/ Descriptions

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

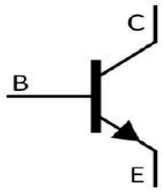
/ Features

High current.

/ Applications

General power amplifier.

/ Equivalent Circuit



/ Pinning



PIN1 Base PIN 2 Emitter PIN 3 Collector

/ h_{FE} Classifications & Marking

h_{FE} Range	100 300

Marking

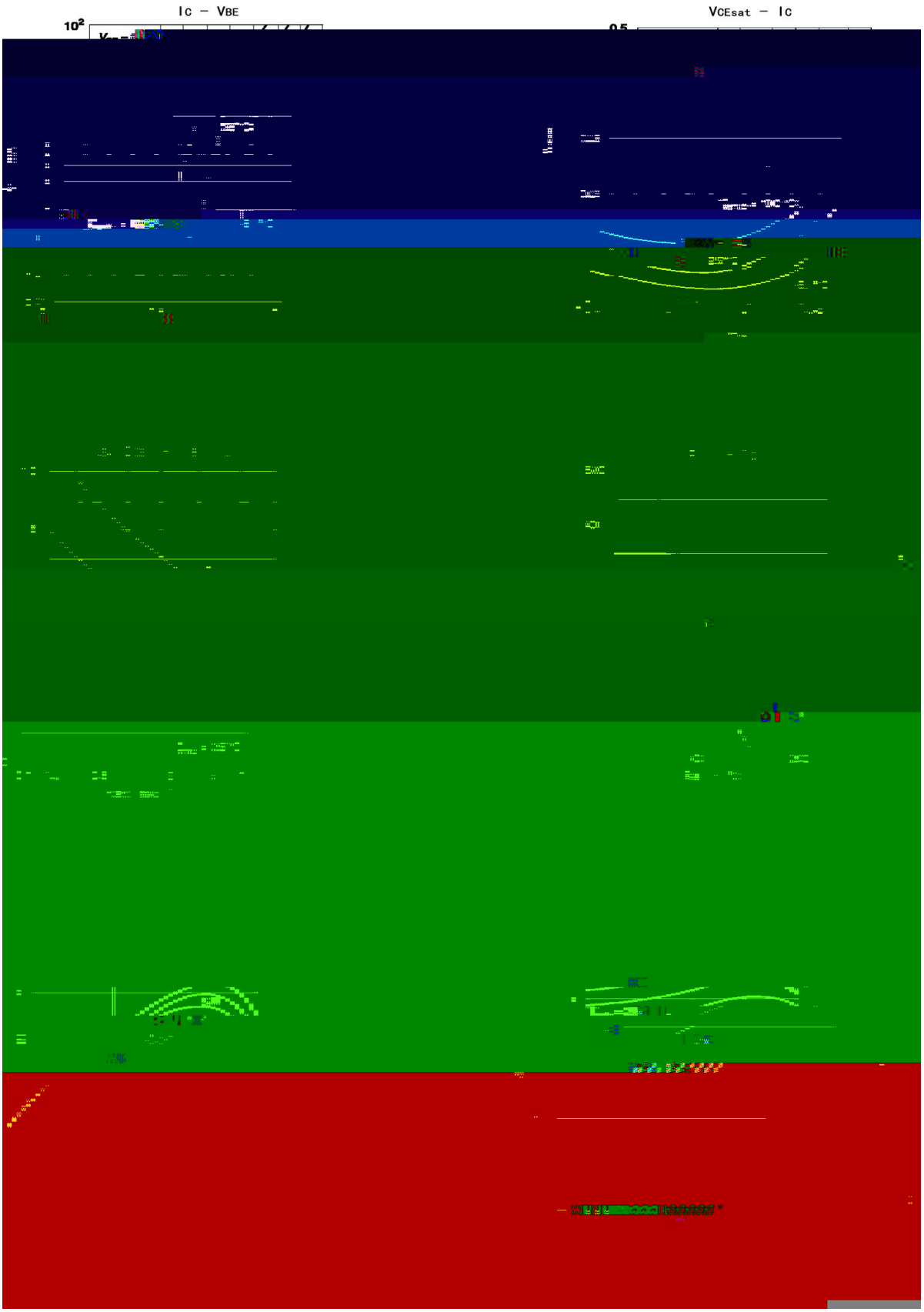
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	120	V
Collector to Emitter Voltage	V_{CEO}	80	V
Emitter to Base Voltage	V_{EBO}	7.0	V
Collector Current - Continuous	I_C	500	mA
Peak Collector Current - Continuous	I_{CM}	1.0	A
Collector Power Dissipation	P_C	350	mW
Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 150	

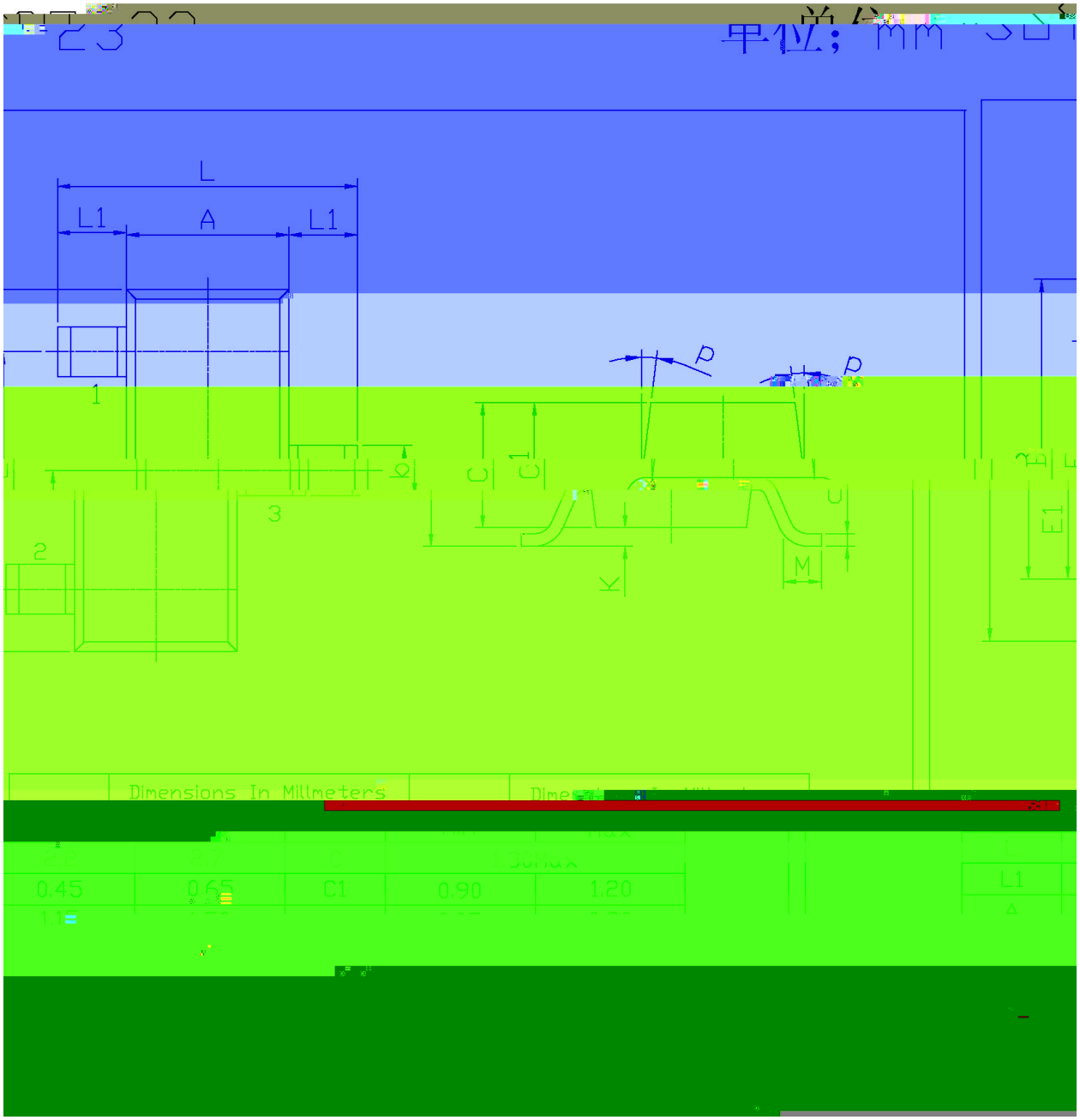
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	I_C=100μA I_E=0	120			V
Collector to Emitter Breakdown Voltage	V_{CEO}	I_C=30mA I_B=0	80			V
Emitter to Base Breakdown Voltage	V_{EBO}	I_E=100μA I_C=0	7.0			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=90V I_E=0			0.01	μA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=5.0V I_C=0			0.01	μA
DC Current Gain	$h_{FE(1)}$	V_{CE}=10V I_C=150mA	100		300	
	$h_{FE(2)}$	V_{CE}=10V I_C=500mA	50			
	$h_{FE(3)}$	V_{CE}=10V I_C=10mA	90			
	$h_{FE(4)}$	V_{CE}=10V I_C=0.1mA	50			
Collector to Emitter Saturation Voltage	$V_{CE(sat)(1)}$	I_C=150mA I_B=15mA			0.2	V
	$V_{CE(sat)(2)}$	I_C=500mA I_B=50mA			0.5	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=150mA I_B=15mA			1.1	V
Transition Frequency	f_T	V_{CE}=10V I_C=50mA f=1.0MHz	100			MHz
Collector Output Capacitance	C_{ob}	V_{CB}=10V I_E=0 f=1.0MHz			12	pF
Collector Input Capacitance	C_{ib}	V_{EB}=0.5V I_C=0, f=1.0MHz			60	pF
Noise Figure	NF	V_{CB}=10V I_C=100mA Rs=1KΩ f=1.0KHz			4.0	dB

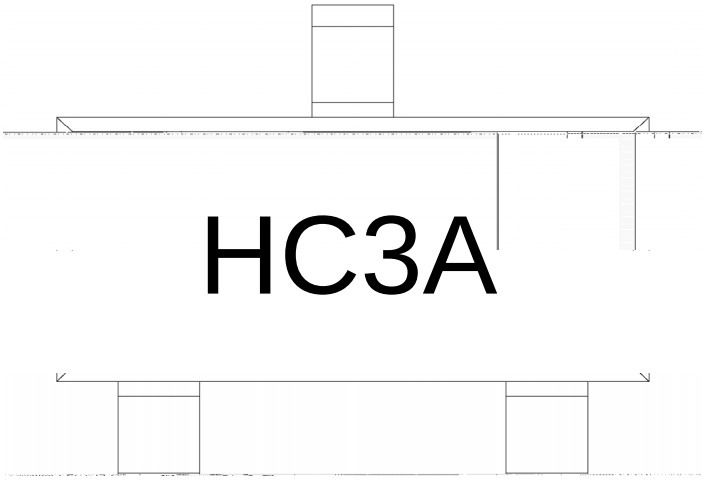
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



H

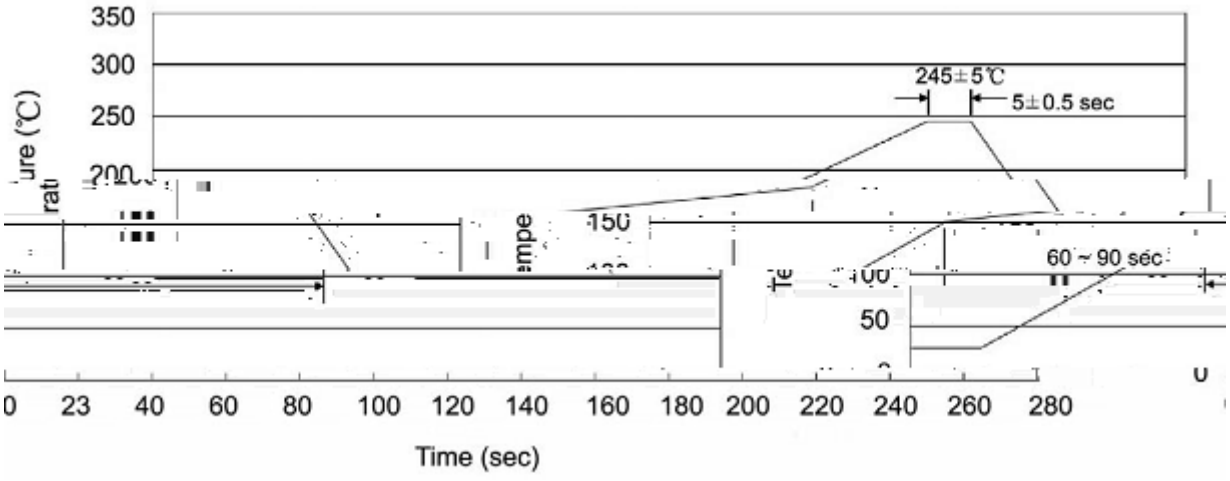
C3A

Note:

H: Company Code.

C3A: Product Type 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	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 ×8	180×120×180	390×385×205

/ Notices