

/ Descriptions

Silicon NPN transistor in a SOT-23 Plastic Package.

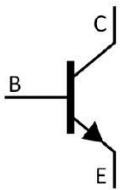
/ Features

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)

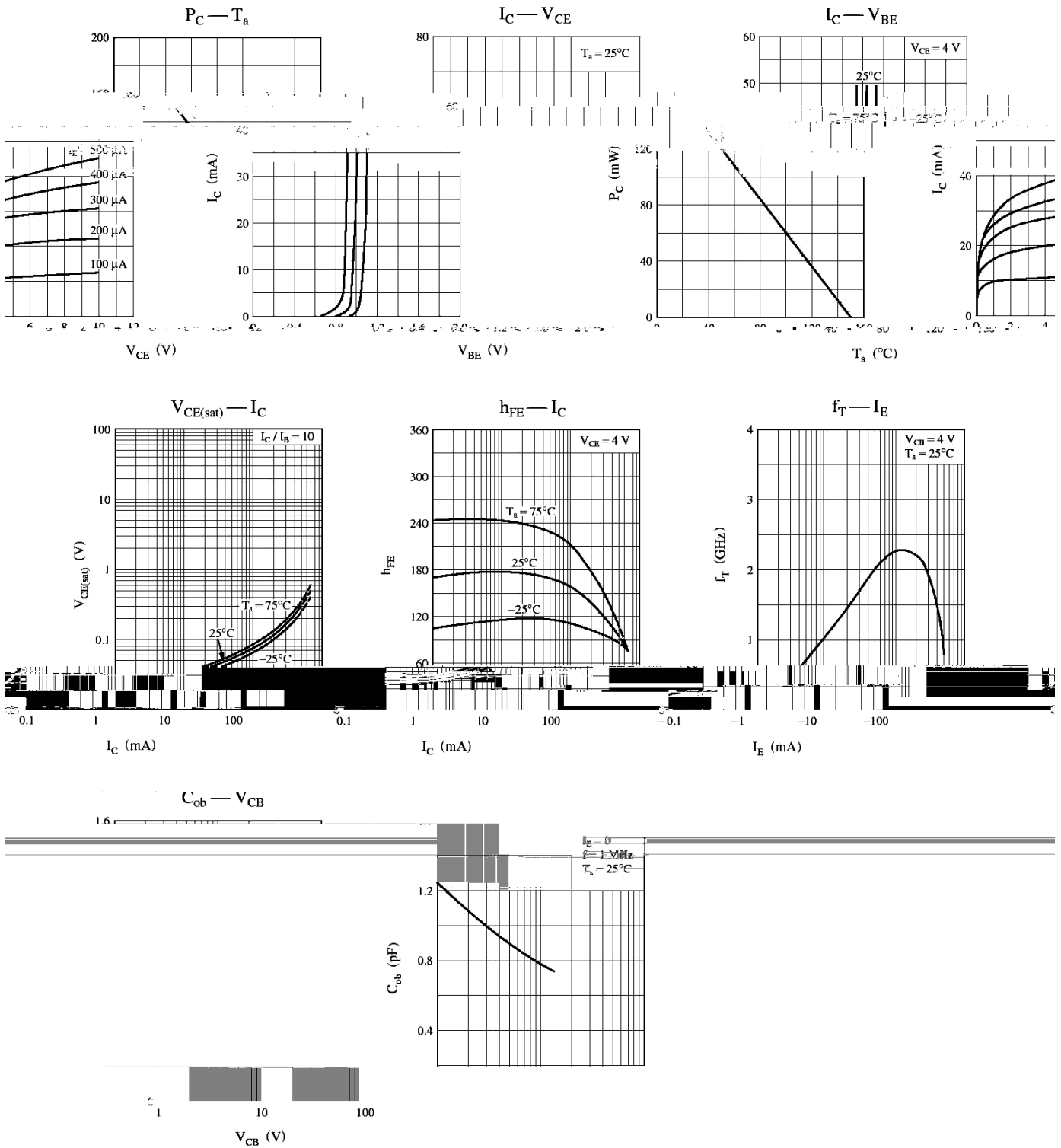
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	15	V
Collector to Emitter Voltage	V_{CEO}	10	V
Emitter to Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	50	mA
Collector Power Dissipation	P_C	150	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55 150	°C

/ 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

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

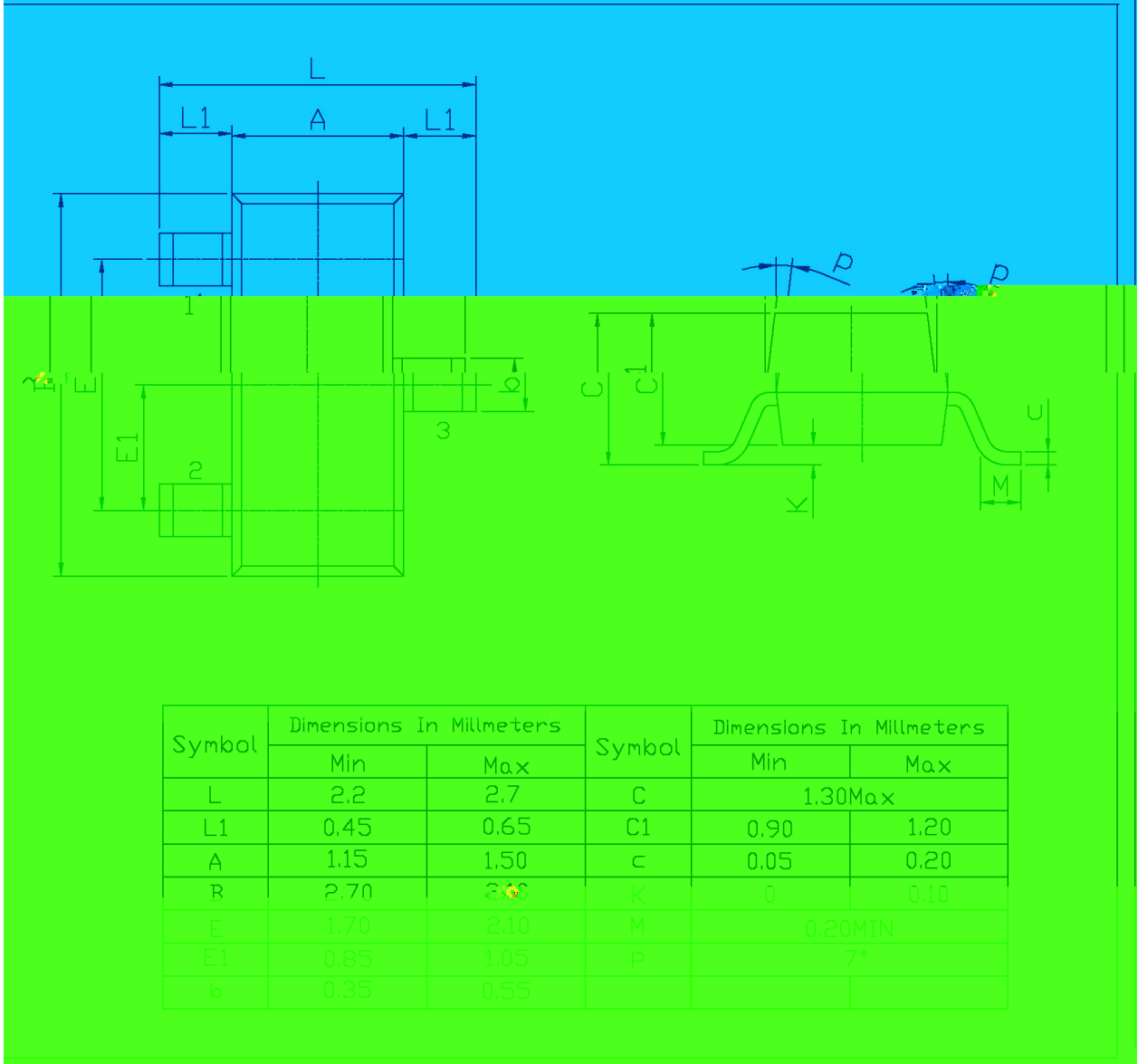
/ Electrical Characteristic Curve



/ Package Dimensions

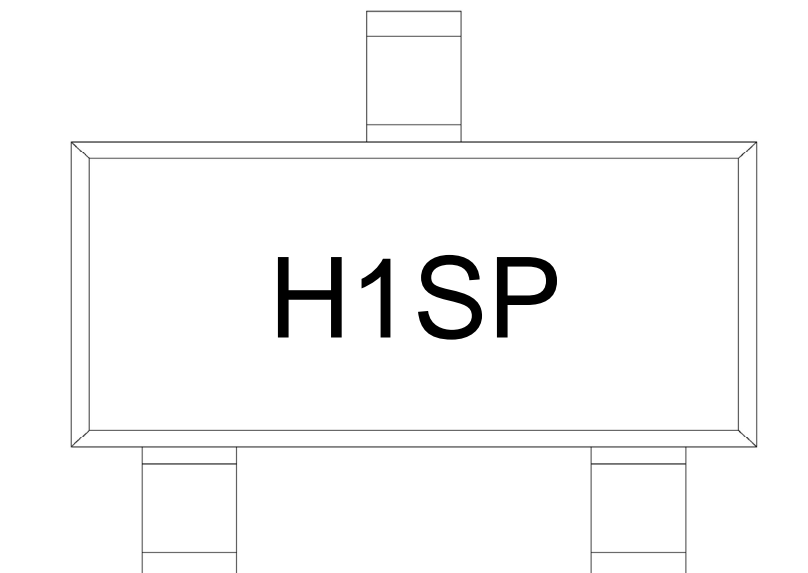
SOT-23

单位: mm



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	3.00	K	0	0.10
E	1.70	2.10	M	0.20MIN	
E1	0.85	1.05	P	7°	
b	0.35	0.55			

/ Marking Instructions



h_{FE}

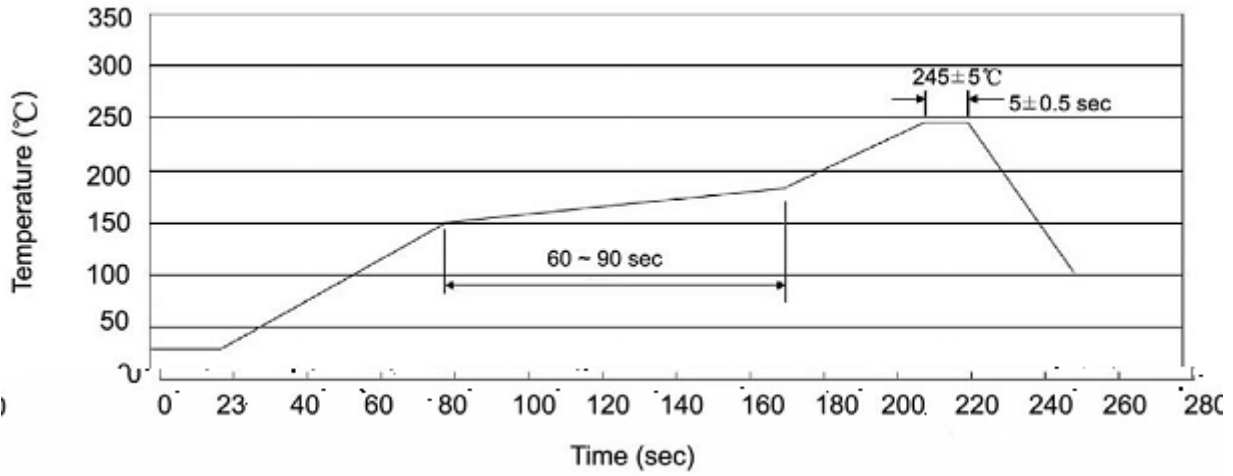
Note:

Company Code

Product Type Code

h_{FE} Classifications Symbol Code

() /



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