

/ Descriptions

SOT-23 NPN Silicon NPN transistor in a SOT-23 Plastic Package.

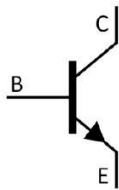
/ Features

High f_T .

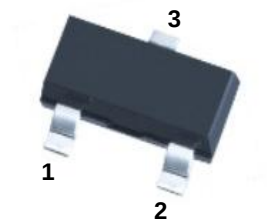
/ Applications

UHF/VHF frequency converter, local oscillator.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Emitter PIN 3 Collector

/ h_{FE} Classifications & Marking

h_{FE} Range	30~200
Marking	HTC

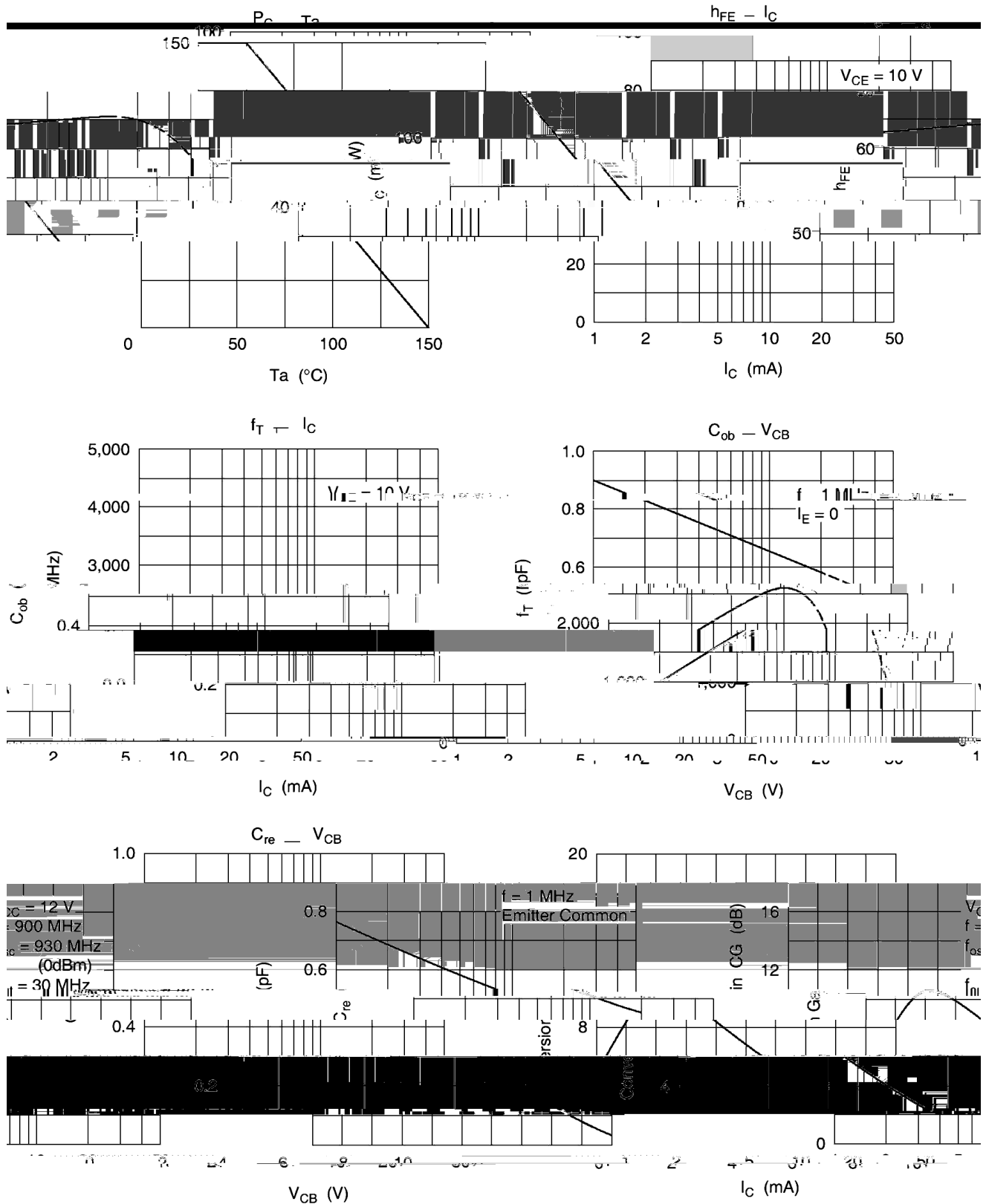
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	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

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	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

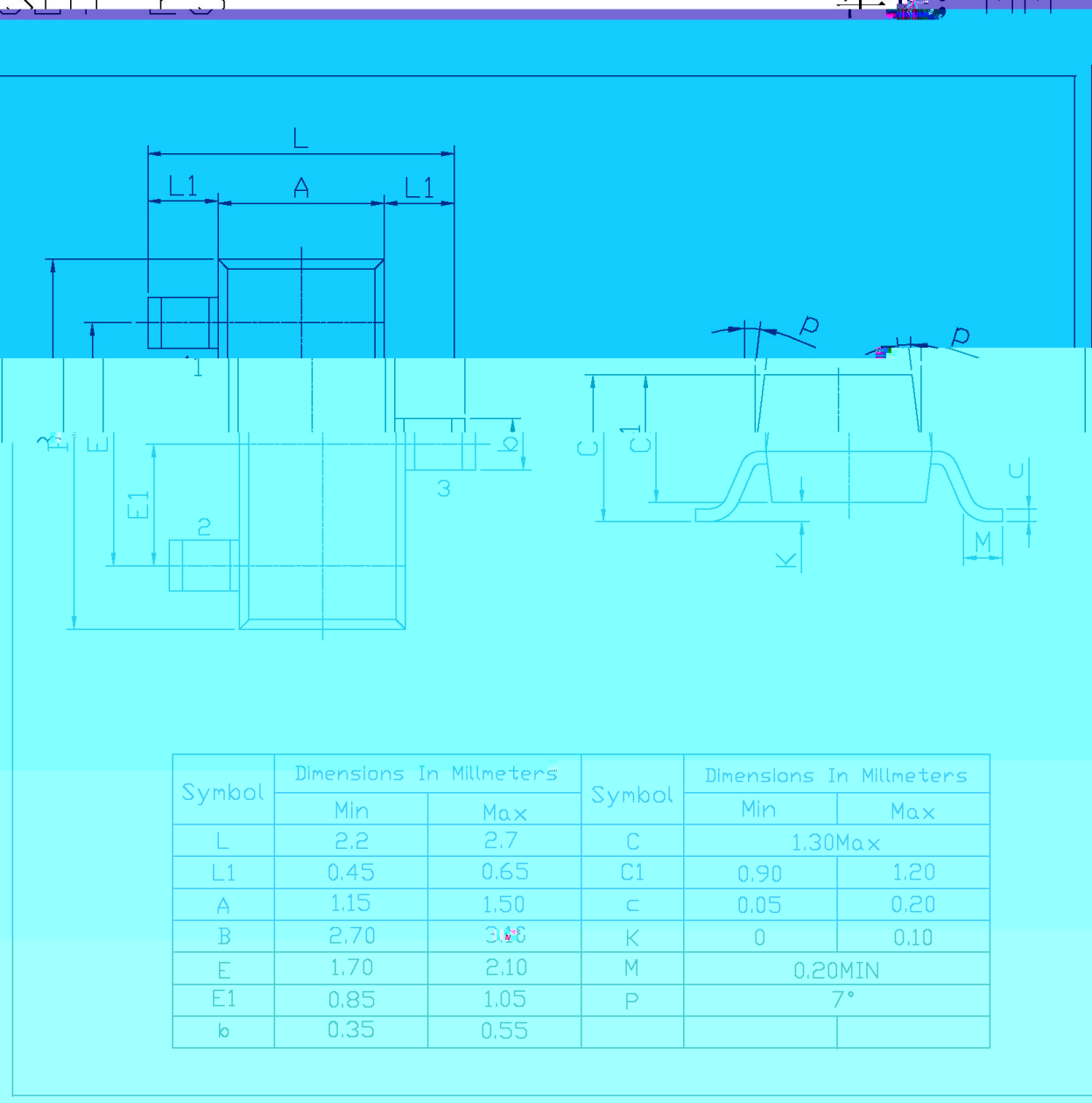
I Electrical Characteristic Curve



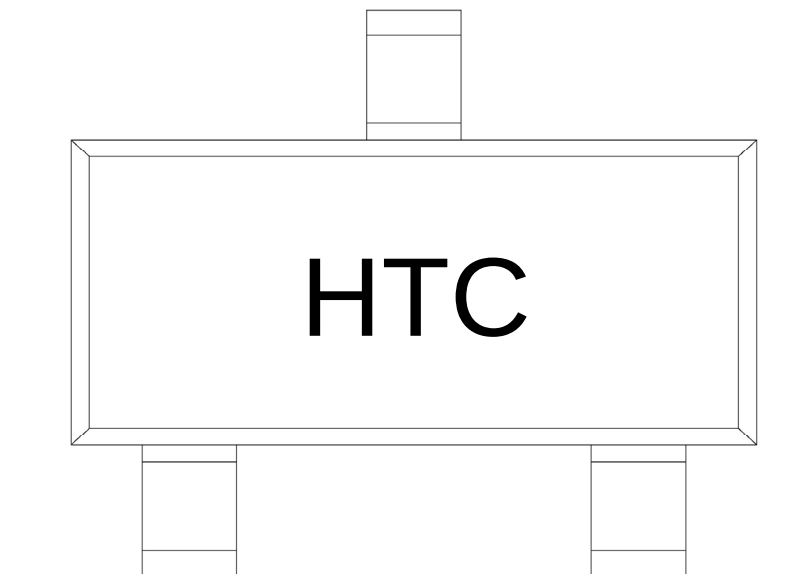
/ Package Dimensions

SOT-23

单位: mm



/ Marking Instructions



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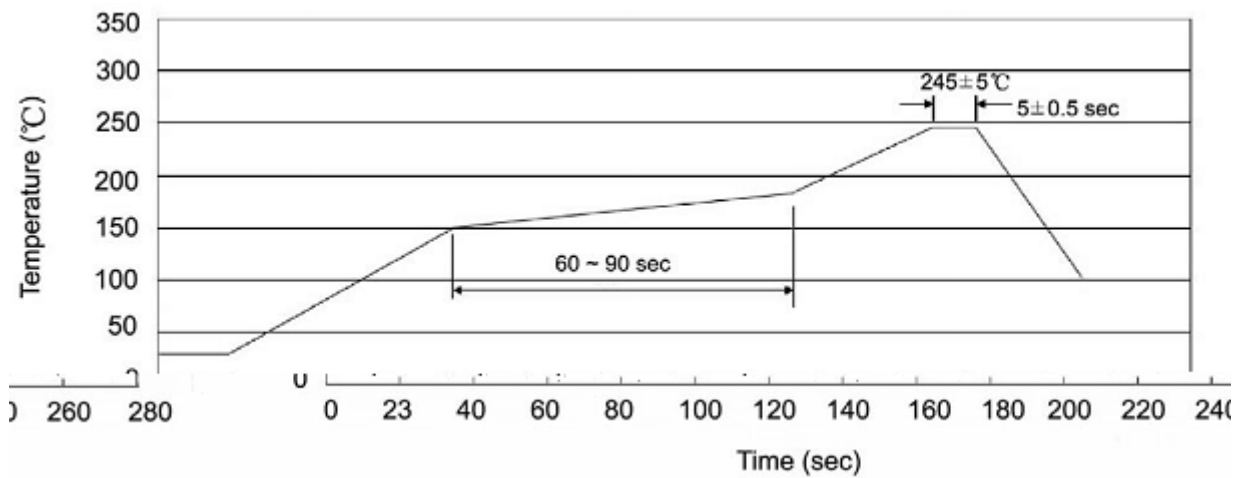
TC

Note:

H Company Code

TC Product Type Code

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- | | | | | | |
|---|-------|-----|-----------|---|--------------------------------------|
| 1 | 25 | 150 | 60 | 90sec; | 1.Preheating:25~150 , Time:60~90sec. |
| 2 | 245±5 | | 5±0.5sec; | 2.Peak Temp.:245±5 , Duration:5±0.5sec. | |
| 3 | | 2 | 10 | /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

260±5℃ 10±1 sec. Temp.:260±5℃ Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Typesec. ef367.5 325.8.7143 89 1 115.1657079 38 (unit	Units/包装数量	Dimension 包装尺寸 (unit: mm ³)
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