

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,与 2SB1132 互补。

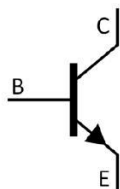
Low saturation voltage, complements the 2SB1132.

用途 / Applications

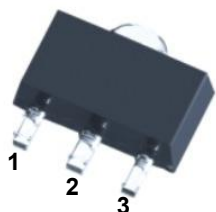
用于中功率放大。

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	HDAP [*]	HDAQ [*]	HDAR [*]

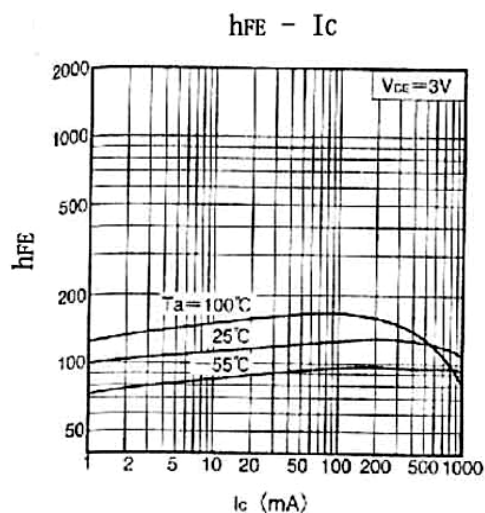
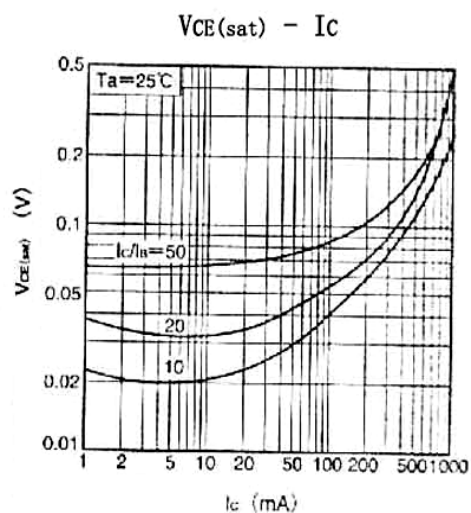
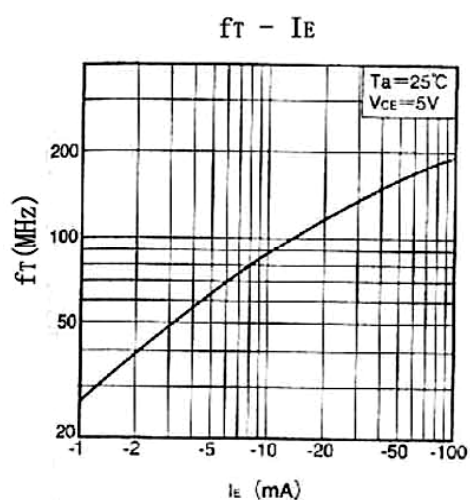
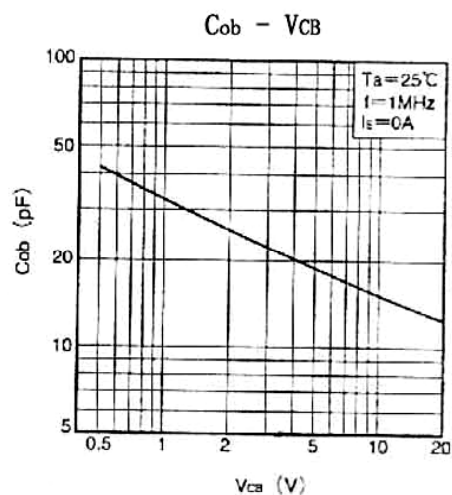
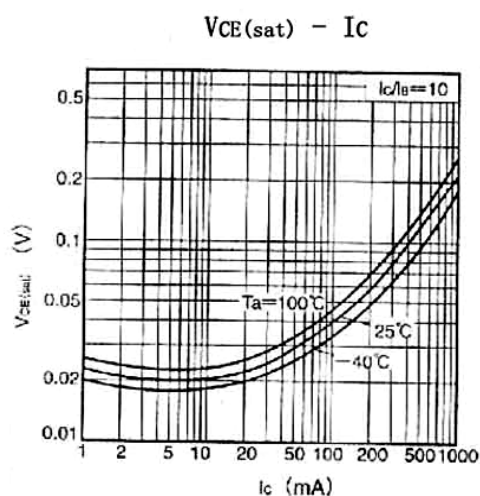
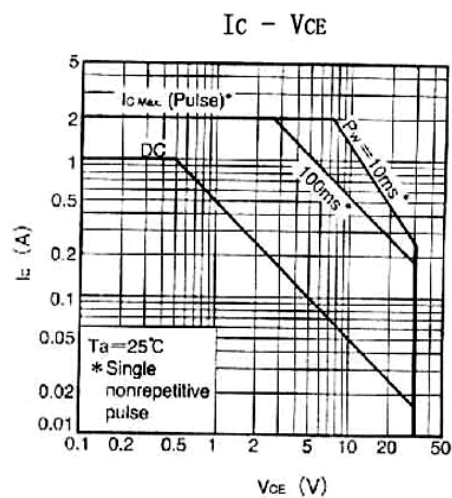
极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V_{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	1.0	A
Collector Base-Continuous(Pulse)	I_{CP}	2.0	A
Collector Power Dissipation	P_C	500	mW
Collector Power Dissipation	$P_C(T_c=25^{\circ}C)$	2.0	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-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 to Base Breakdown Voltage	V_{CBO}	$I_C=50\mu A$ $I_E=0$	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}	$I_E=50\mu A$ $I_C=0$	5.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=20V$ $I_E=0$			0.5	μA
Emitter Base Cut-Off Current	I_{EBO}	$V_{EB}=4.0V$ $I_C=0$			0.5	μA
DC Current Gain	h_{FE}	$V_{CE}=3.0V$ $I_C=100mA$	82		390	
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=500mA$ $I_B=50mA$		0.15	0.4	V
Transition Frequency	f_T	$V_{CE}=5.0V$ $f=100MHz$ $I_C=50mA$		150		MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10V$ $f=1.0MHz$ $I_E=0$		15		pF

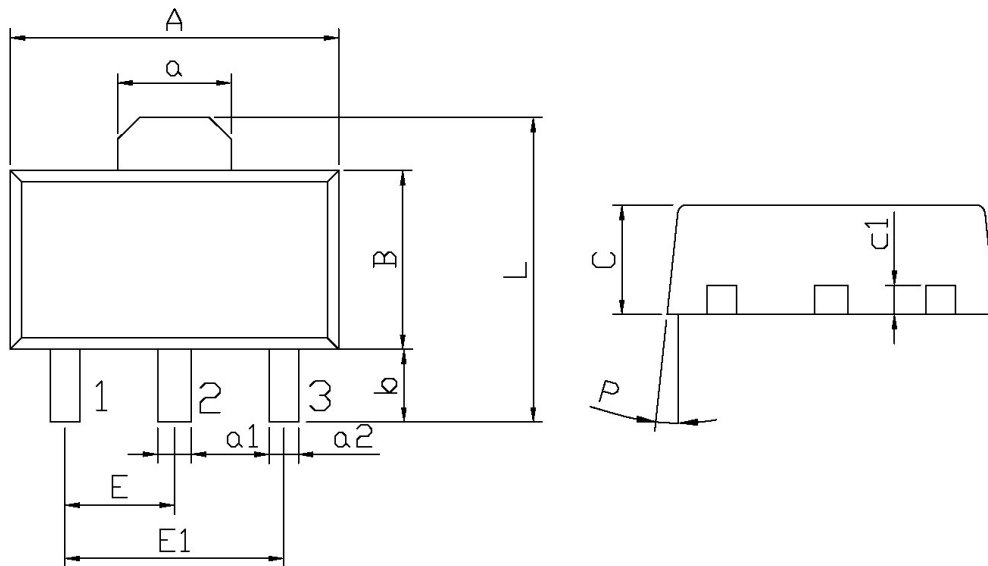
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

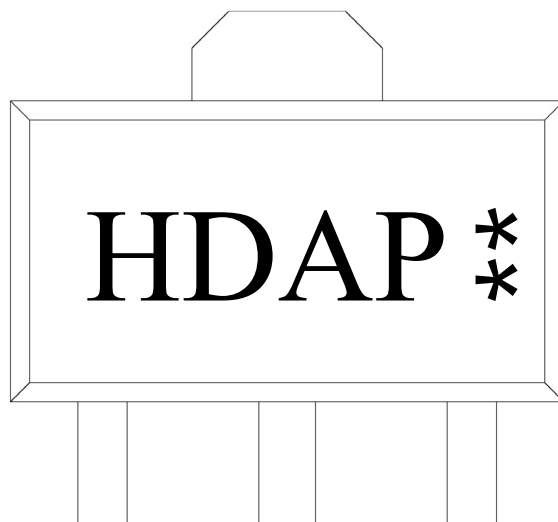
SOT-89

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：

H： 为公司代码

DA： 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:

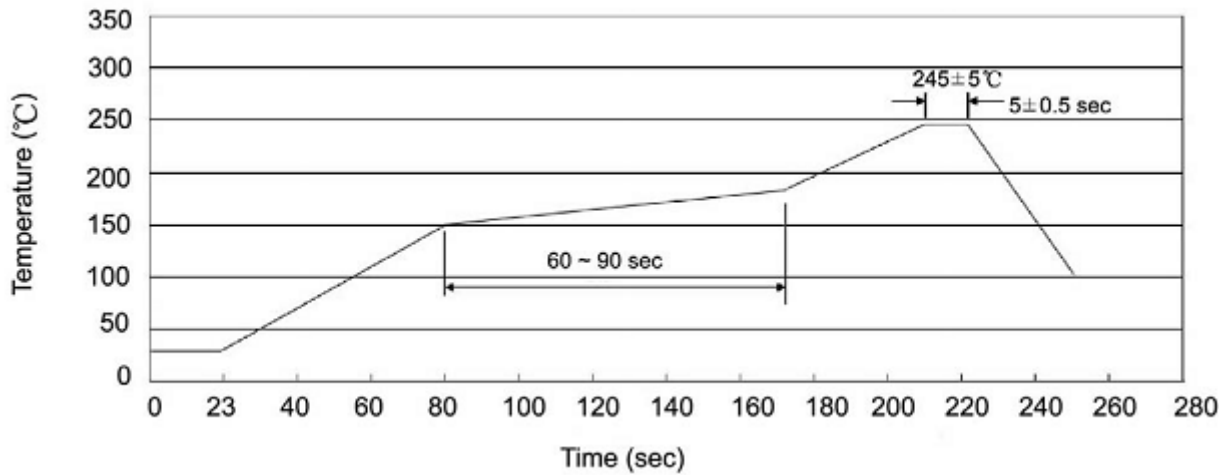
H: Company Code.

DA: 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：

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

 - 1.Preheating:25~150℃, Time:60~90sec.
 - 2.Peak Temp.:245±5℃, Duration:5±0.5sec.
 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