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

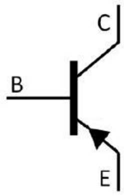
饱和压降低,与 2SD1766 互补。

Low $V_{CE(sat)}$,complements the 2SD1766.

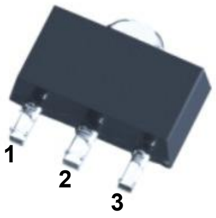
用途 / Applications

用于中功率放大。
Medium power amplifier applications.

内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



PIN1：Base　　PIN 2：Collector　　PIN 3：Emitter

印章代码 / Marking

h_{FE} Classifications Symbol	P	Q	R
h_{FE} Range	82～180	120～270	180～390
Marking	HBCP⁑	HBCQ⁑	HBCR⁑

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

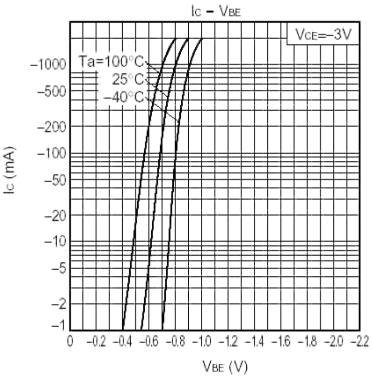
参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V_{CBO}	-40	V
Collector to Emitter Voltage	V_{CEO}	-32	V
Emitter to Base Voltage	V_{EBO}	-5.0	V
Collector Current-Continuous	I_C	-2.0	A
Collector Current-Continuous(Pulse)	I_{CP}	-3.0	A
Collector Power Dissipation	P_C	0.5	W
	*P_C	2.0	W
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55～150	℃

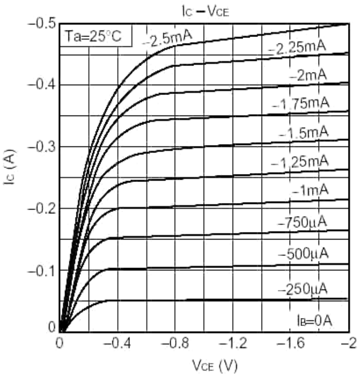
*:mounted on 40×40×0.7mm ceramic board.
*:装于 40×40×0.7m 的陶瓷板上。

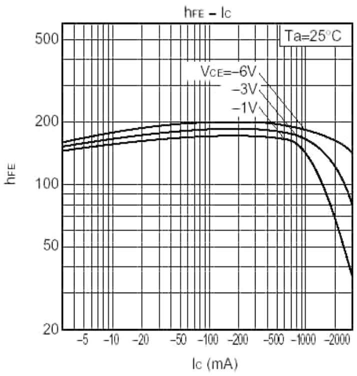
电性能参数 / Electrical Characteristics(Ta=25℃)

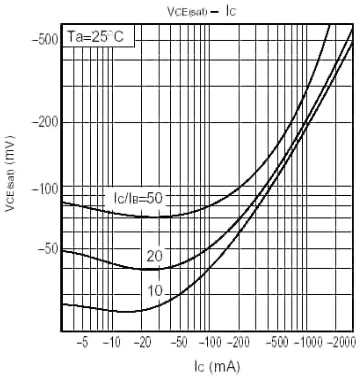
参数 Parameter	符号 Symbol	测试条件 Test Conditions	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
Collector to Base Breakdown Voltage	V_{CBO}	I_C=-50μA I_E=0	-40			V
Collector to Emitter Breakdown Voltage	V_{CEO}	I_C=-1.0mA I_B=0	-32			V
Emitter to Base Breakdown Voltage	V_{EBO}	I_E=-50μA I_C=0	-5.0			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=-20V I_E=0			-1.0	μA
Emitter Base Cut-Off Current	I_{EBO}	V_{EB}=-4.0V I_C=0			-1.0	μA
DC Current Gain	h_{FE}	V_{CE}=-3.0V I_C=-0.5A	82		390	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=-2.0A I_B=-0.2A		-0.5	-0.8	V
Transition Frequency	f_T	V_{CE}=-5.0V I_C=-0.5A f=30MHz		100		MHz
Collector Output Capacitance	C_{ob}	V_{CB}=-10V I_E=0 f=1.0MHz		50		pF

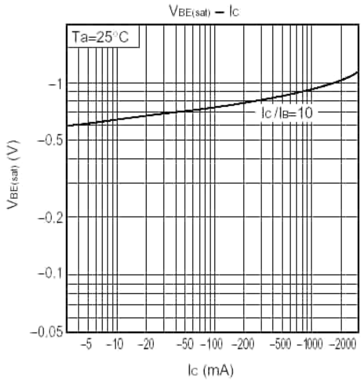
电参数曲线图 / Electrical Characteristic Curve

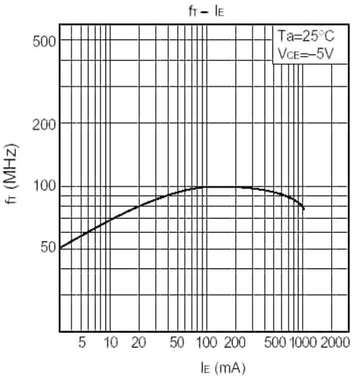


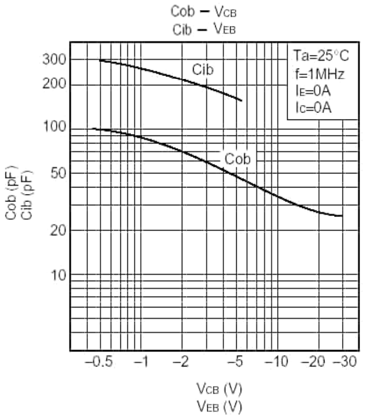


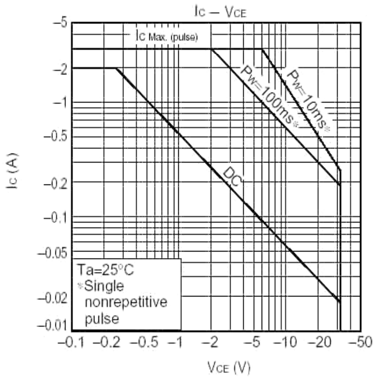






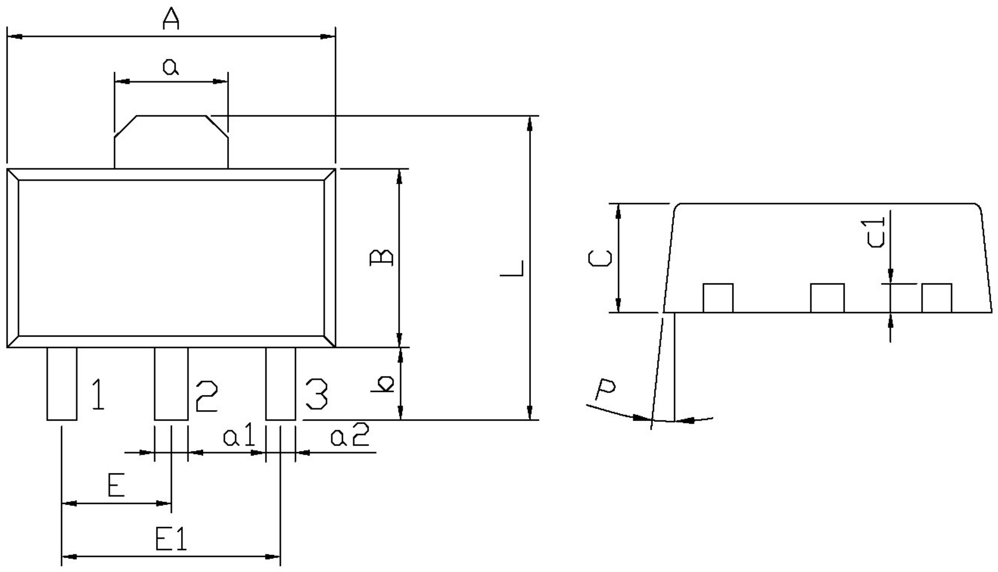






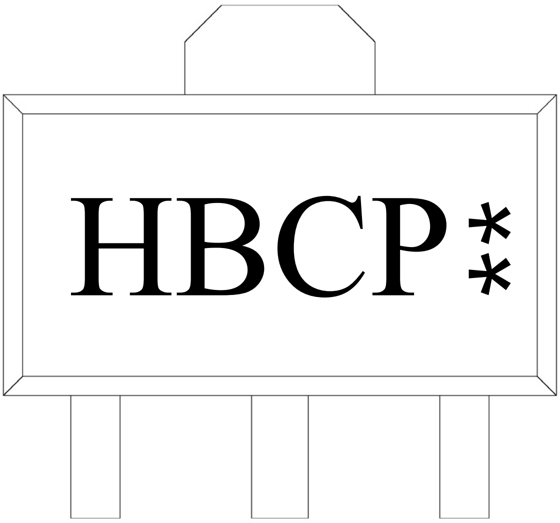
外形尺寸图 / Package Dimensions

SOT-89 单位：mm



Symbol	Dimensions In Millmeters		Symbol	Dimensions In Millmeters	
	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：

H：　为公司代码

BC：　为型号代码

P：　为 h_{FE} 分档代码

**：　为生产批号代码，随生产批号变化。

Note:

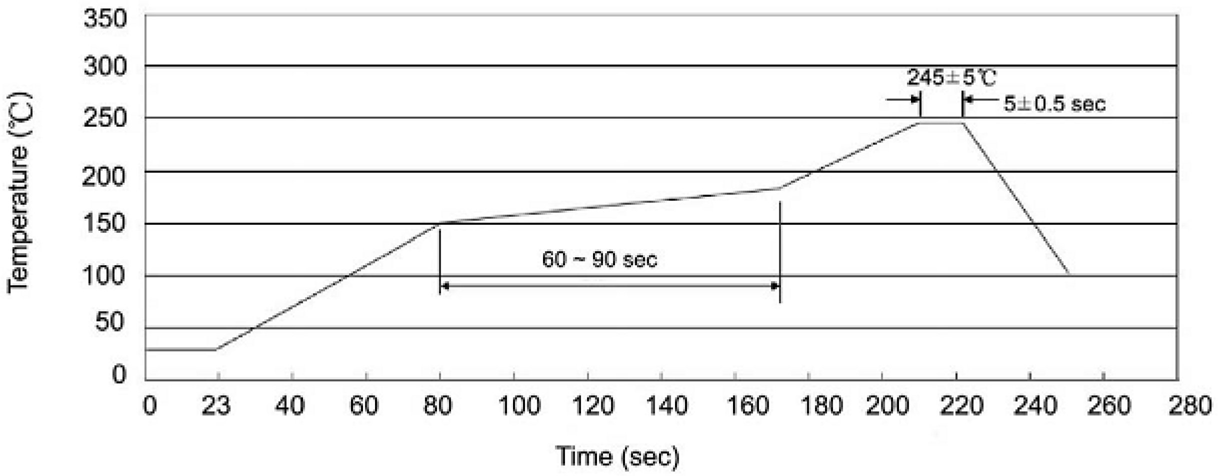
H:　Company Code.

BC:　Product Type.

P :　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：	Note:
1、预热温度 25～150℃，时间 60～90sec;	1.Preheating:25~150℃, Time:60~90sec.
2、峰值温度 245±5℃，时间持续为 5±0.5sec;	2.Peak Temp.:245±5℃, Duration:5±0.5sec.
3、焊接制程冷却速度为 2～10℃/sec.	3. Cooling Speed: 2~10℃/sec.

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

温度：260±5℃	时间：10±1 sec.	Temp.:260±5℃	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	8	56,000	7″ ×12	180×120×180	385×257×392

使用说明 / Notices