

**描述 / Descriptions**

SOT-89 塑封封装 PNP 半导体三极管。Silicon PNP transistor in a SOT-89 Plastic Package.

**特征 / Features**

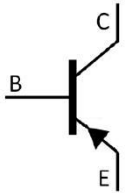
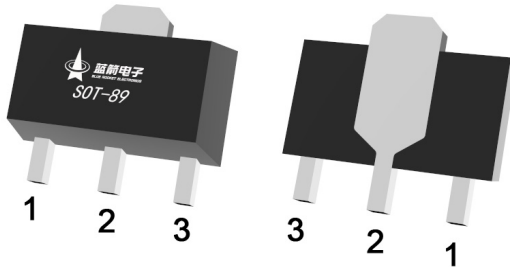
大电流，低电压，符合 AEC-Q101 标准高可靠性要求，无卤产品。

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

**用途 / Applications**

主要用于音频放大的驱动级，满足汽车应用的严格要求。

Driver stages of audio and video amplifiers, 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**

h <sub>FE(1)</sub> Classifications	10	16
h <sub>FE(1)</sub> Range	63~160	100~250
Marking	QAK *	QAL *

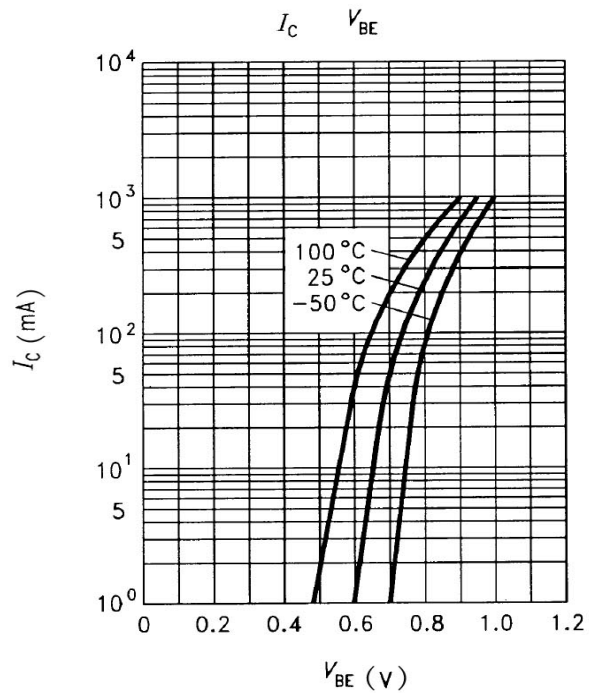
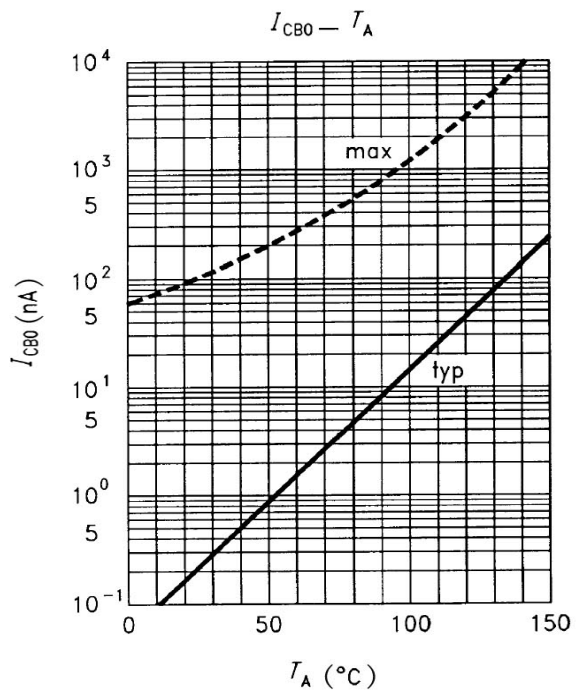
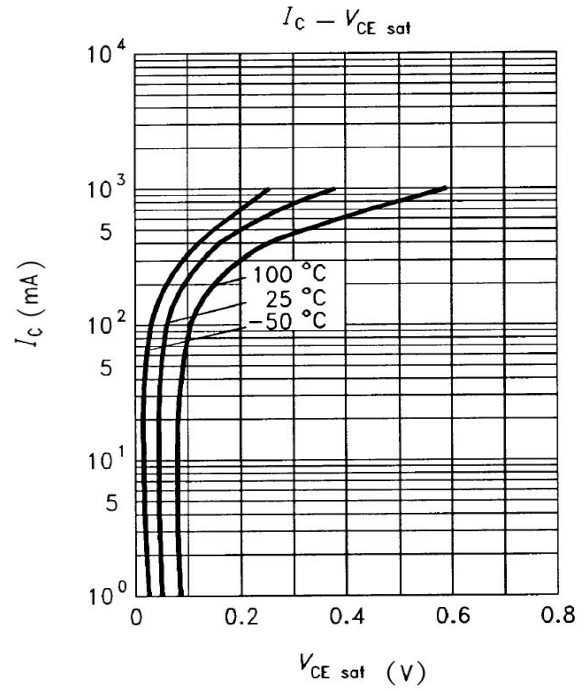
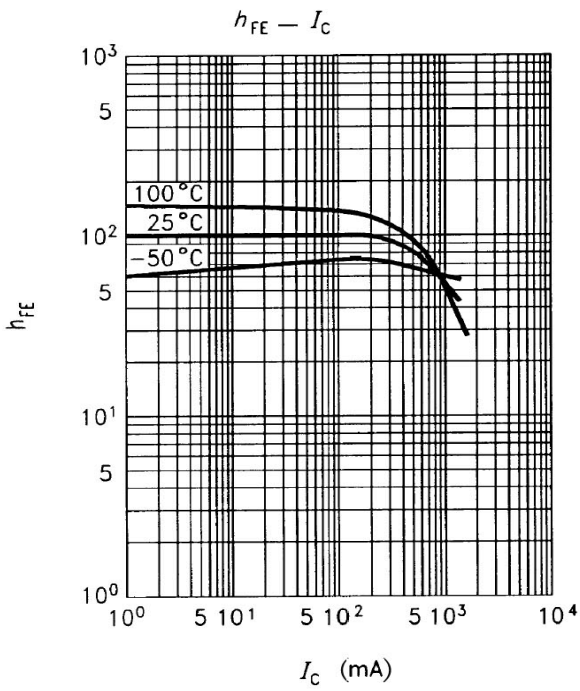
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V <sub>CB0</sub>	-100	V
Collector to Emitter Voltage	V <sub>CEO</sub>	-80	V
Emitter to Base Voltage	V <sub>EBO</sub>	-5	V
Collector Current-Continuous	I <sub>C</sub>	-1	A
Peak Collector Current	I <sub>CM</sub>	-1.5	A
Peak Base Current	I <sub>BM</sub>	-0.2	A
Collector Power Dissipation	P <sub>C</sub> (T <sub>C</sub> =25°C)	1.3	W
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 Cut-Off Current	I <sub>CBO(1)</sub>	V <sub>CB</sub> =-30V I <sub>E</sub> =0			-0.1	μA
	I <sub>CBO(2)</sub>	V <sub>CB</sub> =-30V T <sub>j</sub> =125°C I <sub>E</sub> =0			-10	μA
Emitter Base Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =-5V I <sub>C</sub> =0			-0.1	μA
DC Current Gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =-2V I <sub>C</sub> =-150mA	63		250	
	h <sub>FE(2)</sub>	V <sub>CE</sub> =-2V I <sub>C</sub> =-5mA	40			
	h <sub>FE(3)</sub>	V <sub>CE</sub> =-2V 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 Voltage	V <sub>BE</sub>	I <sub>C</sub> =-500mA V <sub>CE</sub> =-2V			-1	V
Transition Frequency	f <sub>T</sub>	I <sub>C</sub> =-10mA f=100MHz V <sub>CE</sub> =-5.0V		50		MHz

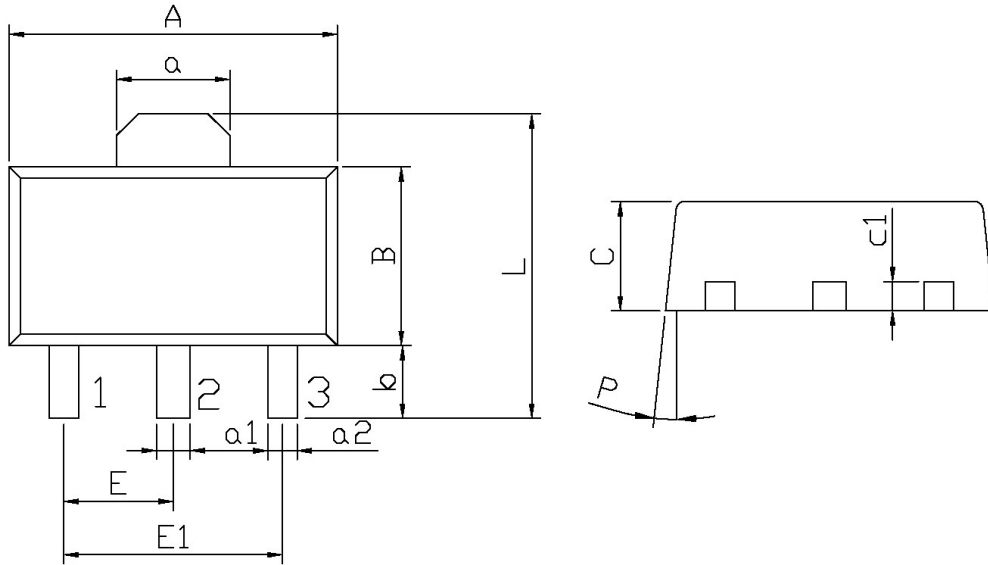
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

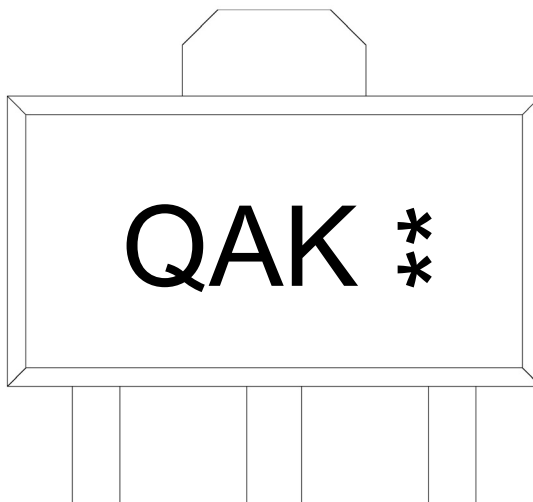
SOT-89

单位: mm



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	4.4	4.7	a1	0.36	0.56
B	2.35	2.65	a2	0.30	0.50
L	3.878	4.478	C	1.40	1.70
a	1.45	1.65	c1	0.35	0.50
E	1.40	1.60	P	6°	
E1	2.80	3.20			
b	0.80	1.20			

印章说明 / Marking Instructions



说明：

Q： 为汽车无卤产品标识

AK： 为型号代码

\*\*： 为生产批号代码，随生产批号变化

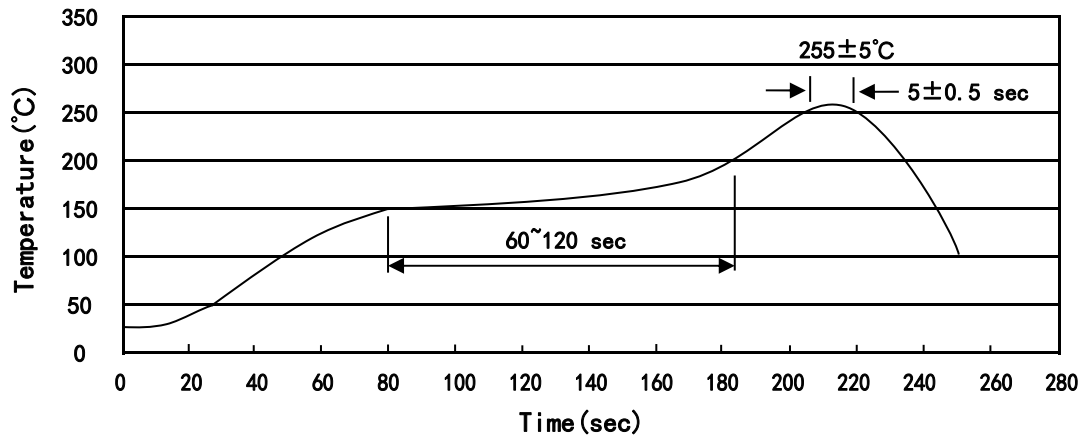
Note:

Q: Automobile halogen-free product Code

AK: Product Type 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-89	1,000	7	7,000	6	42,000	7" ×12	180×120×180	390×385×205

使用说明 / Notices