

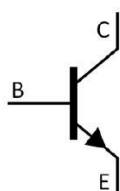
/ Descriptions

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

/ Features

High frequency.

UHF frequency converter.



PIN1 Base PIN 2 Emitter PIN 3 Collector

/ h_{FE} Classifications & Marking

h_{FE} Range	30` 200
Marking	HEC

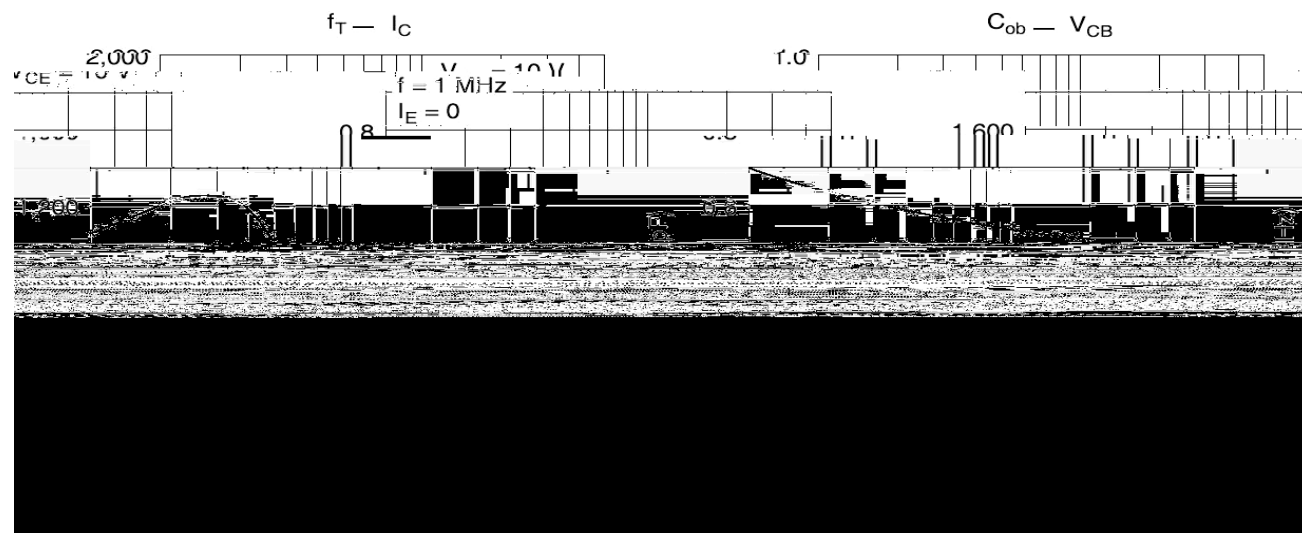
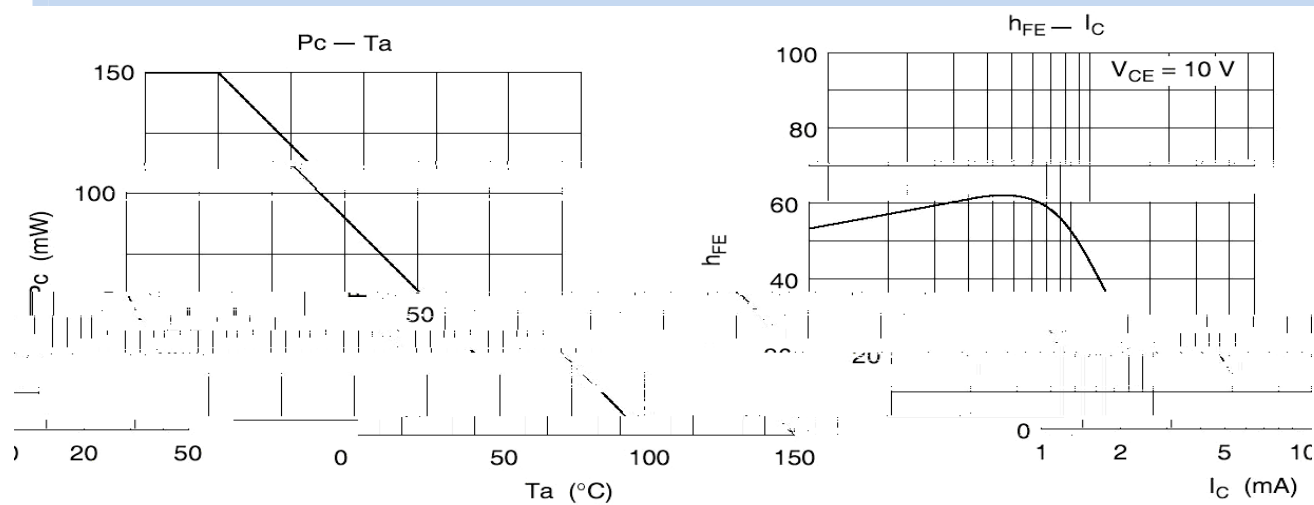
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	30	V
Collector to Emitter Voltage	V_{CEO}	25	V
Emitter to Base Voltage	V_{EBO}	4.0	V
Collector Current	I_C	20	mA
Collector Power Dissipation	P_C	150	mW
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55~150	

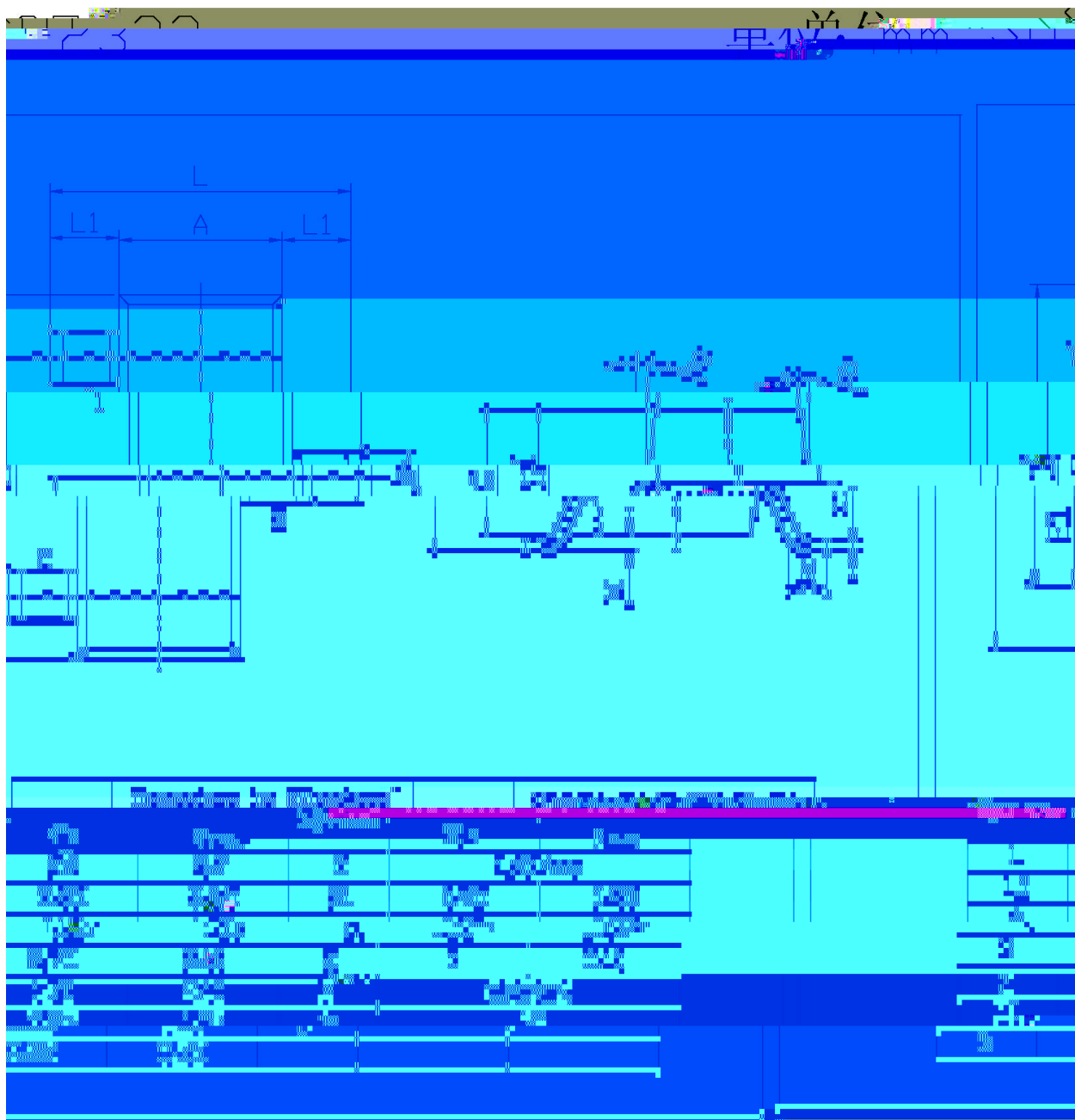
/ Electrical Characteristics(Ta=25)

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}	$I_C=10mA$ $R_{BE}=\infty$	25			V
Emitter-Base Breakdown Voltage	V_{EBO}	$I_E=10\mu A$ $I_C=0$	4.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=10V$ $I_E=0$			0.5	μA
DC Current Gain	h_{FE}	$V_{CE}=10V$ $I_C=3.0mA$	30	60	200	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10mA$ $I_B=1.0mA$			5.0	V
Transition Frequency	f_T	$V_{CE}=10V$ $I_C=5.0mA$	700	1000		MHz
Collector Output Capacitance	C_{ob}	$V_{CE}=10V$ $I_E=0$ $f=1.0MHz$		0.5	0.8	pF
Conversion Gain	CG	$V_{CC}=12V$ $I_C=1.0mA$ $f=900MHz$ $f_{OSC}=930MHz(0dBm)$ $f_{out}=30MHz$		7.0		dB
Noise Figure	NF	$V_{CC}=12V$ $I_C=1.0mA$ $f=900MHz$ $f_{OSC}=930MHz(0dBm)$ $f_{out}=30MHz$		10		dB

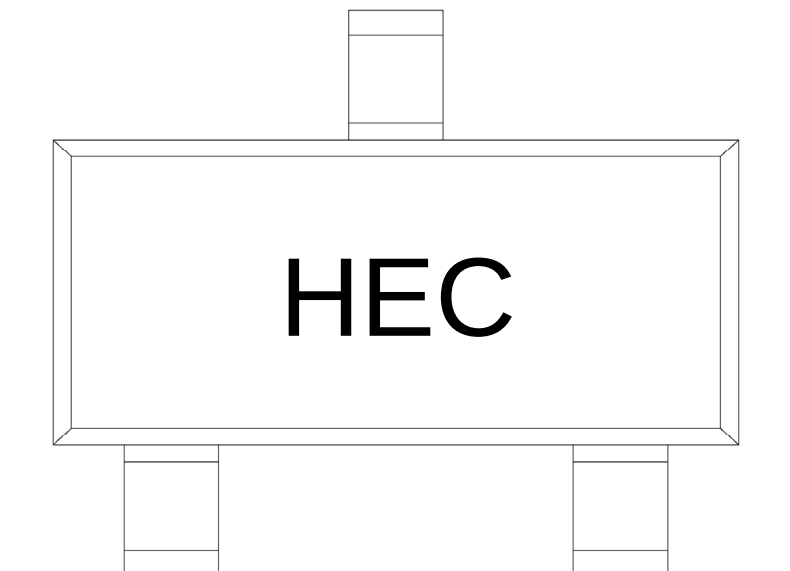
I Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



H

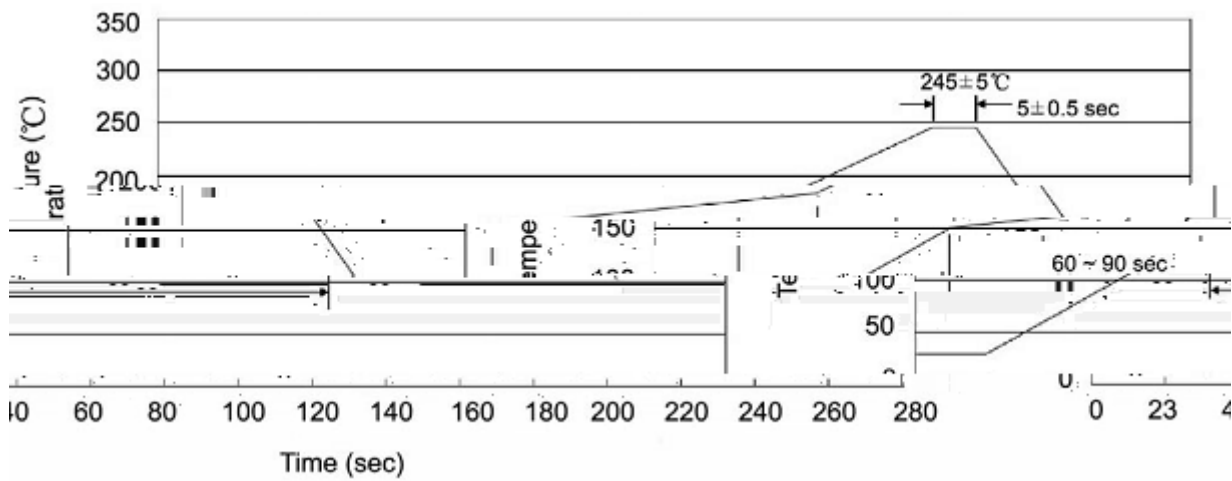
EC

Note:

H Company Code

EC Product Type Code

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



Note:

- 1

25 150

60 90sec;
- 2

245±5

5±0.5sec;
- 3

2 10 /sec.
- 1.Preheating:25~150

, Time:60~90sec.
- 2.Peak Temp.:245±5

, Duration:5±0.5sec.
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 Type	Units					Dimension (unit mm ³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
SOT-23	3,000	10	30,000	6	180,000	7 ρ ×8	180×120×180	390×385×205