

### 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.

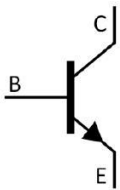
### 特征 / Features

频率高。  
High frequency.

### 用途 / Applications

用于超高频频率转换,负载振荡器,宽频放大。  
UHF frequency converter, local oscillator, wide band amplifier.

### 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	20~200
Marking	HGC

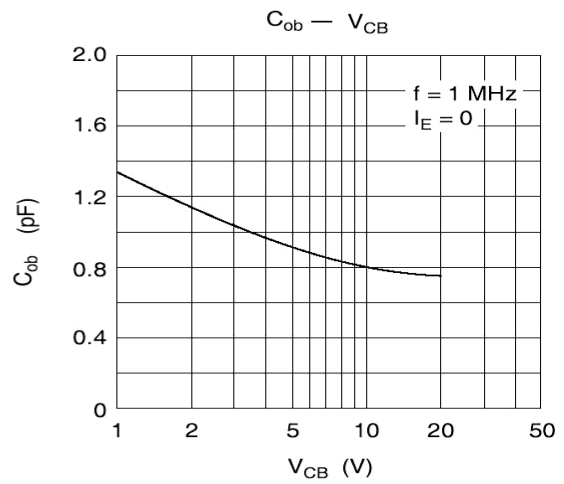
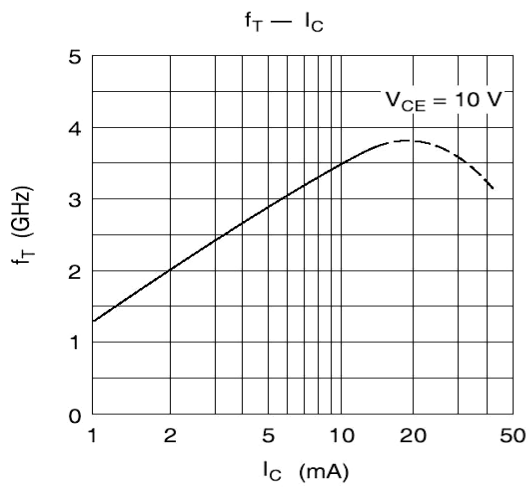
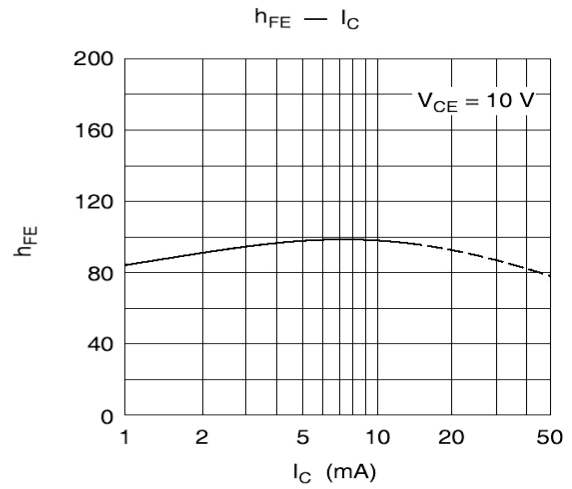
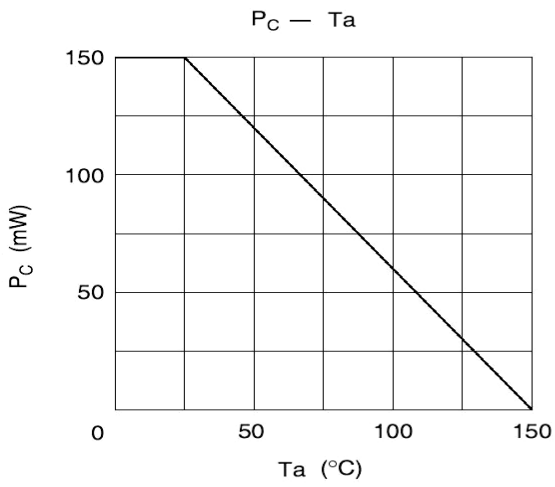
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	$V_{CBO}$	20	V
Collector to Emitter Voltage	$V_{CEO}$	11	V
Emitter to Base Voltage	$V_{EBO}$	3.0	V
Collector Current	$I_C$	50	mA
Collector Power Dissipation	$P_C$	150	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- Base Breakdown Voltage	$V_{CBO}$	$I_C=10\mu A$ $I_E=0$	20			V
Collector-Emitter Breakdown Voltage	$V_{CEO}$	$I_C=1.0mA$ $R_{BE}=\infty$	11			V
Emitter-Base Breakdown Voltage	$V_{EBO}$	$I_E=10\mu A$ $I_C=0$	3.0			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=10V$ $I_E=0$			0.5	$\mu A$
Emitter Cut-Off Current	$I_{EBO}$	$V_{CB}=2.0V$ $I_E=0$			0.5	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}=10V$ $I_C=5.0mA$	20	90	200	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10mA$ $I_B=5.0mA$			0.7	V
Transition Frequency	$f_T$	$V_{CE}=10V$ $I_C=10mA$	1400	3500		MHz
Collector output capacitance	$C_{ob}$	$V_{CE}=10V$ $I_E=0$ $f=1.0MHz$		0.9	1.5	pF
Conversion Gain	CG	$V_{CC}=6.0V$ $I_C=2.0mA$ $f=900MHz$ $f_{OSC}=930MHz(0dBm)$ $f_{out}=30MHz$		15		dB
Noise Figure	NF	$V_{CC}=6.0V$ $I_C=2.0mA$ $f=900MHz$ $f_{OSC}=930MHz(0dBm)$ $f_{out}=30MHz$		9.0		dB
The Output Clock Supply Voltage	$V_{OSC}$	$V_{CC}=6.0V$ $I_C=5.0mA$ $f=930MHz$		140		mV

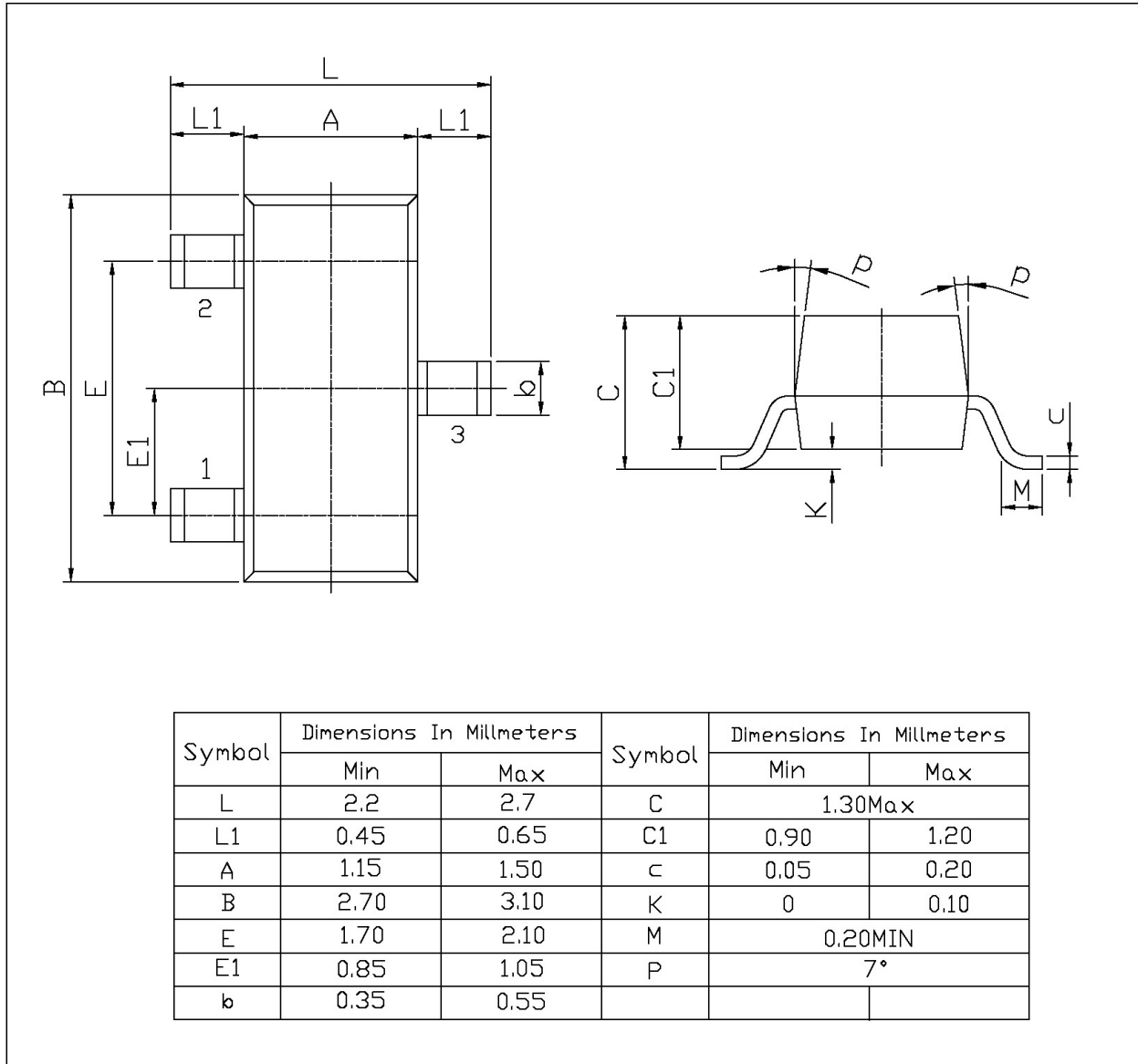
电参数曲线图 / Electrical Characteristic Curve



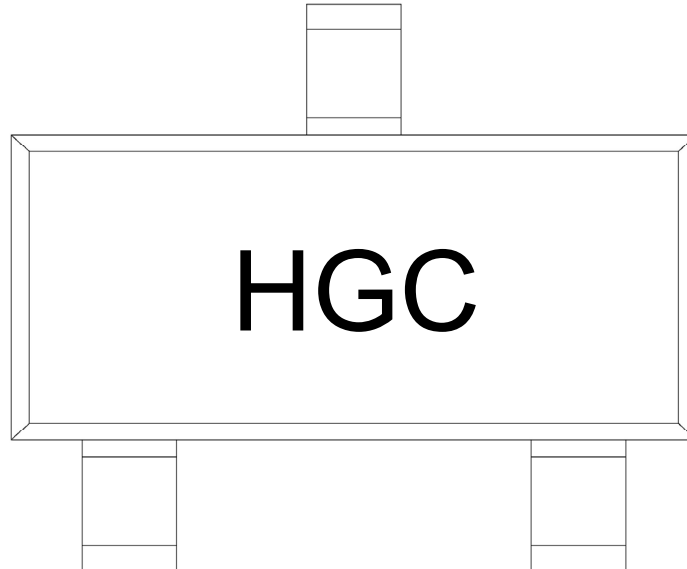
外形尺寸图 / Package Dimensions

SOT-23

单位: mm



印章说明 / Marking Instructions



说明：

H： 为公司代码

GC： 为型号代码

Note:

H： Company Code

GC： 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 <sup>3</sup> )		
	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" x8	180×120×180	385×257×392

**使用说明 / Notices**