

描述 / Descriptions

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

特征 / Features

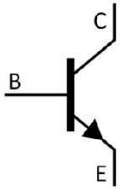
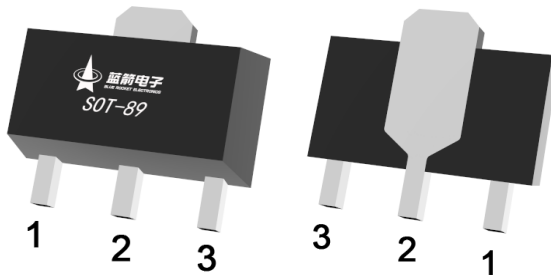
饱和压降低,典型的电流增益特性,可与 BR2SB1424Q 互补,符合 AEC-Q101 标准高可靠性要求,无卤产品。

Low $V_{CE(sat)}$, excellent current gain characteristic, Complementary to BR2SB1424Q, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

用途 / Applications

用于一般放大,满足汽车应用的严格要求。

General purpose amplifier, 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_{FE} Classifications & Marking

h _{FE} Classifications Symbol	Q	R	S	E
h _{FE} Range	120~270	180~390	270~560	390~820
Marking	QCFQ*	QCFR*	QCFS*	QCFE*

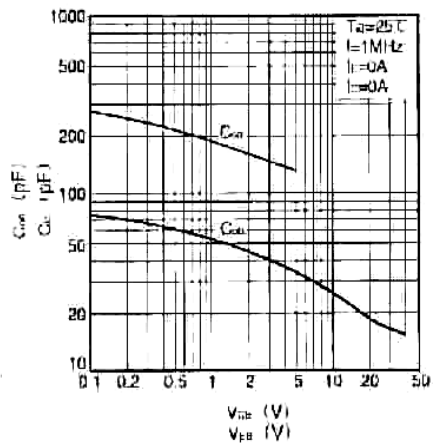
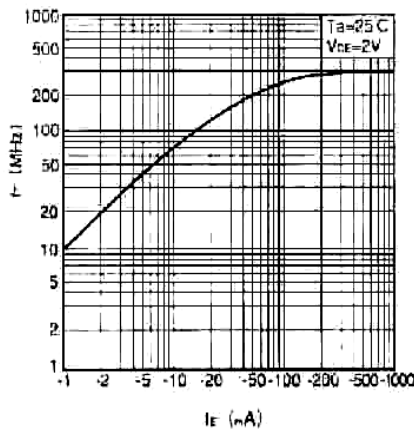
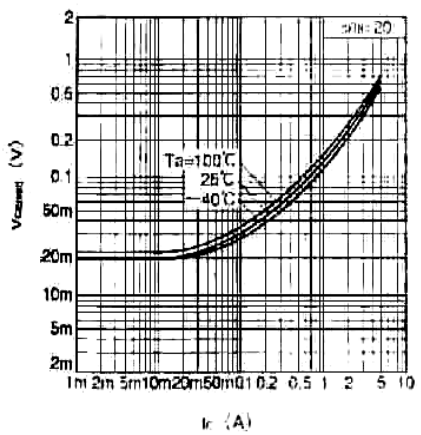
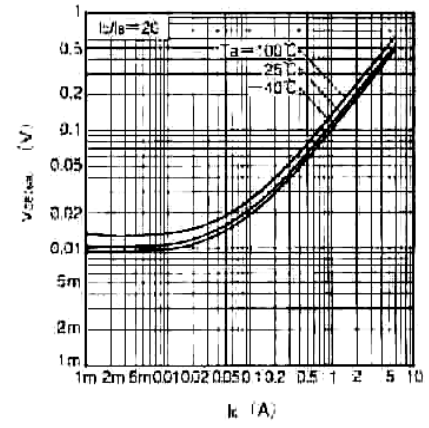
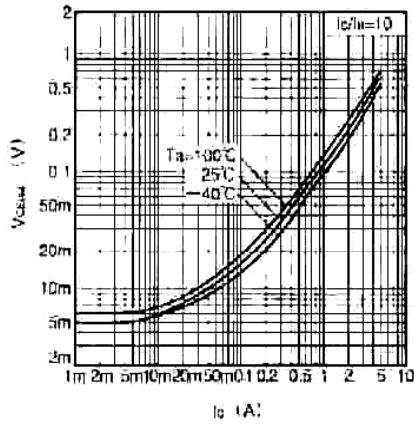
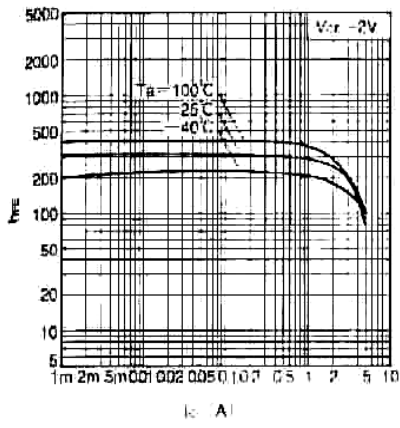
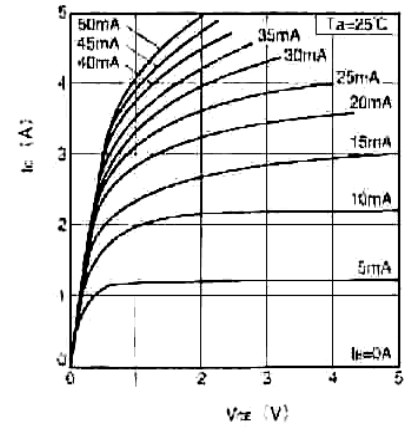
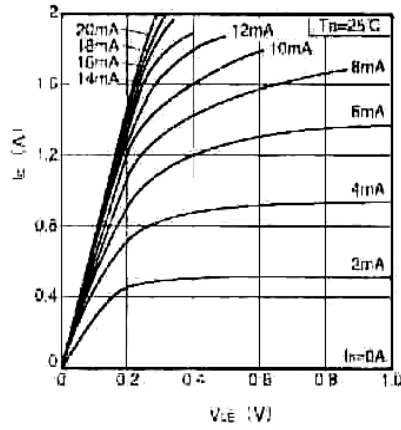
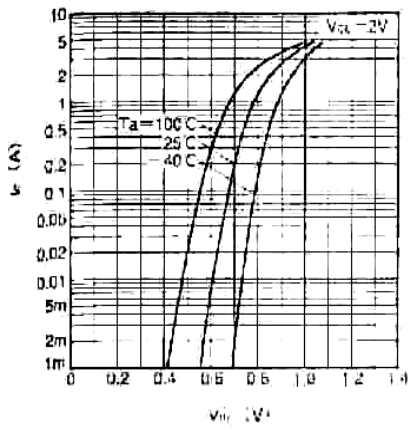
极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V _{CB0}	40	V
Collector to Emitter Voltage	V _{CEO}	20	V
Emitter to Base Voltage	V _{EBO}	6.0	V
Collector Current-Continuous	I _{C(DC)}	3.0	A
Collector Base-Continuous(Pulse)*	I _{C(Pulse)*}	5.0	A
Collector Power Dissipation	P _C	500	mW
Junction Temperature	T _j	150	°C
Storage Temperature Range	T _{stg}	-55~150	°C

*:Single pulse P_w=10ms
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 _{CB0}	I _C =50μA	40			V
Collector to Emitter Breakdown Voltage	V _{CEO}	I _C =1.0mA	20			V
Emitter to Base Breakdown Voltage	V _{EBO}	I _E =50μA	6.0			V
Collector Cut-Off Current	I _{CB0}	V _{CB} =30V			0.1	μA
Emitter Base Cut-Off Current	I _{EBO}	V _{EB} =5.0V			0.1	μA
DC Current Gain	h _{FE}	V _{CE} =2.0V I _C =100mA	180		560	
Collector to Emitter Saturation Voltage	V _{CE(sat)}	I _C =2.0A I _B =100mA		0.2	0.5	V
Transition Frequency	f _T	V _{CE} =2.0V f=100MHz I _C =0.5A		290		MHz
Collector Output Capacitance	C _{ob}	V _{CB} =10V f=1.0MHz I _E =0		25		pF

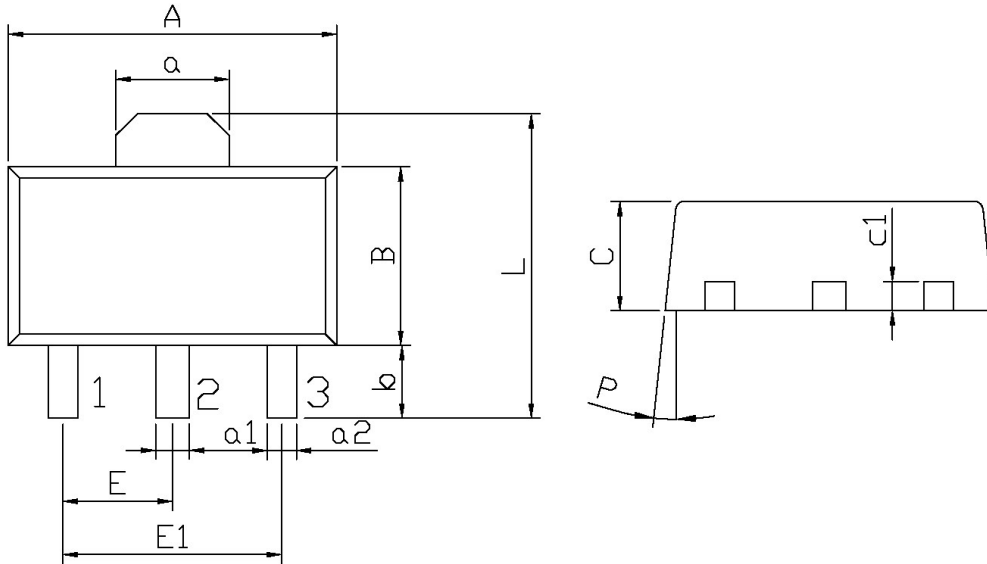
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

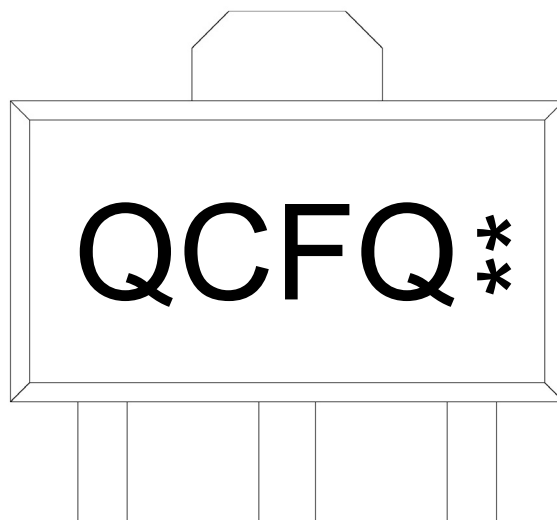
SOT-89

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

CF： 为型号代码

Q： 为 h_{FE} 档次代码

**： 为生产批号代码，随生产批号变化

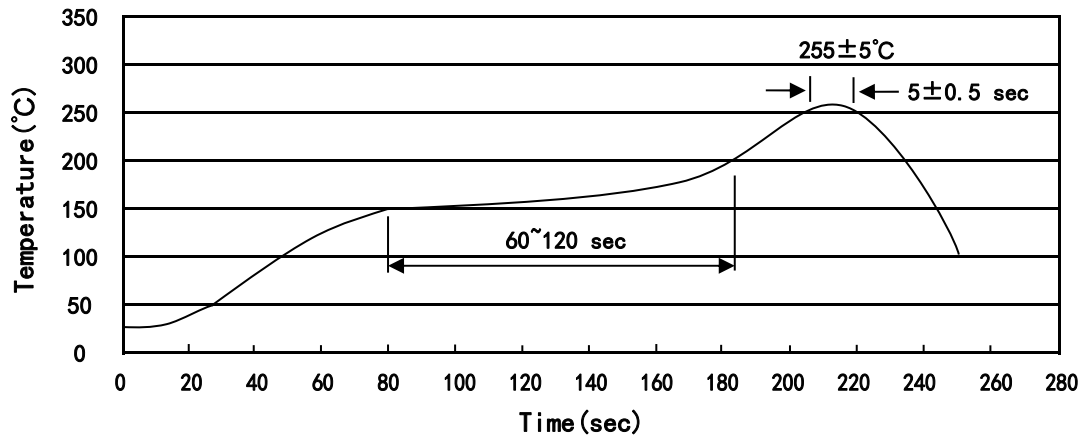
Note:

Q: Automobile halogen-free product Code

CF: Product Type

Q: h_{FE} Classifications Symbol

** : 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 ³)		
	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