

/ Descriptions

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

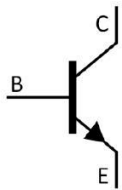
/ Features

f_T
High f_T , small C_{ob} and small C_{rb} .

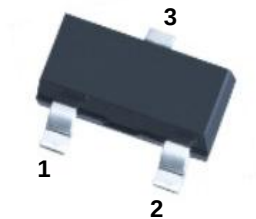
/ Applications

High frequency amplifier, oscillation and mixing amplification.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Emitter PIN 3 Collector

/ h_{FE} Classifications & Marking

h_{FE} Classifications Symbol	P	Q
h_{FE} Range	75 130	110 220
Marking	H1SP	H1SQ

/ Absolute Maximum Ratings(Ta=25)

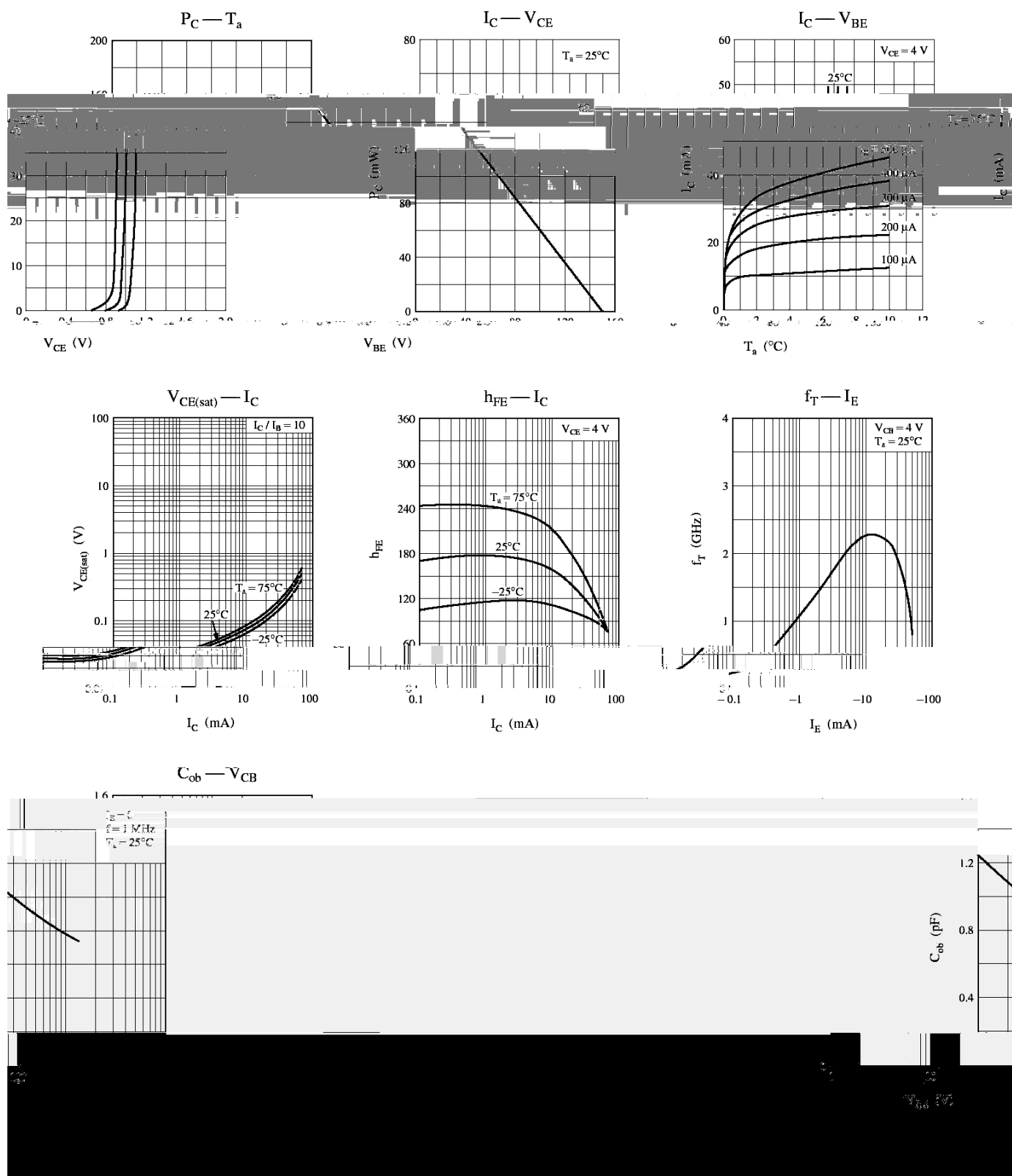
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	15	V
Collector to Emitter Voltage	V_{CEO}	10	V
Emitter to Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	50	mA
Collector Power Dissipation	P_C	150	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55 150	°C

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-emitter voltage	V_{CEO}	$I_C=2.0mA$ $I_B=0$	10			V
Emitter-base voltage	V_{EBO}	$I_C=10 A$ $I_B=0$	3.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=10V$ $I_E=0$			1.0	A
DC Current Gain	h_{FE}	$V_{CE}=4.0V$ $I_C=5.0mA$	75		220	
hFE ratio	* h_{FE}	$h_{FE}:V_{CE}=4.0V$ $I_C=100 A$	0.75		1.60	
		$h_{FE}:V_{CE}=4.0V$ $I_C=5.0mA$				
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=20mA$ $I_B=4.0mA$			0.5	V
Transition Frequency	f_T	$V_{CE}=4.0V$ $I_C=-5.0mA$ $f=200MHz$	1.4	1.9	2.5	GHz
Collector output capacitance	C_{ob}	$V_{CB}=4.0V$ $I_E=0$, $f=1.0MHz$		1.4		pF
Reverse transfer capacitance (Common emitter)	C_{rb}	$V_{CB}=4.0V$ $I_E=0$, $f=1.0MHz$		0.45		pF
Collector-base parameter	$r_{bb'}C_c$	$V_{CB}=4.0V$ $I_C=5.0mA$ $f=31.9MHz$		11		ps

* $h_{FE} = h_{FE2}/h_{FE1}$

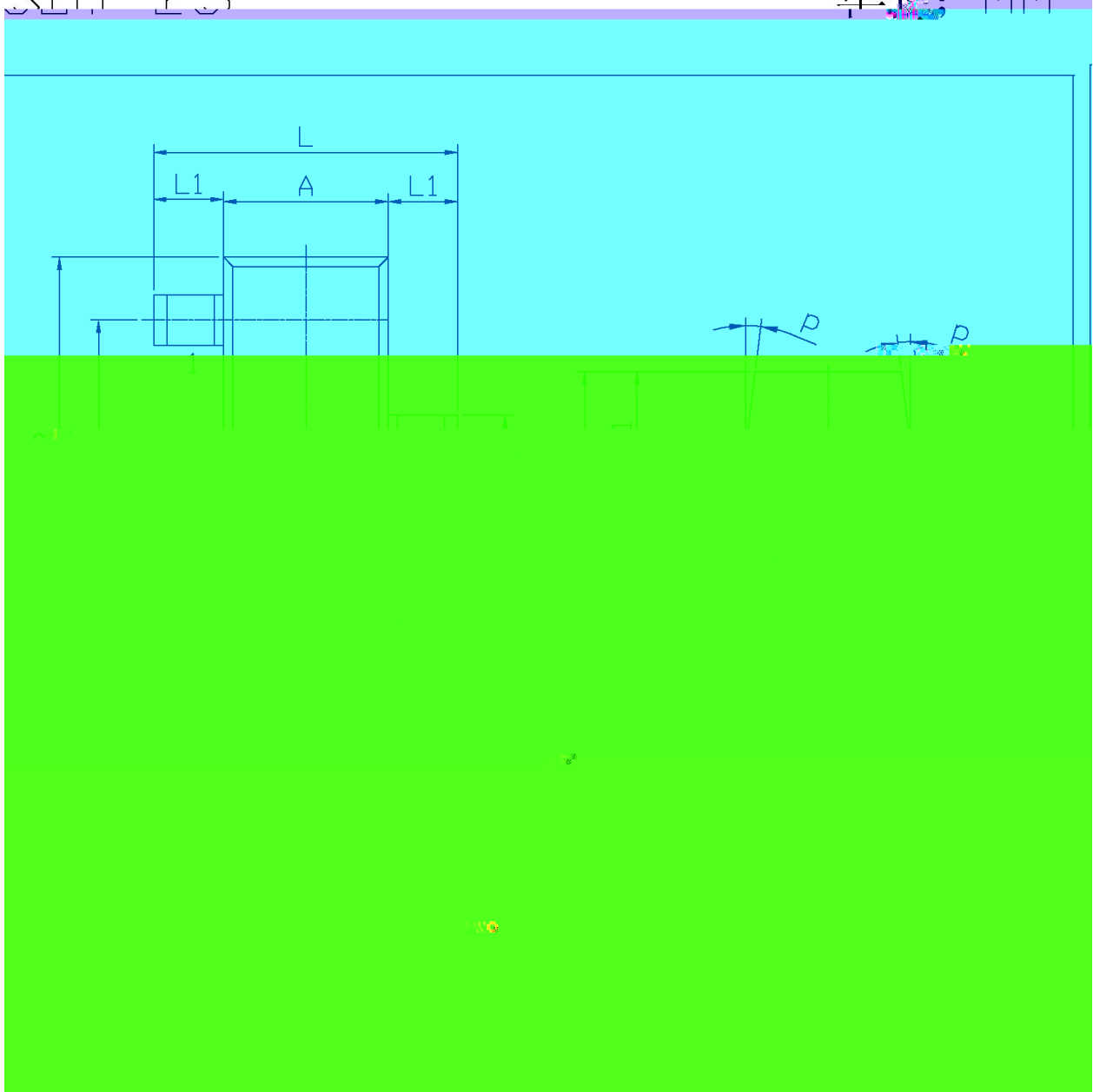
/ Electrical Characteristic Curve



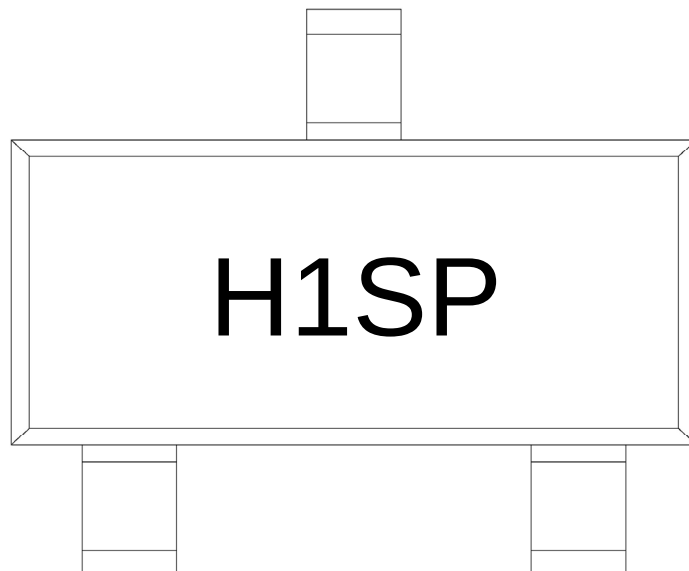
/ Package Dimensions

SOT-23

单位: mm



/ Marking Instructions



H

1S

P h_{FE}

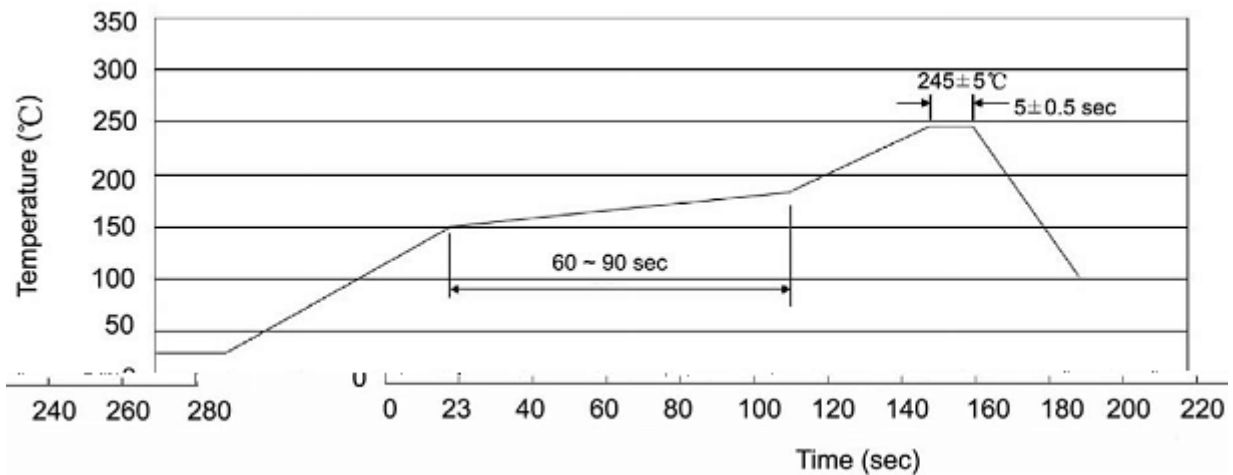
Note:

H Company Code

1S Product Type Code

P h_{FE} Classifications Symbol 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°C 10±1 sec. Temp.:260±5°C Time:10±1 sec

/ **Packaging SPEC.**

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	只 卷盘	卷盘 盒	只 盒	盒 箱	只 箱		盒	箱

/ **Notices**