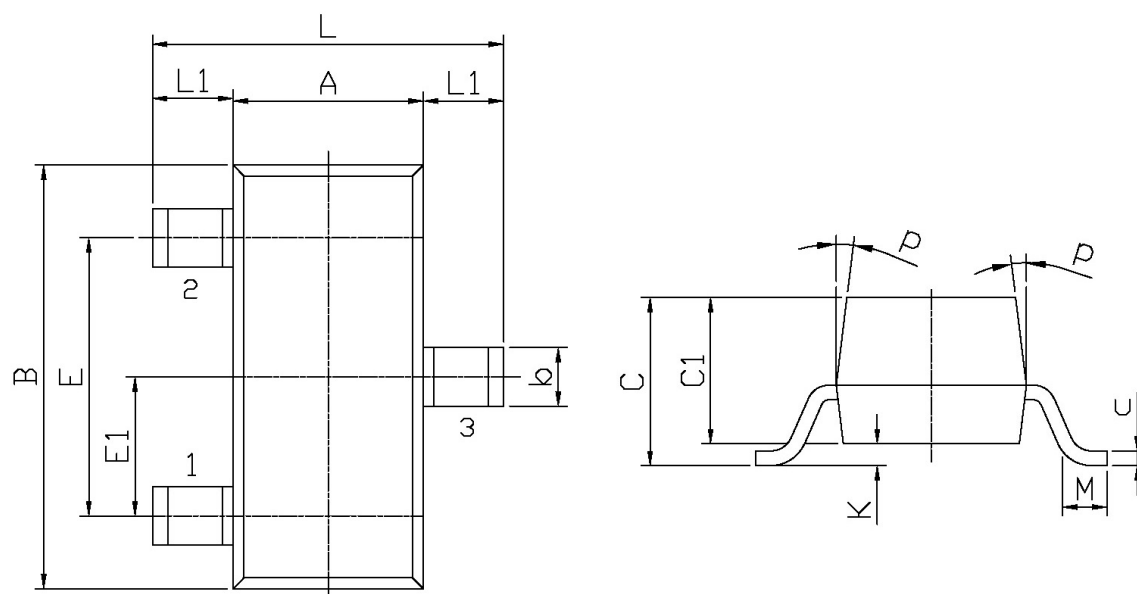


$I_C/I_B = 20$.
(1) $T_{amb} = -55$ °C.
(2) $T_{amb} = 25$ °C.
(3) $T_{amb} = 100$ °C.

外形尺寸图 / Package Dimensions

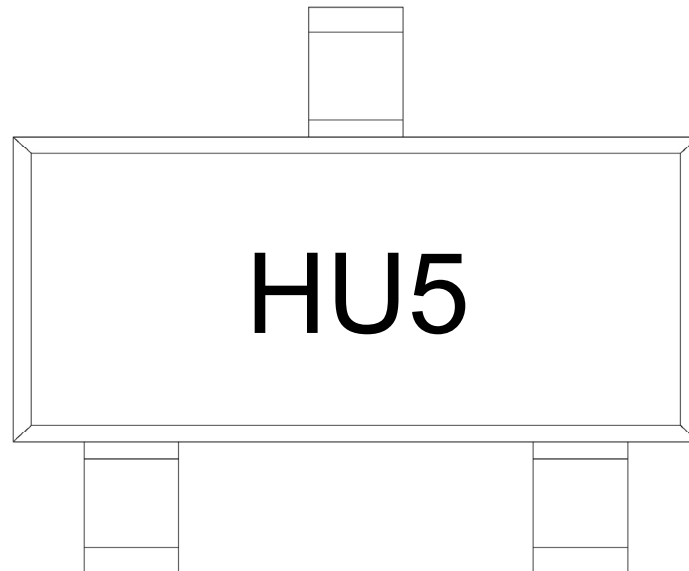
SOT-23

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

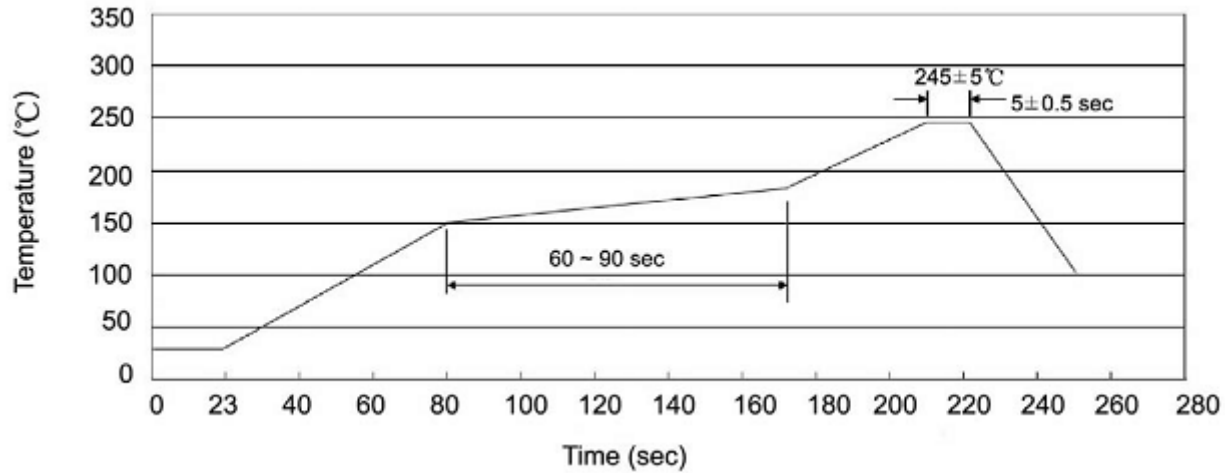
U5： 为型号代码

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 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	8	240,000	7" ×8	180×120×180	385×257×392

使用说明 / Notices