

2SC3838K

Rev.F Apr.-2017

/ Descriptions

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

/ Features

High f_T , small NF.

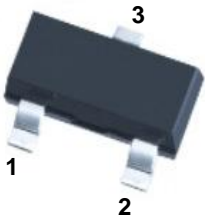
/ Applications

High frequency amplifier applications.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Emitter PIN 3 Collector

/ h_{FE} Classifications & Marking

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

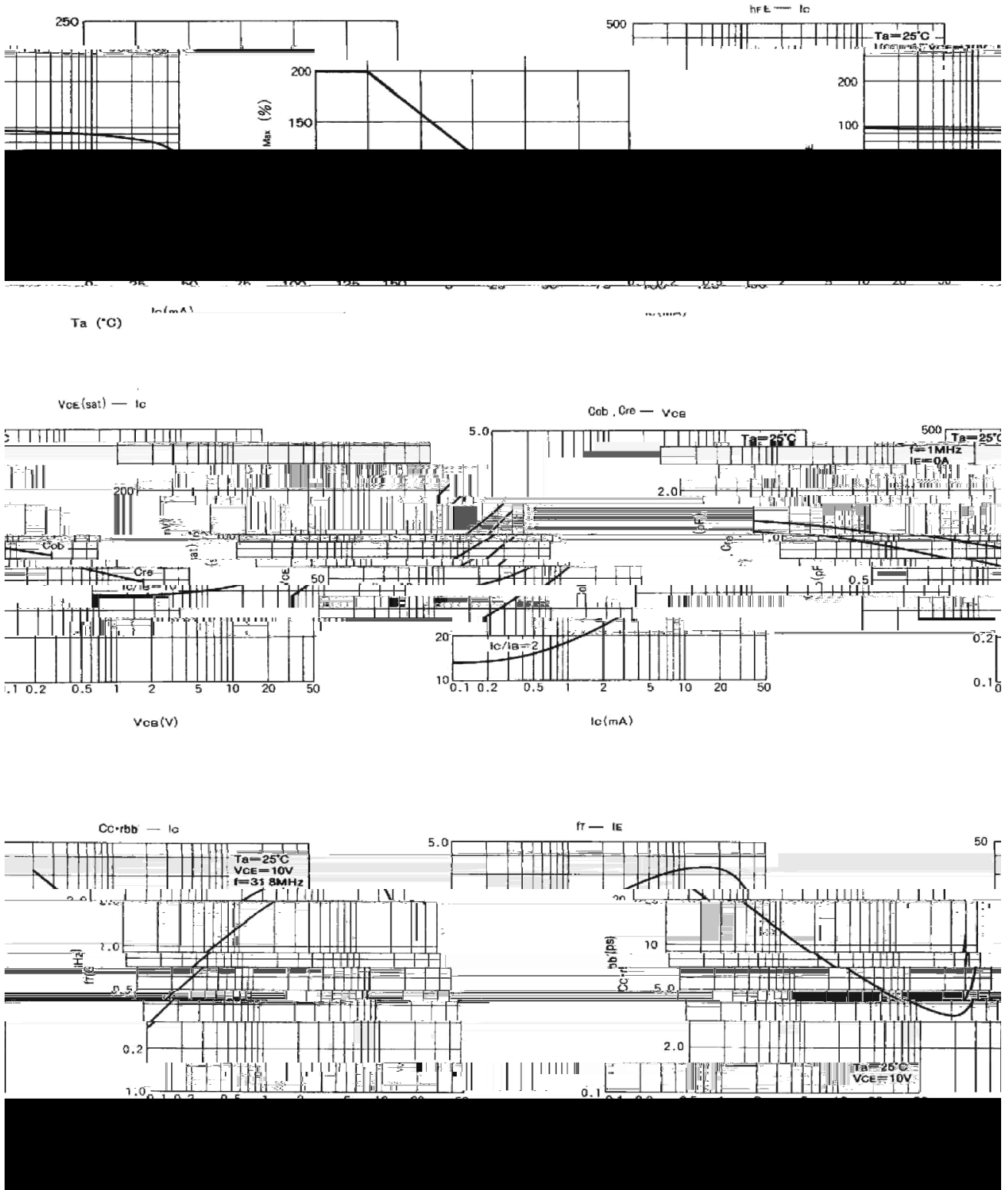
/ Absolute Maximum Ratings(Ta=25)

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

/ Electrical Characteristics(Ta=25)

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

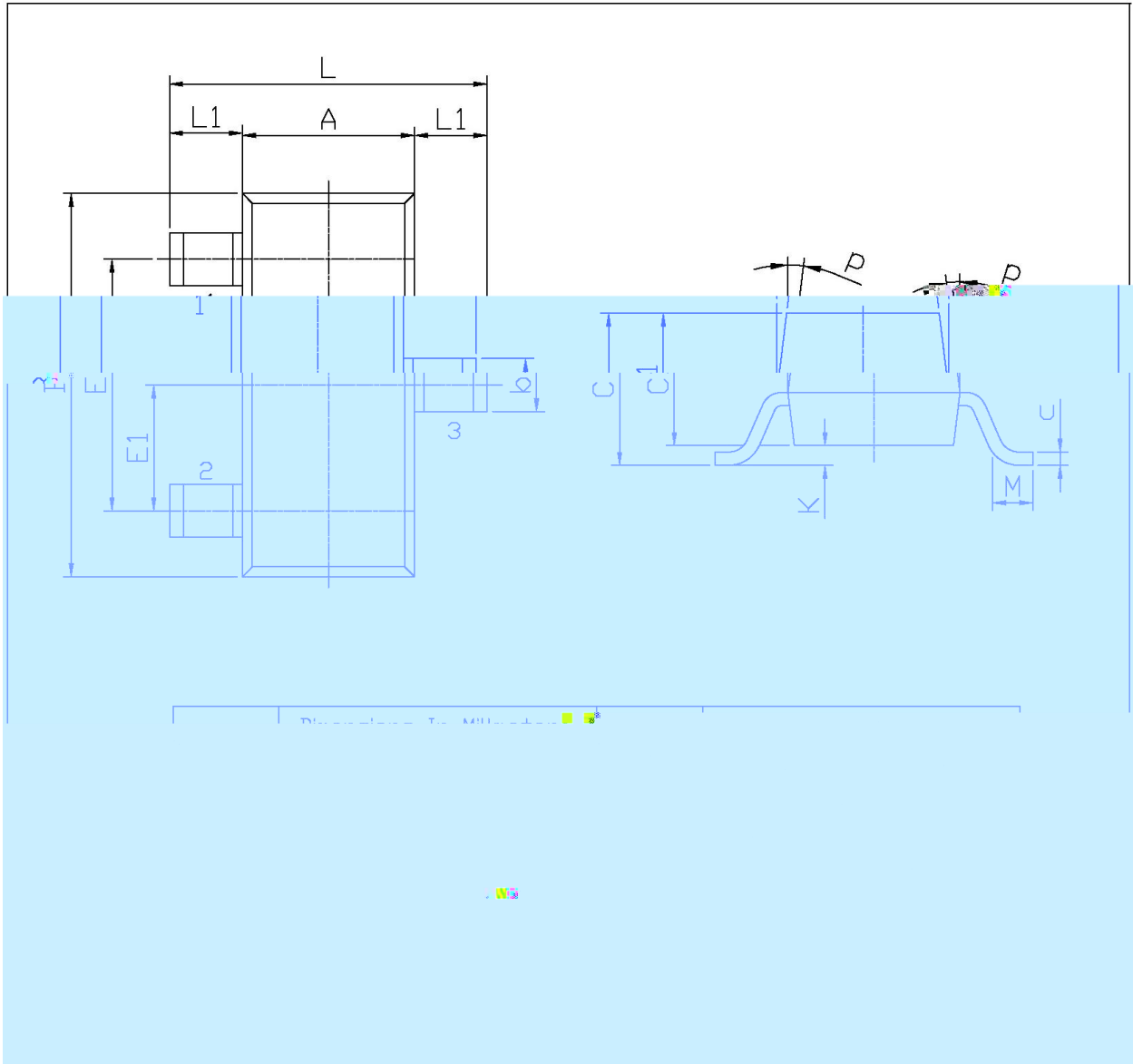
/ Electrical Characteristic Curve

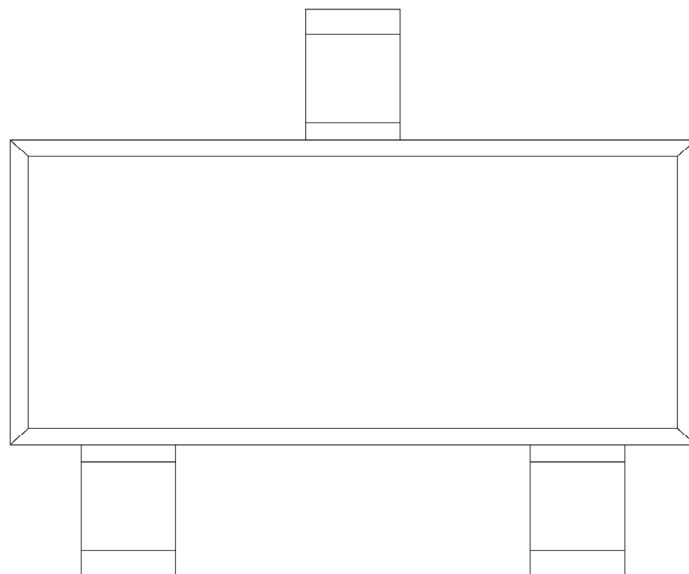


/ Package Dimensions

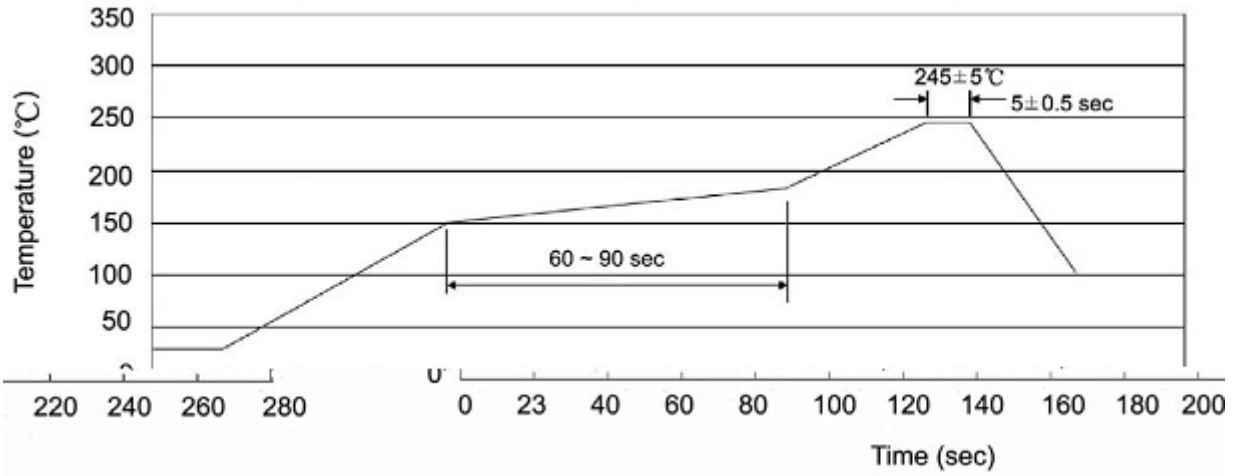
SOT-23

单位: mm





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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