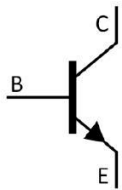


SOT-23 NPN Silicon NPN transistor in a SOT-23 Plastic Package.

High f_T , small NF.

High frequency amplifier applications.

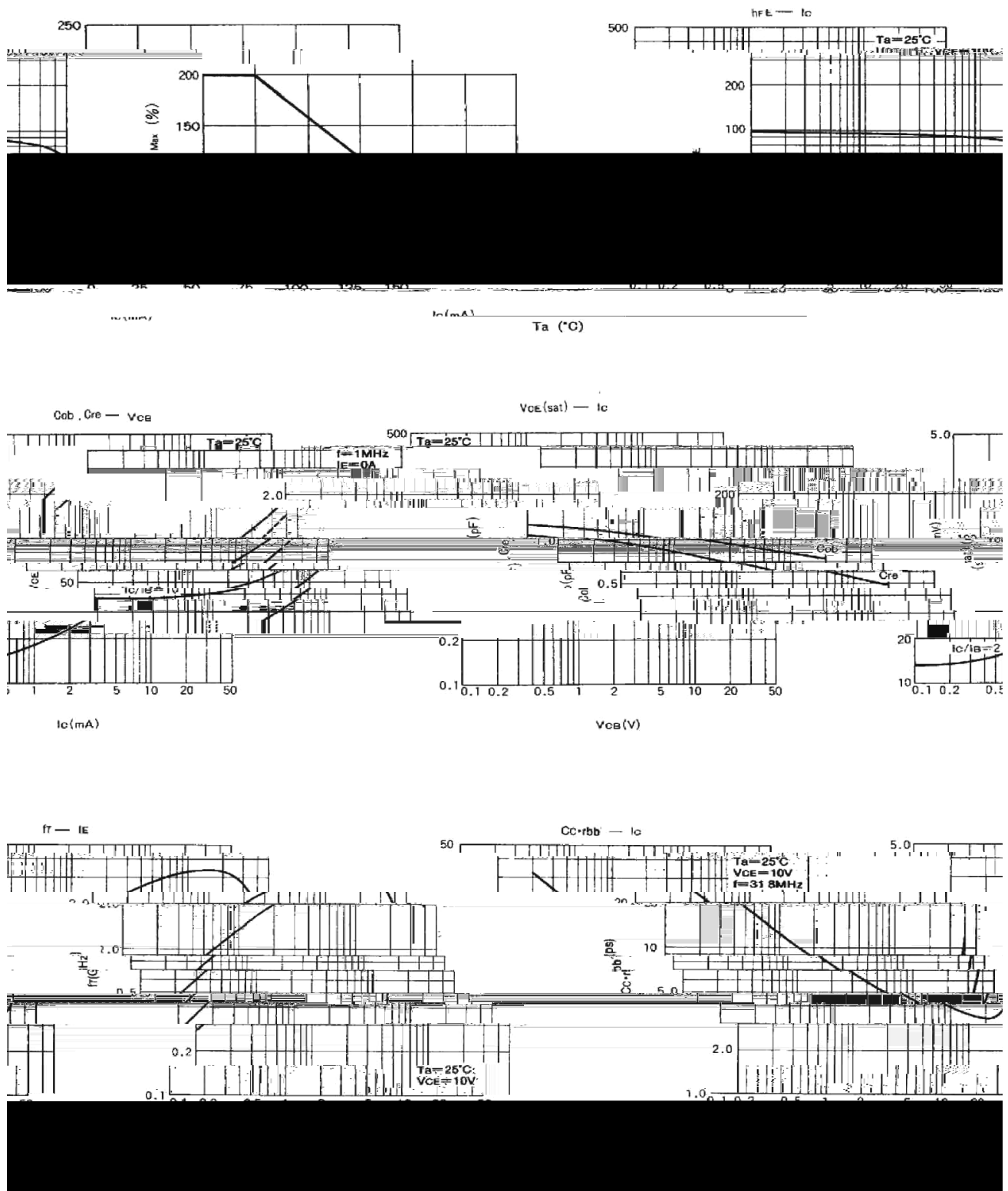


PIN1 Base PIN 2 Emitter PIN 3 Collector

h_{FE} Classifications Symbol	N	P
h_{FE} Range	56~120	82~180
Marking	HADN	HADP

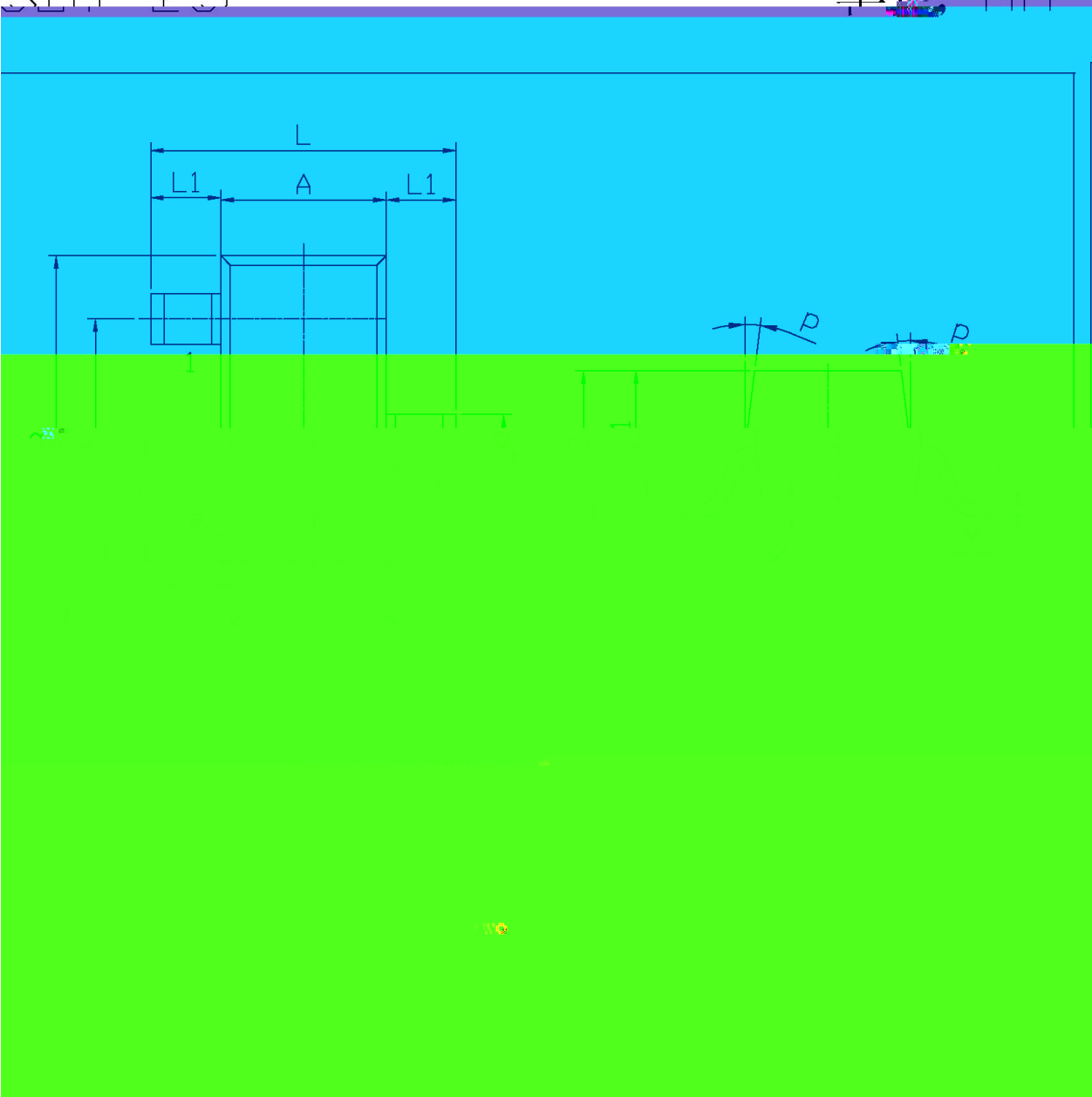
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	20	V
Collector to Emitter Voltage	V_{CEO}	11	V
Emitter to Base Voltage	V_{EBO}	3.0	V
Collector Current	I_C	50	mA
Collector Power Dissipation	P_C	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C

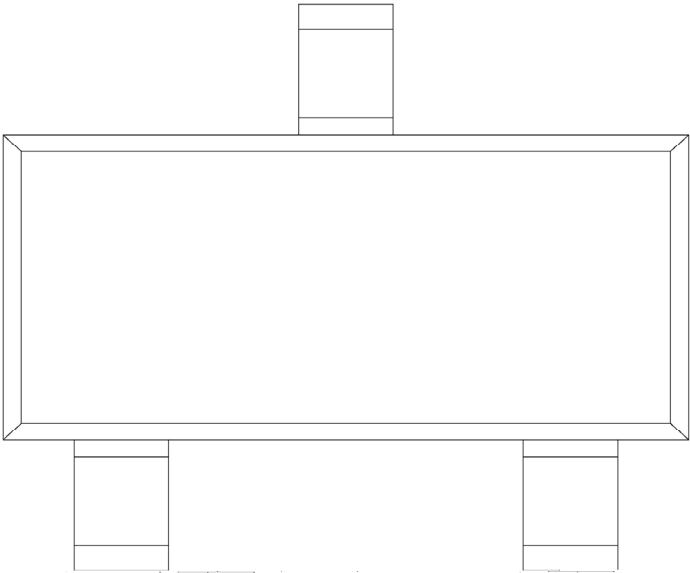
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C=10\text{ A}$	20			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=1.0\text{mA}$	11			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=10\text{ A}$	3.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=10\text{V}$			0.5	A
Emitter Base Cut-Off Current	I_{EBO}	$V_{EB}=2.0\text{V}$			0.5	A
DC Current Gain	h_{FE}	$V_{CE}=10\text{V}$ $I_C=5.0\text{mA}$	56		180	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=10\text{mA}$ $I_B=5.0\text{mA}$			0.5	V
Transition Frequency	f_T	$V_{CE}=10\text{V}$ $I_C=10\text{mA}$ $f=500\text{MHz}$	1.4	3.2		GHz
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}$ $I_E=0$ $f=1.0\text{MHz}$		0.8	1.5	pF
Collector to Base Time Constant	$C_{C,rb\beta'}$	$V_{CB}=10\text{V}$ $I_C=10\text{mA}$ $f=31.8\text{MHz}$		4.0	12	pS
Noise Figure	NF	$V_{CB}=6.0\text{V}$ $I_C=2.0\text{mA}$ $f=500\text{MHz}$ $R_g=50$		3.5		dB



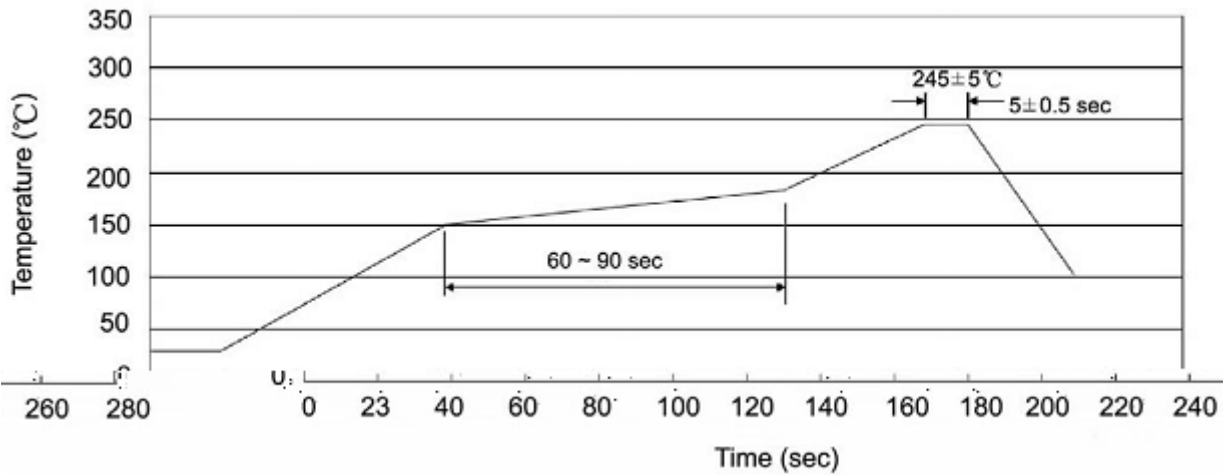
SOT-23

单位: mm





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.

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

/ 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	6	180,000	7" x8	180×120×180	390×385×205