

CMPT3019

Rev.F Apr.-2017

/ Descriptions

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

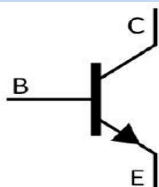
/ Features

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	

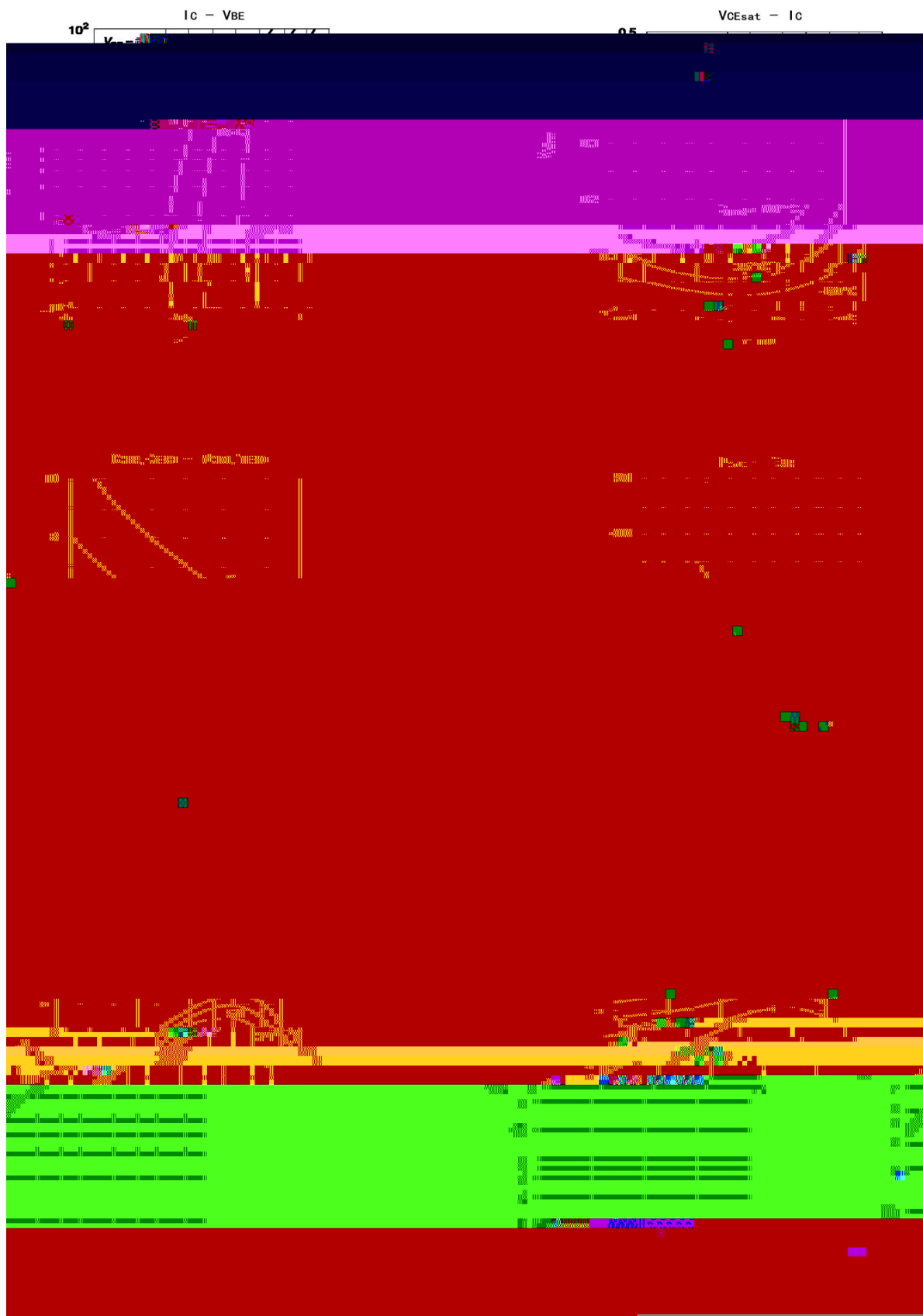

/ Absolute Maximum Ratings(Ta=25)

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	

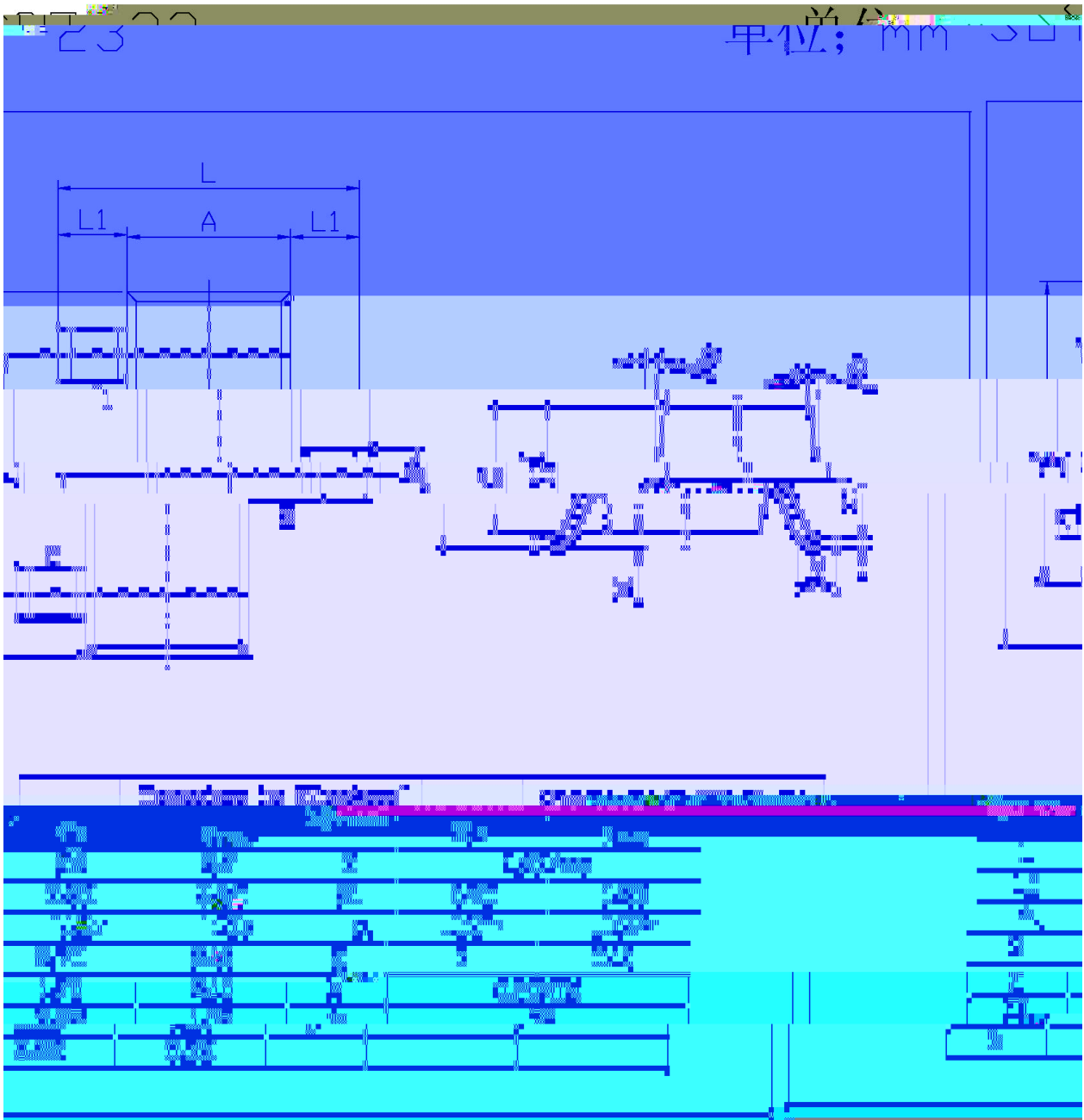
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	$I_C=100\mu A$ $I_E=0$	120			V
Collector to Emitter Breakdown Voltage	V_{CEO}	$I_C=30mA$ $I_B=0$	80			V
Emitter to Base Breakdown Voltage	V_{EBO}	$I_E=100\mu A$ $I_C=0$	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	$V_{CE}=10V$ $f=1.0MHz$ $I_C=50mA$	100			MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10V$ $f=1.0MHz$ $I_E=0$			12	pF
Collector Input Capacitance	C_{ib}	$V_{EB}=0.5V$ $f=1.0MHz$ $I_C=0,$			60	pF
Noise Figure	NF	$V_{CB}=10V$ $I_C=100mA$ $R_s=1K$ $f=1.0KHz$			4.0	dB

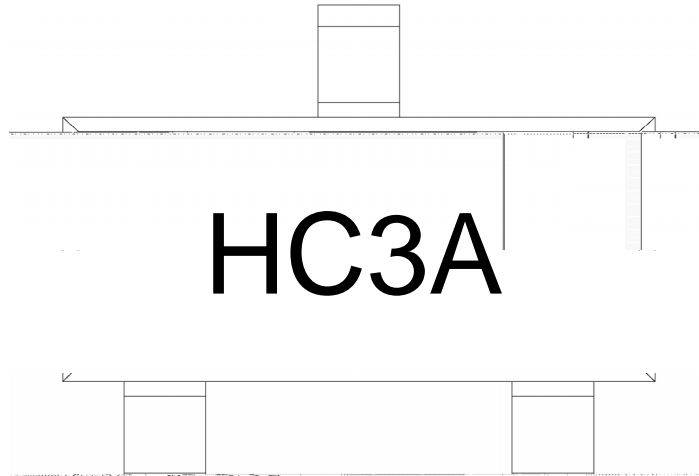
/ Electrical Characteristic Curve



/ Package Dimensions



/ Marking Instructions



H

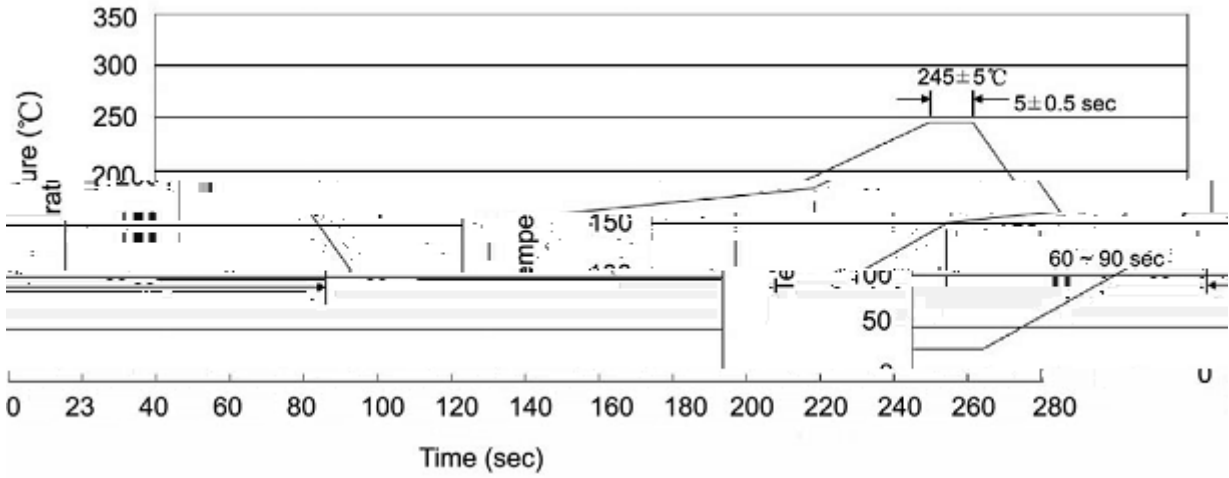
C3A

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