

**描述 / Descriptions**

SOT-223 塑封封装 NPN 半导体三极管。Silicon NPN transistor in a SOT-223 Plastic Package.

**特征 / Features**

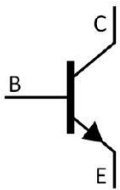
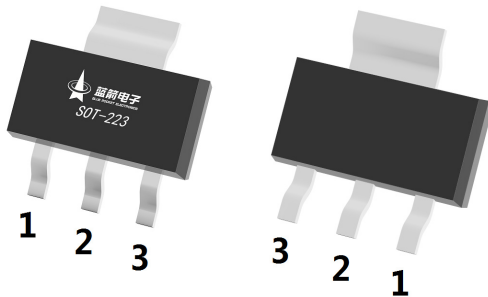
大电流、低电压，符合 AEC-Q101 标准高可靠性要求，无卤产品。

High current, Low voltage, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

**用途 / Applications**

用于中功率开关电路，满足汽车应用的严格要求。

Medium Power switching applications, Meet the stringent requirements of automotive applications.

**内部等效电路 / Equivalent Circuit****引脚排列 / Pinning**

PIN1 : Base

PIN 2 : Collector

PIN 3 : Emitter

**放大及印章代码 / h<sub>FE</sub> Classifications & Marking**

见印章说明。

See Marking Instructions.

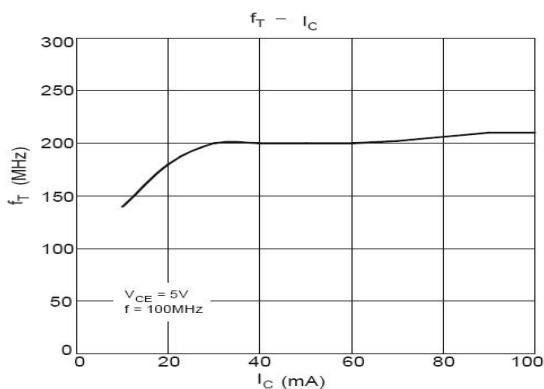
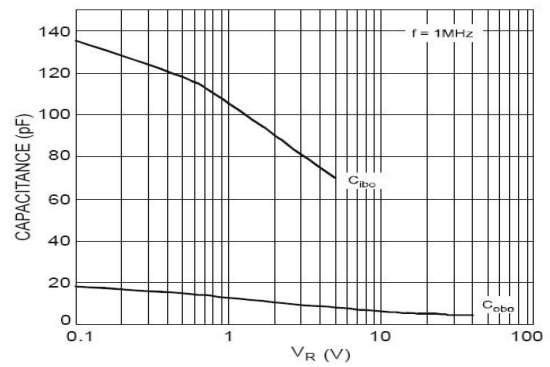
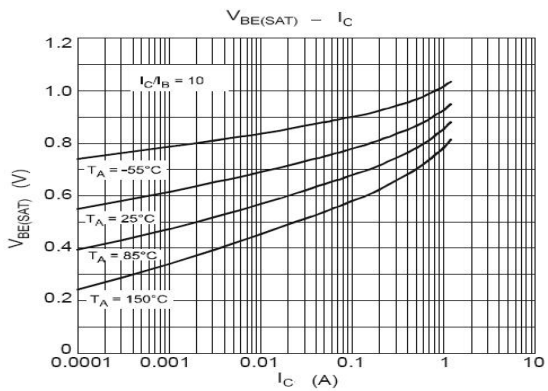
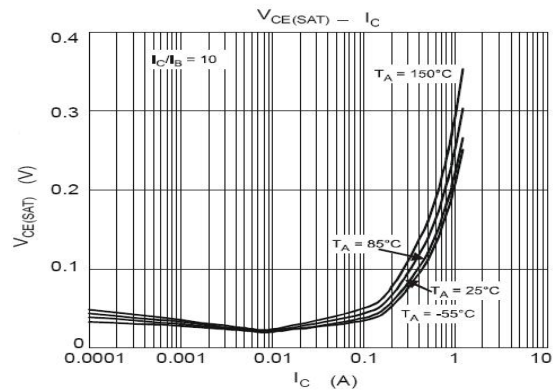
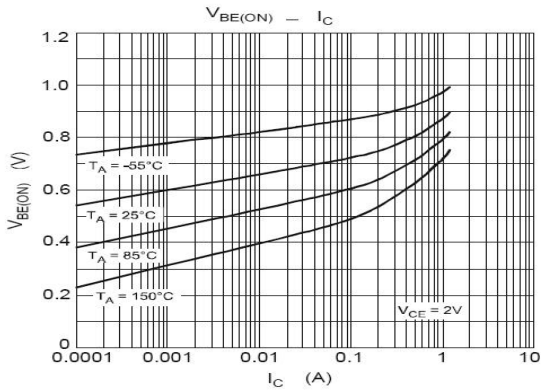
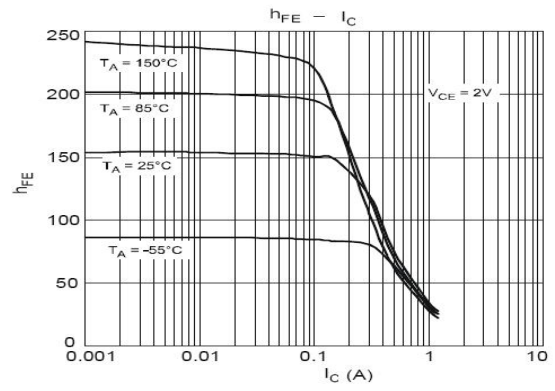
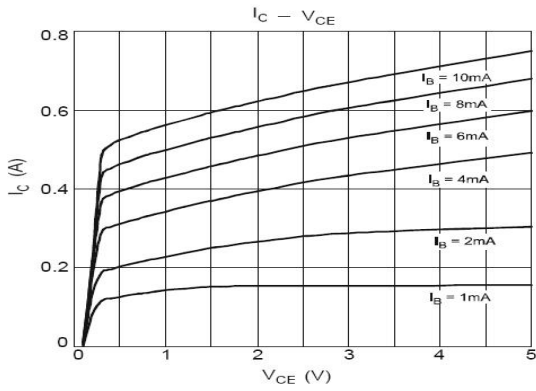
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V <sub>CBO</sub>	100	V
Collector to Emitter Voltage	V <sub>CEO</sub>	80	V
Emitter to Base Voltage	V <sub>EBO</sub>	5.0	V
Collector Current - Continuous	I <sub>C</sub>	1.0	A
Peak Pulse Collector Current	I <sub>CM</sub>	1.5	A
Peak Pulse Base Current	I <sub>BM</sub>	200	mA
Power Dissipation	P <sub>D</sub>	1.2	W
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	105	K/W
Thermal Resistance, Junction to Leads	R <sub>θJS</sub>	13	K/W
Junction Temperature	T <sub>j</sub>	150	°C
Operating and Storage Temperature Range	T <sub>stg</sub> T <sub>amb</sub>	-65~150	°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 Cut-Off Current	I <sub>CBO</sub>	V <sub>CB</sub> =30V I <sub>E</sub> =0			100	nA
		V <sub>CB</sub> =30V I <sub>E</sub> =0 T <sub>j</sub> =125°C			10	μA
Emitter Base Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =5.0V I <sub>C</sub> =0			100	nA
DC Current Gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =2.0V I <sub>C</sub> =5mA	25			
	h <sub>FE(2)</sub>	V <sub>CE</sub> =2.0V I <sub>C</sub> =150mA	100		250	
	h <sub>FE(3)</sub>	V <sub>CE</sub> =2.0V I <sub>C</sub> =500mA	25			
Collector to Emitter Saturation Voltage	V <sub>CE(sat)</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> =500mA V <sub>CE</sub> =2.0V			1.0	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =-5V I <sub>C</sub> =-10mA f=100MHz		130		MHz

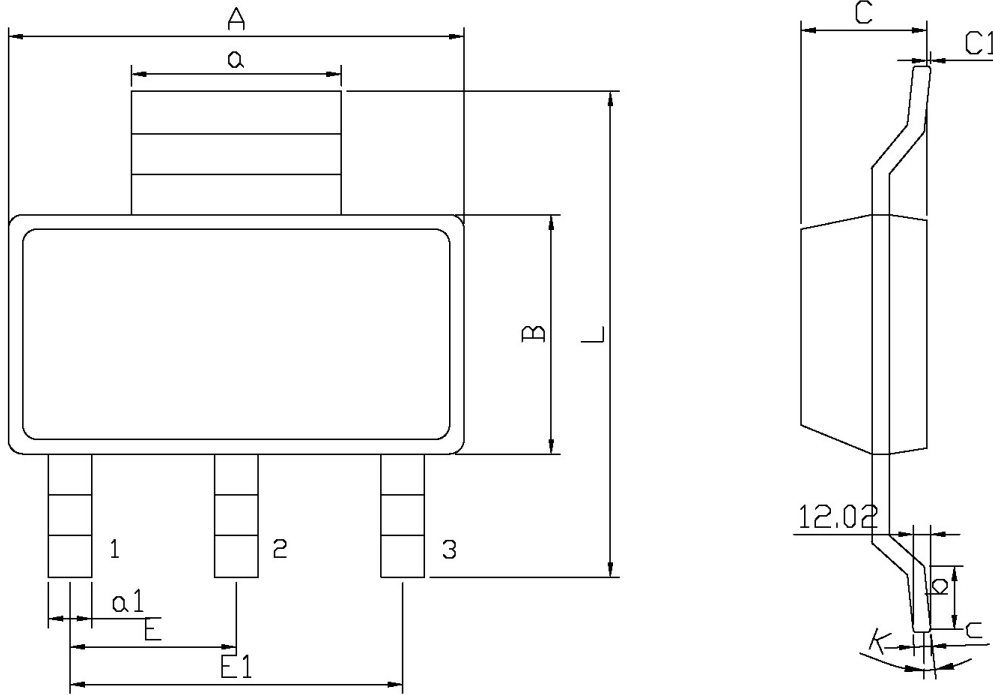
**电参数曲线图 / Electrical Characteristic Curve**



外形尺寸图 / Package Dimensions

SOT-223

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	6.30	6.70	C	-	1.80
a	2.90	3.10	b	0.91	-
B	3.30	3.70	c	0.24	0.32
L	6.70	7.30	C1	0.02	0.10
a1	0.60	0.80	K	0°	10°
E1	4.10	5.10			
E	2.00	2.60			

印章说明 / Marking Instructions



说明：

BR： 为公司代码

BCP56： 为产品型号

Q： 为汽车无卤产品标识

\*\*\*\*： 为生产批号代码，随生产批号变化

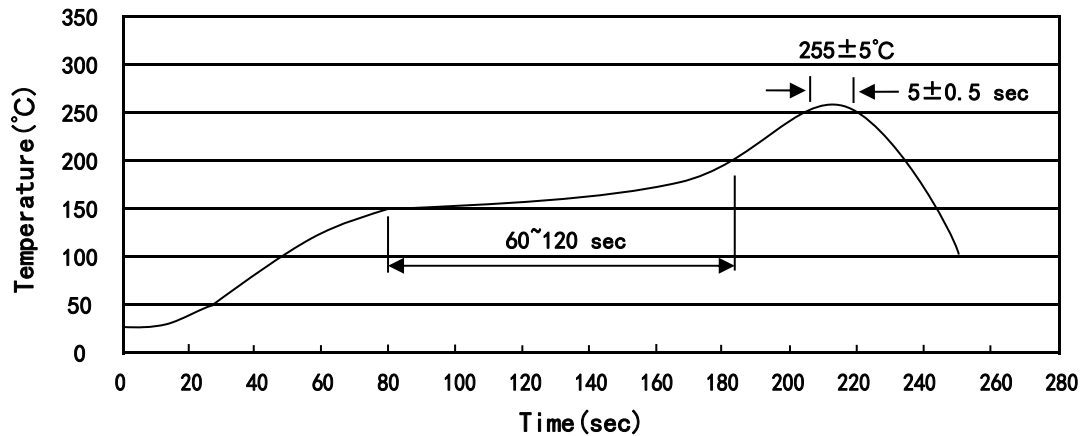
Note:

BR: Company Code

BCP56: Product Type Code

Q: Automobile halogen-free product Code

\*\*\*\*: Lot No. Code, code change with Lot No

**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 150~200°C，时间 60~120sec;
- 2、峰值温度 255±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:150~200°C, Time:60~120sec.
- 2.Peak Temp.:255±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-223	2,500	2	5,000	6	30,000	13" × 12	360×360×50	380×335×366

**使用说明 / Notices**