

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.

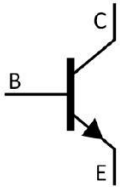
特征 / Features

频率高。
High f_T .

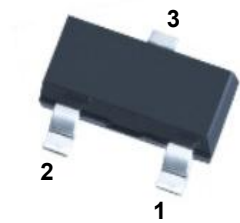
用途 / Applications

用于超高频、特高频的频率转换,负载振荡器。
UHF/VHF frequency converter, local oscillator.

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	30~200
Marking	HTC

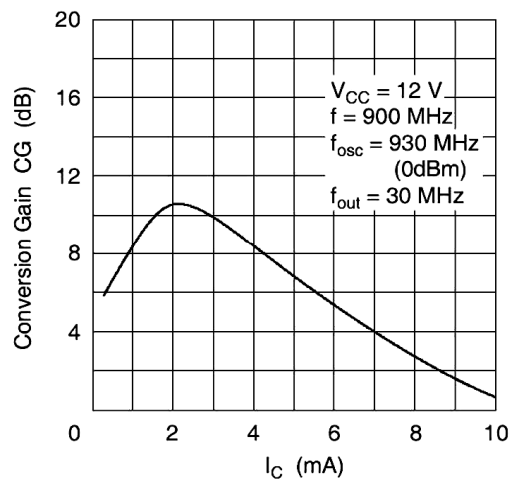
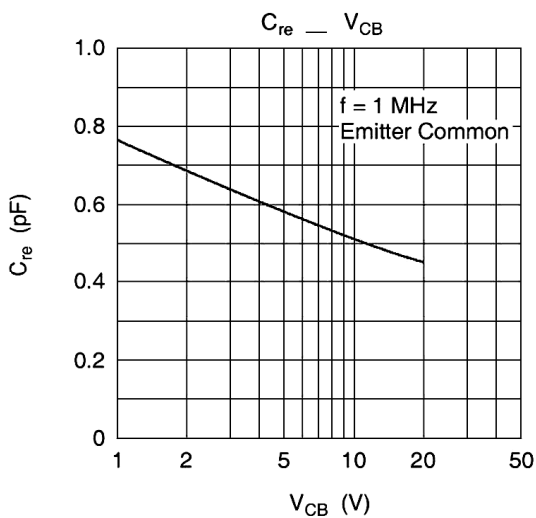
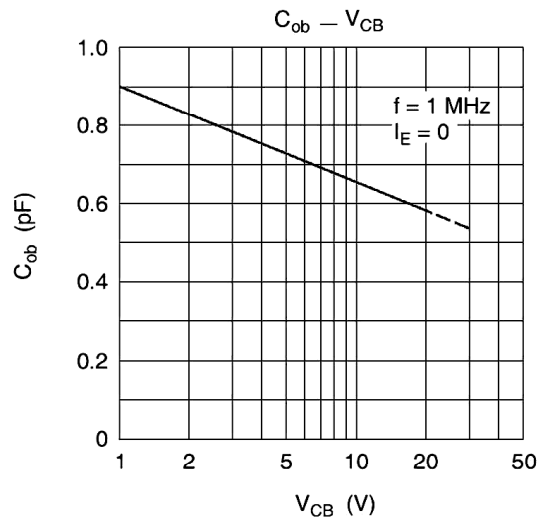
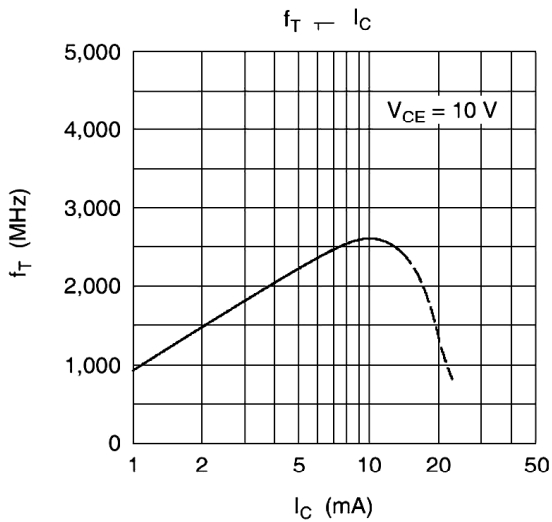
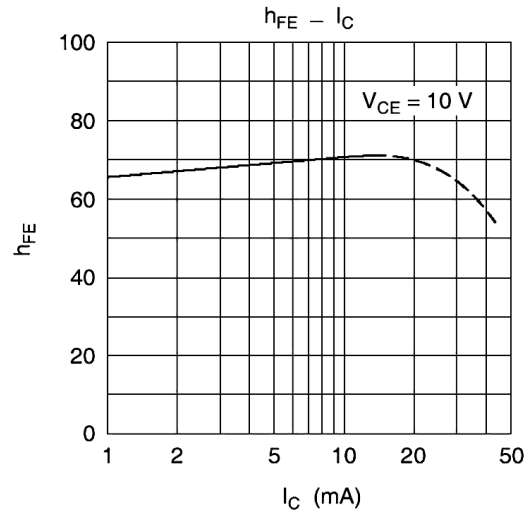
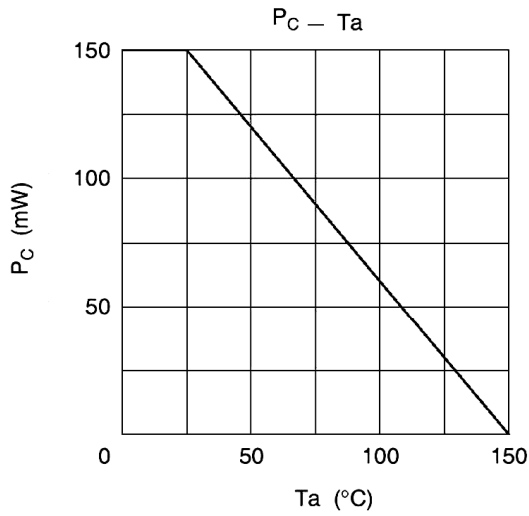
极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V_{CBO}	30	V
Collector to Emitter Voltage	V_{CEO}	20	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}	$I_C=10\mu A$ $I_E=0$	30			V
Collector-Emitter Breakdown Voltage	V_{CEO}	$I_C=1.0mA$ $R_{BE}=\infty$	20			V
Emitter-Base Breakdown Voltage	V_{EBO}	$I_E=10\mu A$ $I_C=0$	3.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=15V$ $I_E=0$			0.5	μA
DC Current Gain	h_{FE}	$V_{CE}=10V$ $I_C=5.0mA$	30		200	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10mA$ $I_B=5.0mA$			0.7	V
Transition Frequency	f_T	$V_{CE}=10V$ $I_C=5.0mA$	1400	2200		MHz
Collector output capacitance	C_{ob}	$V_{CB}=10V$ $I_E=0$			1.0	pF
Conversion gain	CG_1	$V_{CC}=12V$ $I_C=2.0mA$ $f=200MHz$ $f_{OSC}=230MHz(0dBm)$		22.5		dB
	CG_2	$V_{CC}=12V$ $I_C=2.0mA$ $f=900MHz$ $f_{OSC}=930MHz(0dBm)$ $f_{out}=30MHz$		10		dB
Noise Figure	NF	$V_{CC}=12V$ $I_C=2.0mA$ $f=200MHz$ $f_{OSC}=230MHz(0dBm)$		4.0		dB
The Output Clock Supply Voltage	V_{OSC1}	$V_{cc}=12V$ $I_C=7.0mA$ $f_{osc}=300MHz$		300		mV
	V_{OSC2}	$V_{cc}=12V$ $I_C=7.0mA$ $f_{osc}=930MHz$		200		mV

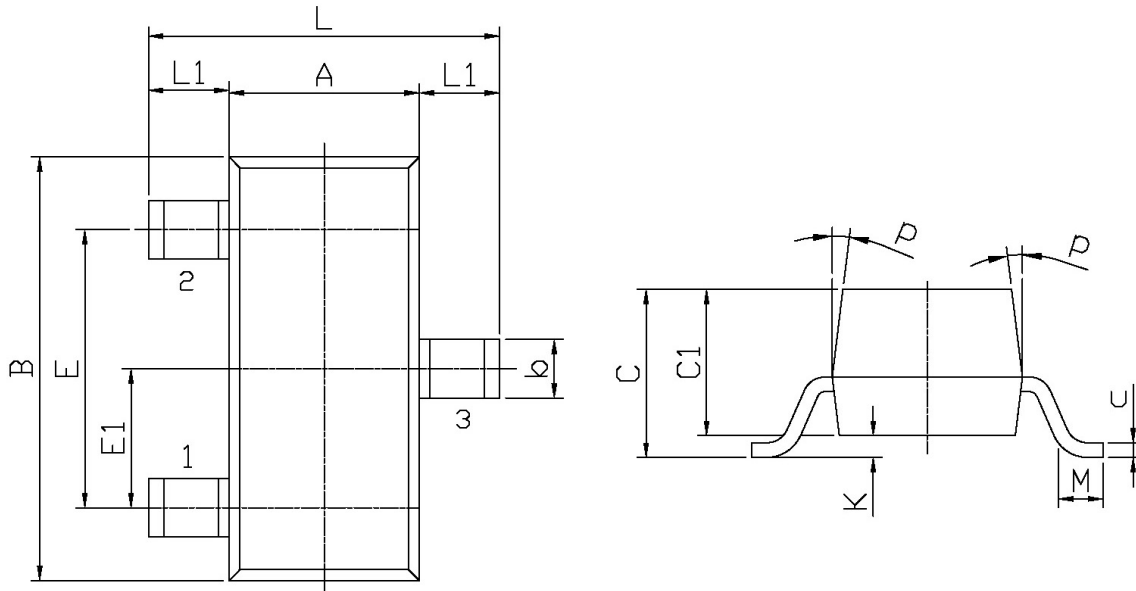
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

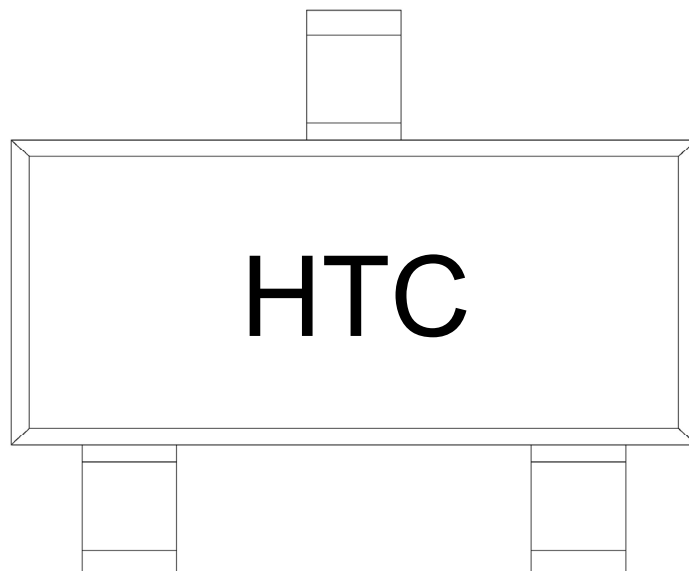
SOT-23

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

TC： 为型号代码

Note:

H： Company Code

TC： 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