

### 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

耐压高。

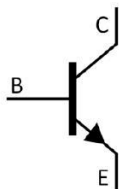
High voltage.

### 用途 / Applications

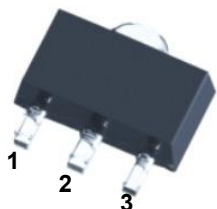
高电压控制电路。

High voltage control circuit.

### 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

Marking	H3D*
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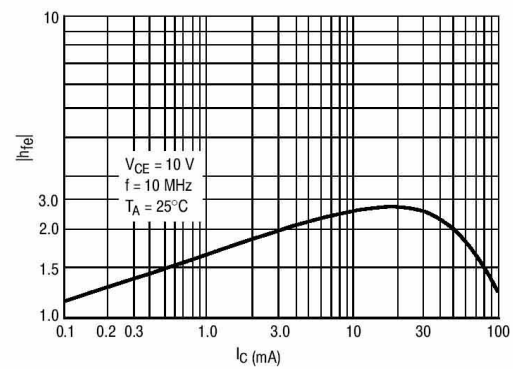
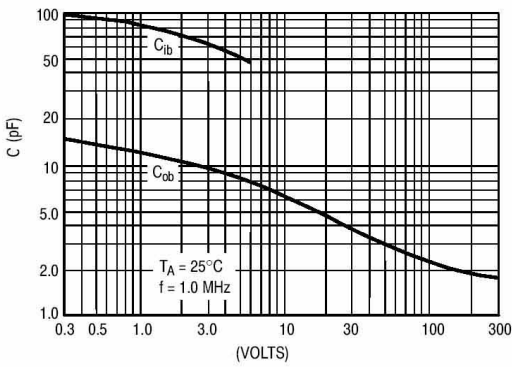
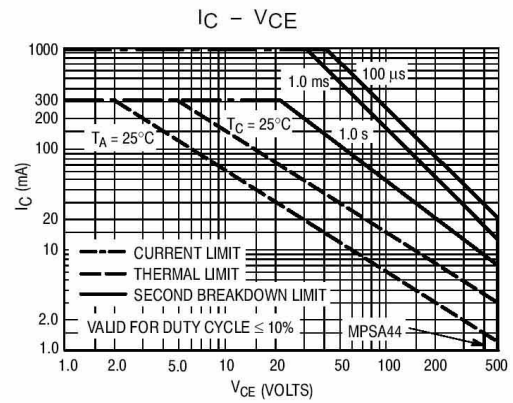
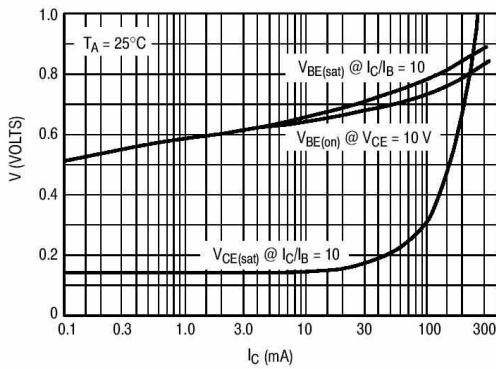
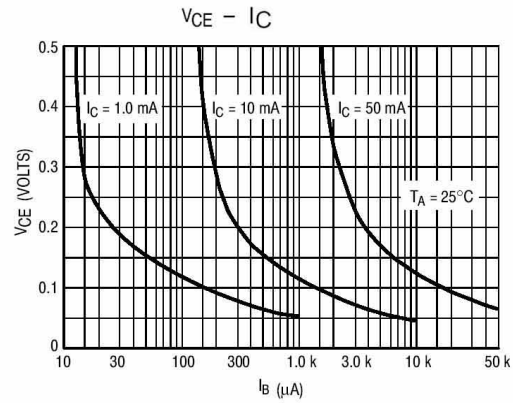
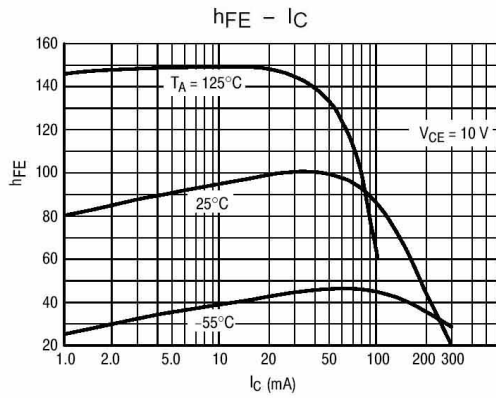
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	$V_{CBO}$	500	V
Collector to Emitter Voltage	$V_{CEO}$	400	V
Emitter to Base Voltage	$V_{EBO}$	6.0	V
Collector Current - Continuous	$I_C$	300	mA
Collector Power Dissipation	$P_C$	350	mW
Collector Power Dissipation	$P_{C(TC=25^\circ C)}$	1.5	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	$V_{CBO}$	$I_C=100\mu A$ $I_E=0$	500			V
Collector to Emitter Breakdown Voltage	$V_{CEO}$	$I_C=1.0mA$ $I_B=0$	400			V
Emitter to Base Breakdown Voltage	$V_{EBO}$	$I_E=10\mu A$ $I_C=0$	6.0			V
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=400V$ $I_E=0$			0.1	$\mu A$
Emitter Cut-Off Current	$I_{CES}$	$V_{CE}=400V$ $V_{BE}=0$			1	$\mu A$
Emitter Base Cut-Off Current	$I_{EBO}$	$V_{BE}=4.0V$ $I_C=0$			0.1	$\mu A$
DC Current Gain	$h_{FE(1)}$	$V_{CE}=10V$ $I_C=10mA$	50		200	
	$h_{FE(2)}$	$V_{CE}=10V$ $I_C=100mA$	40			
	$h_{FE(3)}$	$V_{CE}=10V$ $I_C=50mA$	45			
	$h_{FE(4)}$	$V_{CE}=10V$ $I_C=1.0mA$	40			
Collector to Emitter Saturation Voltage	$V_{CE(sat)(1)}$	$I_C=1.0mA$ $I_B=0.1mA$			0.4	V
	$V_{CE(sat)(2)}$	$I_C=10mA$ $I_B=1.0mA$			0.5	V
	$V_{CE(sat)(3)}$	$I_C=50mA$ $I_B=5.0mA$			0.75	V
Emitter to Base Saturation Voltage	$V_{BE(sat)}$	$I_C=10mA$ $I_B=1.0mA$			0.75	V
Collector-Base Capacitance	$C_{ob}$	$V_{CB}=20V$ $f=1.0MHz$ $I_E=0$			7.0	pF

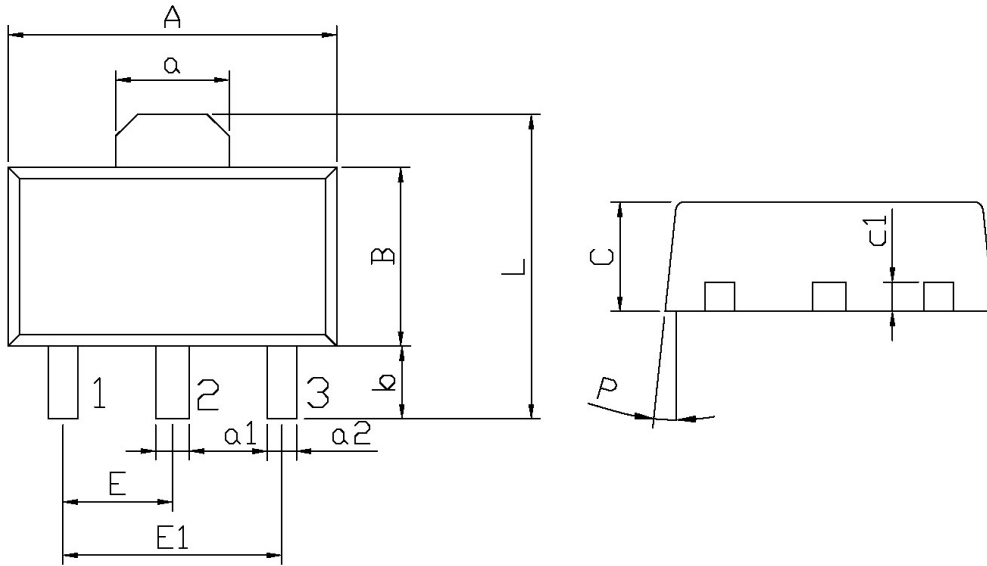
电参数曲线图 / Electrical Characteristic Curve



外形尺寸图 / Package Dimensions

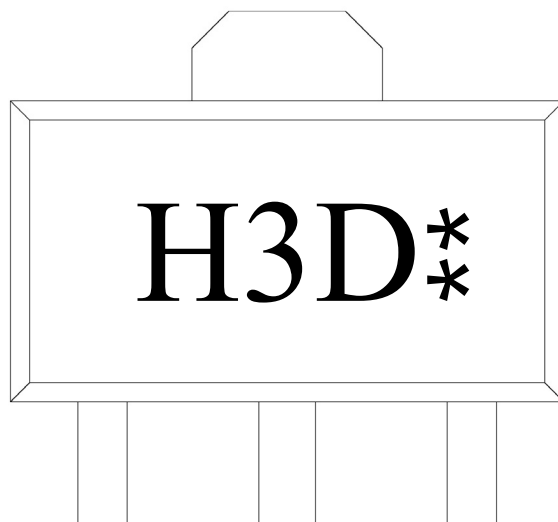
SOT-89

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

3D： 为型号代码

\*\*： 为生产批号代码，随生产批号变化。

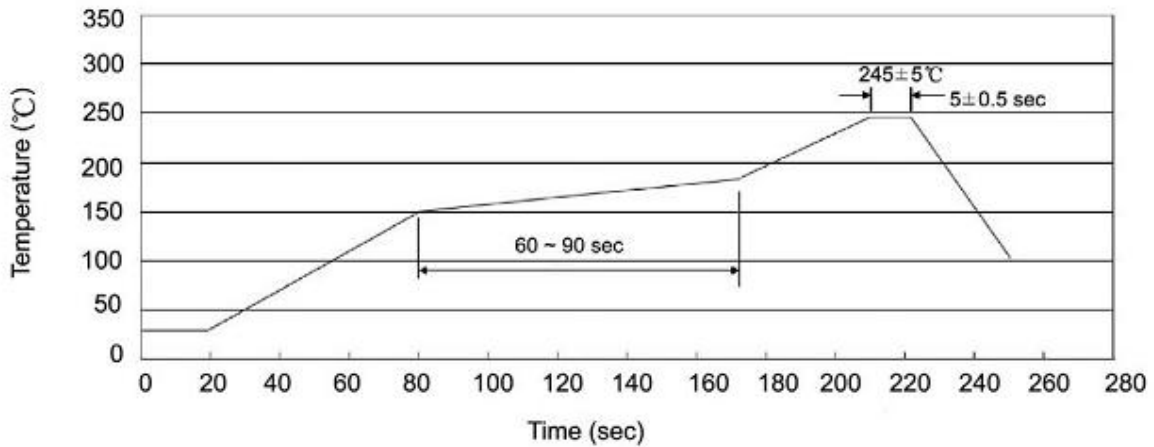
Note:

H: Company Code.

3D: Product Type.

\*\* : 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 ~ 180°C，时间 60 ~ 90sec;
- 2、峰值温度 245±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:150~180°C, Time:60~90sec.
- 2.Peak Temp.:245±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	8	56,000	7" ×12	180×120×180	385×257×392

**使用说明 / Notices**