

**描述 / Descriptions**

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

**特征 / Features**

与 BRS8050MQ 互补，符合 AEC-Q101 标准高可靠性要求，无卤产品。

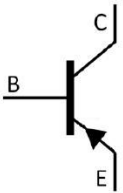
Complementary pair with BRS8050MQ, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

**用途 / Applications**

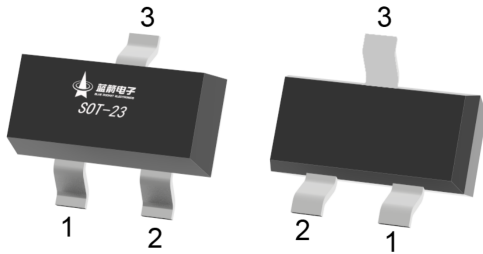
用于功率放大电路，满足汽车应用的严格要求。

Power amplifier 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 : Emitter

PIN 3 : Collector

**放大及印章代码 / hFE Classifications & Marking**

hFE Classifications Symbol	B	C	D
hFE Range	85~160	120~200	160~300
Marking	QY4B	QY4C	QY4D

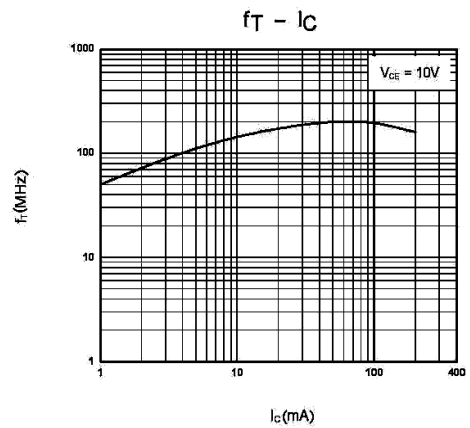
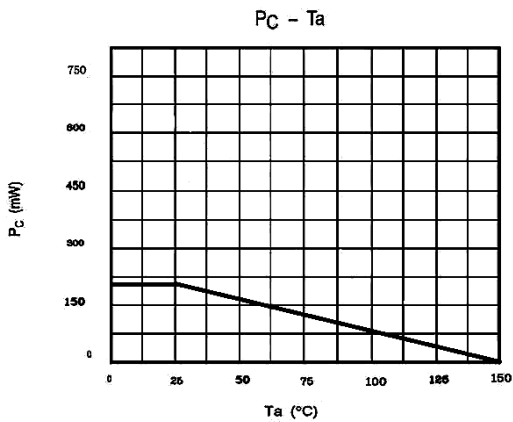
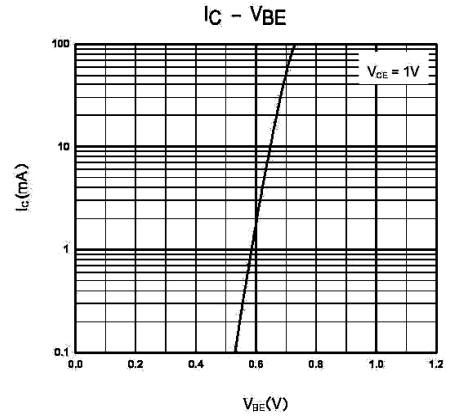
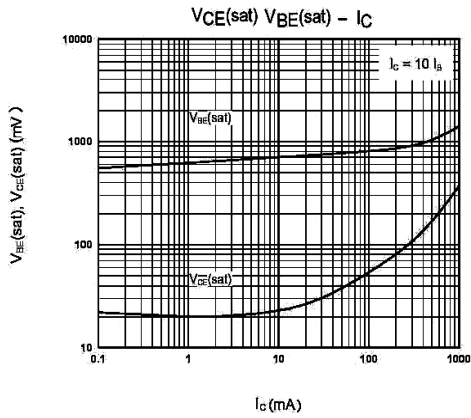
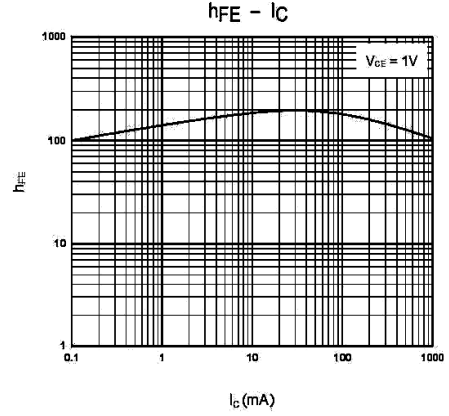
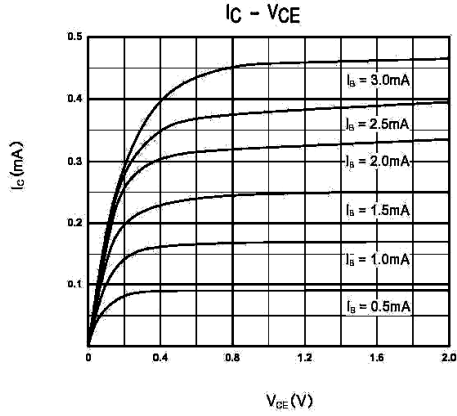
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V <sub>CBO</sub>	-40	V
Collector to Emitter Voltage	V <sub>CEO</sub>	-25	V
Emitter to Base Voltage	V <sub>EBO</sub>	-6.0	V
Collector Current	I <sub>C</sub>	-800	mA
Base Current	I <sub>B</sub>	-200	mA
Collector Power Dissipation	P <sub>C</sub>	200	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>stg</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 to Base Breakdown Voltage	V <sub>CBO</sub>	I <sub>C</sub> =-0.1mA I <sub>E</sub> =0	-40			V
Collector to Emitter Breakdown Voltage	V <sub>CEO</sub>	I <sub>C</sub> =-2.0mA I <sub>B</sub> =0	-25			V
Emitter to Base Breakdown Voltage	V <sub>EBO</sub>	I <sub>E</sub> =-0.1mA I <sub>C</sub> =0	-6.0			V
Collector Cut-Off Current	I <sub>CBO</sub>	V <sub>CB</sub> =-35V I <sub>E</sub> =0			-0.1	μA
Emitter Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =-6.0V I <sub>C</sub> =0			-0.1	μA
DC Current Gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =-1.0V I <sub>C</sub> =-100mA	85		300	
	h <sub>FE(2)</sub>	V <sub>CE</sub> =-1.0V I <sub>C</sub> =-500mA	40			
	h <sub>FE(3)</sub>	V <sub>CE</sub> =-1.0V I <sub>C</sub> =-5.0mA	45			
Collector-emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-500mA I <sub>B</sub> =-50mA		-0.28	-0.6	V
Base-Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-500mA I <sub>B</sub> =-50mA		-0.98	-1.2	V
Base-Emitter Voltage	V <sub>BE</sub>	V <sub>CE</sub> =-1.0V I <sub>C</sub> =-10mA		-0.66	-1.0	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =-10V I <sub>C</sub> =-50mA	100	200		MHz
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =-10V I <sub>E</sub> =0 f=1.0MHz		15		pF

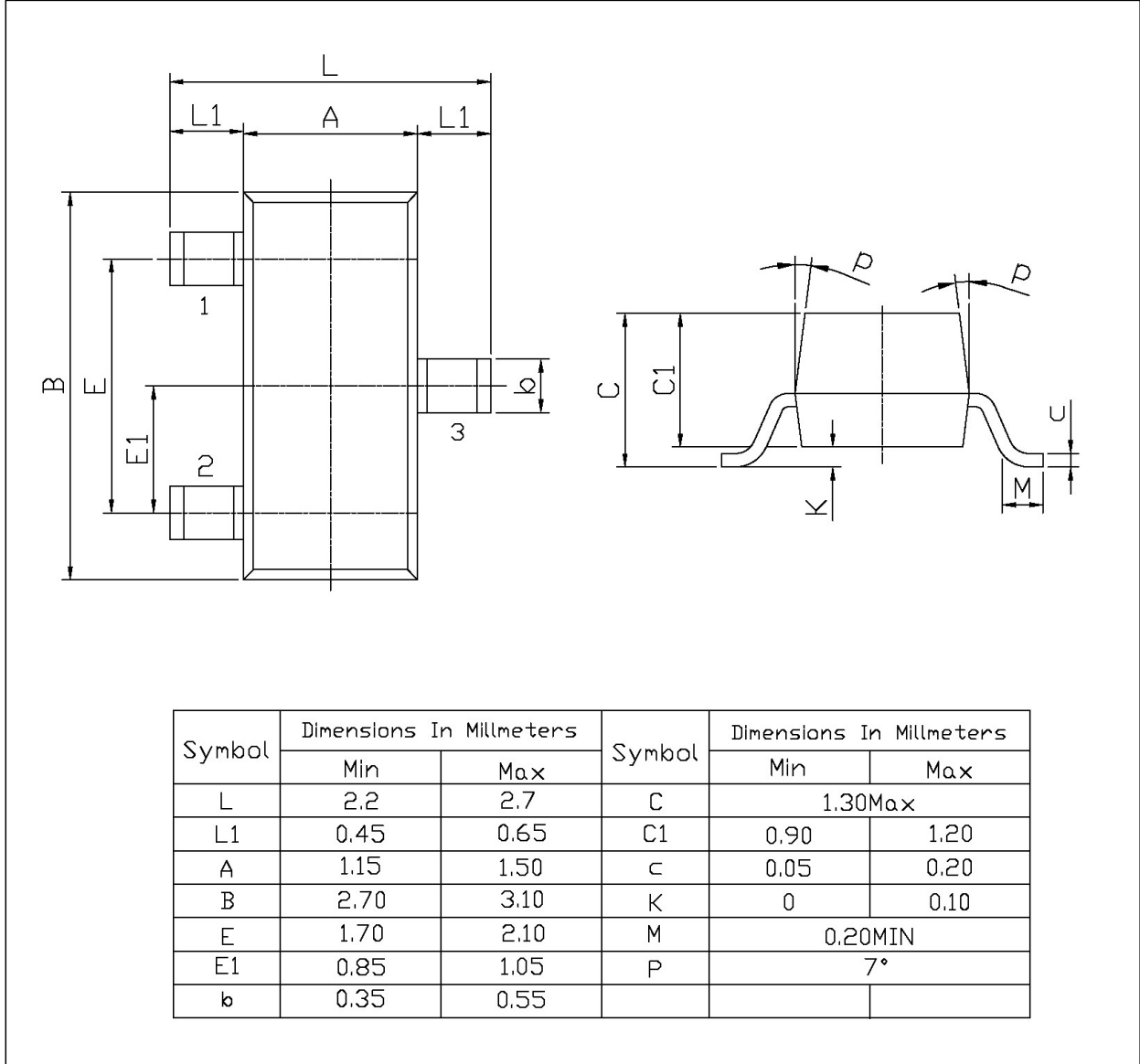
电参数曲线图 / Electrical Characteristic Curve



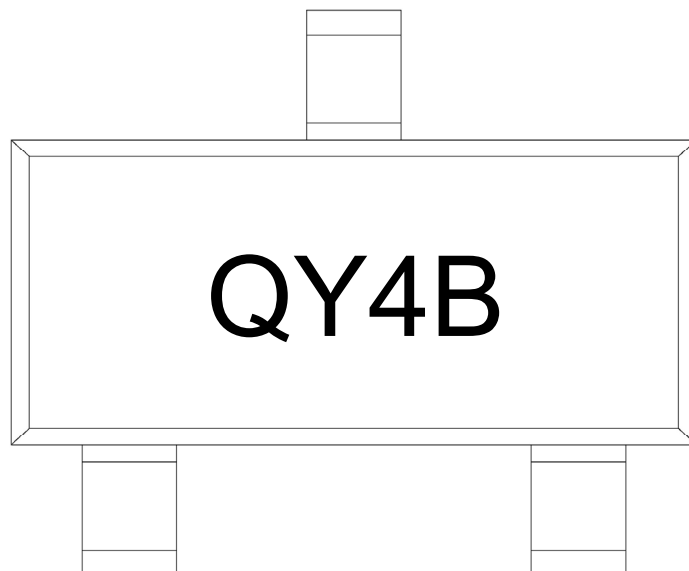
外形尺寸图 / Package Dimensions

SOT-23

单位: mm



印章说明 / Marking Instructions



说明：

Q： 为汽车无卤产品标识

Y4： 为型号代码

B： 为  $h_{FE}$  档次代码

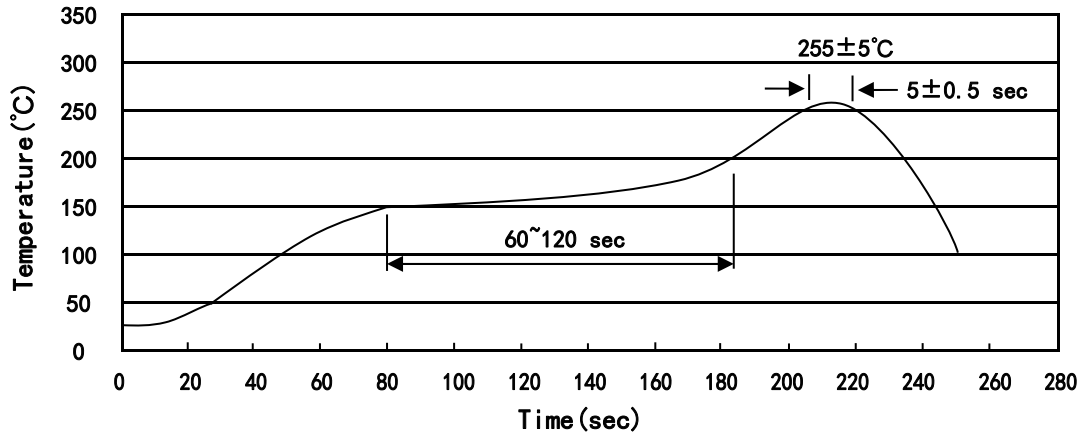
Note:

Q: Automobile halogen-free product Code

Y4: Product Type Code

B:  $h_{FE}$  Classifications Symbol 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  $150 \sim 200^\circ\text{C}$ ，时间  $60 \sim 120\text{sec}$ ;
- 2、峰值温度  $255 \pm 5^\circ\text{C}$ ，时间持续为  $5 \pm 0.5\text{sec}$ ;
- 3、焊接制程冷却速度为  $2 \sim 10^\circ\text{C}/\text{sec}$ .

Note:

- 1.Preheating: $150 \sim 200^\circ\text{C}$ , Time: $60 \sim 120\text{sec}$ .
- 2.Peak Temp.: $255 \pm 5^\circ\text{C}$ , Duration: $5 \pm 0.5\text{sec}$ .
3. Cooling Speed:  $2 \sim 10^\circ\text{C}/\text{sec}$ .

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

温度： $260 \pm 5^\circ\text{C}$

时间： $10 \pm 1$  sec.

Temp.: $260 \pm 5^\circ\text{C}$

Time: $10 \pm 1$  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	6	180,000	7" × 8	180×120×180	390×385×205

**使用说明 / Notices**