

# CMPT3019

Rev.E Mar.-2016

## 描述 / Descriptions

SOT-23 塑封封装 NPN 半导体三极管。Silicon NPN transistor in a SOT-23 Plastic Package.

## 特征 / Features

大电流。

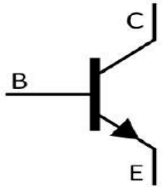
High current.

## 用途 / Applications

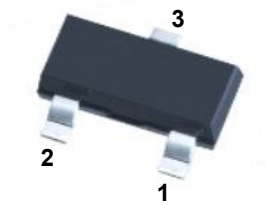
用于一般放大。

General power amplifier.

## 内部等效电路 / Equivalent Circuit



## 引脚排列 / Pinning



PIN1 : Emitter

PIN 2 : Base

PIN 3 : Collector

## 放大及印章代码 / $h_{FE}$ Classifications & Marking

$h_{FE}$ Range	100~300
Marking	HC3A

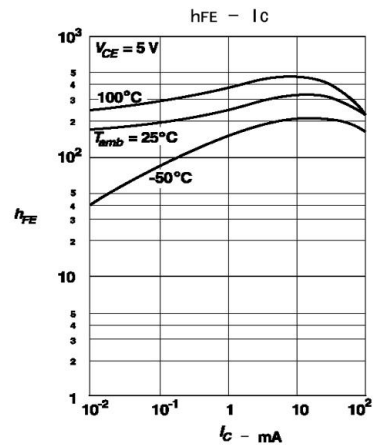
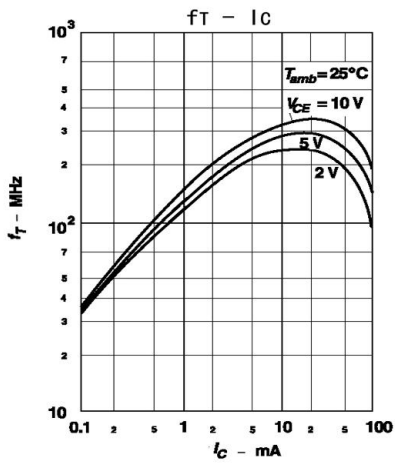
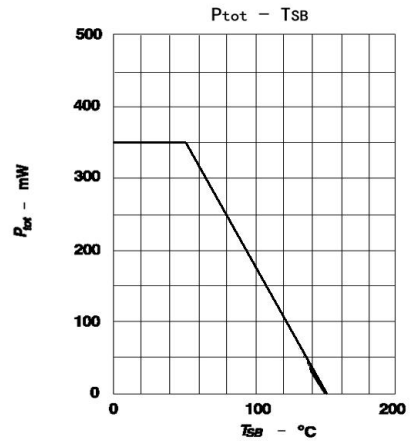
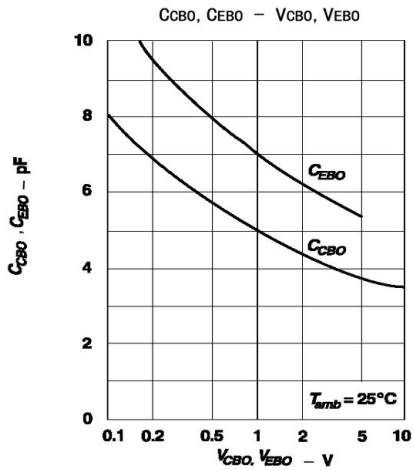
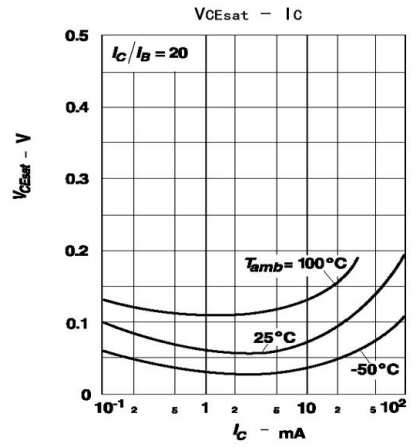
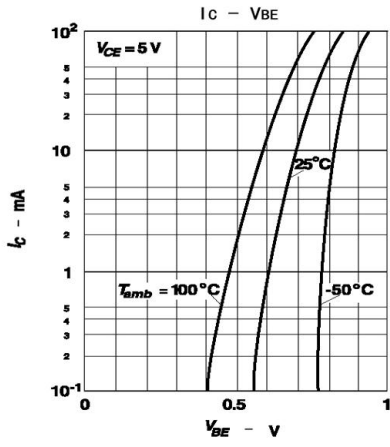
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V <sub>CBO</sub>	120	V
Collector to Emitter Voltage	V <sub>CEO</sub>	80	V
Emitter to Base Voltage	V <sub>EBO</sub>	7.0	V
Collector Current - Continuous	I <sub>C</sub>	500	mA
Peak Collector Current - Continuous	I <sub>CM</sub>	1.0	A
Collector Power Dissipation	P <sub>C</sub>	350	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55 ~ 150	°C

**电性能参数 / Electrical Characteristics(Ta=25°C)**

参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Collector to Base Breakdown Voltage	V <sub>CBO</sub>	I <sub>C</sub> =100μA I <sub>E</sub> =0	120			V
Collector to Emitter Breakdown Voltage	V <sub>CEO</sub>	I <sub>C</sub> =30mA I <sub>B</sub> =0	80			V
Emitter to Base Breakdown Voltage	V <sub>EBO</sub>	I <sub>E</sub> =100μA I <sub>C</sub> =0	7.0			V
Collector Cut-Off Current	I <sub>CBO</sub>	V <sub>CB</sub> =90V I <sub>E</sub> =0			0.01	μA
Emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =5.0V I <sub>C</sub> =0			0.01	μA
DC Current Gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =10V I <sub>C</sub> =150mA	100		300	
	h <sub>FE(2)</sub>	V <sub>CE</sub> =10V I <sub>C</sub> =500mA	50			
	h <sub>FE(3)</sub>	V <sub>CE</sub> =10V I <sub>C</sub> =10mA	90			
	h <sub>FE(4)</sub>	V <sub>CE</sub> =10V I <sub>C</sub> =0.1mA	50			
Collector to Emitter Saturation Voltage	V <sub>CE(sat)(1)</sub>	I <sub>C</sub> =150mA I <sub>B</sub> =15mA			0.2	V
	V <sub>CE(sat)(2)</sub>	I <sub>C</sub> =500mA I <sub>B</sub> =50mA			0.5	V
Base to Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =150mA I <sub>B</sub> =15mA			1.1	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =10V f=1.0MHz I <sub>C</sub> =50mA	100			MHz
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V f=1.0MHz I <sub>E</sub> =0			12	pF
Collector Input Capacitance	C <sub>ib</sub>	V <sub>EB</sub> =0.5V f=1.0MHz I <sub>C</sub> =0,			60	pF
Noise Figure	NF	V <sub>CB</sub> =10V I <sub>C</sub> =100mA Rs=1KΩ f=1.0KHz			4.0	dB

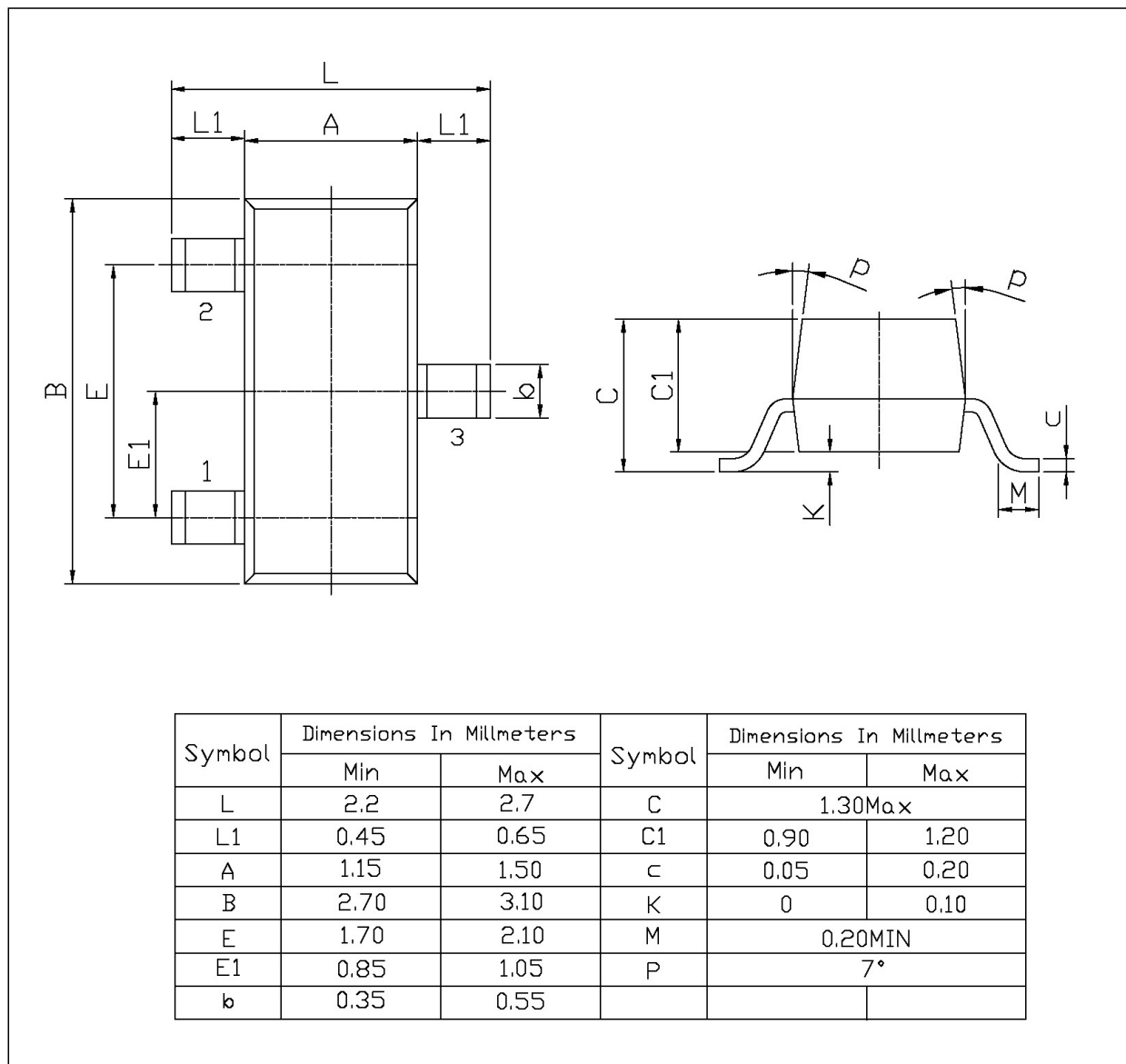
电参数曲线图 / Electrical Characteristic Curve



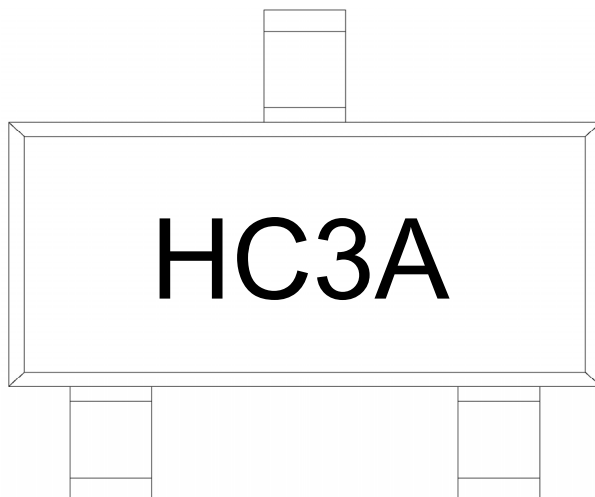
外形尺寸图 / Package Dimensions

SOT-23

单位: mm



印章说明 / Marking Instructions



说明：

H： 为公司代码

C3A： 为型号代码

Note:

H: Company Code.

C3A: Product Type Code.

**回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)**



说明：

- 1、预热温度 25~150°C，时间 60~90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2~10°C/sec.

Note:

- 1.Preheating:25~150°C, Time:60~90sec.
- 2.Peak Temp.:245±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

**耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions**

温度：260±5°C      时间：10±1 sec.

Temp.:260±5°C      Time:10±1 sec

**包装规格 / Packaging SPEC.**

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm <sup>3</sup> )		
	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	8	240,000	7" x8	180×120×180	385×257×392

**使用说明 / Notices**