

### 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

选用 MBIT 工艺规程，集电极-发射极饱和压降低，开关速度快，小电流电容和宽阔的安全工作区，可与互补 KTD1624。

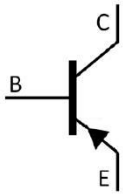
Adoption of MBIT processes, low collector-to-emitter saturation voltage, fast switching Speed, Large current capacity and wide ASO, Complementary to KTD1624.

### 用途 / Applications

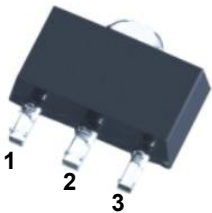
用于电压调整器，转接驱动器，灯管驱动器，电力设备。

Voltage regulators ,relay drivers lamp drivers, electrical equipment.

### 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	A	B	C
$h_{FE}$ Range	100~200	140~280	200~400
Marking	HXA *	HXB *	HXC *

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

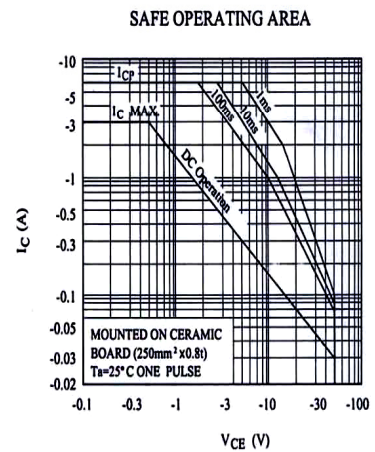
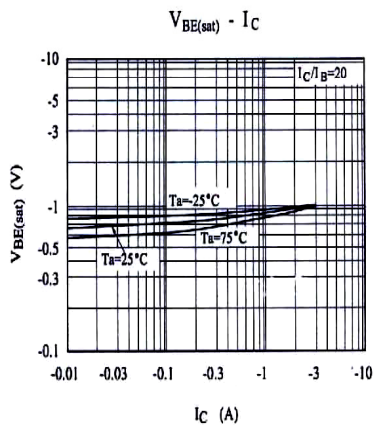
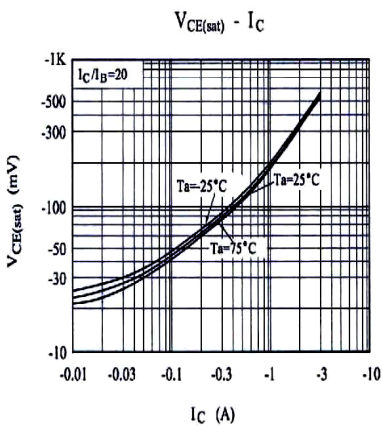
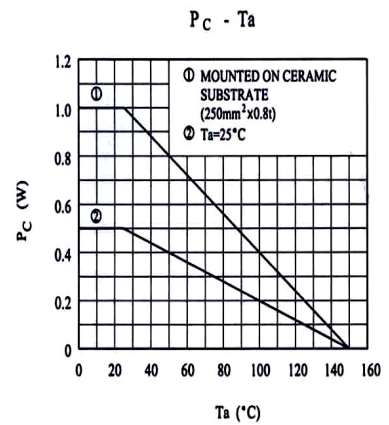
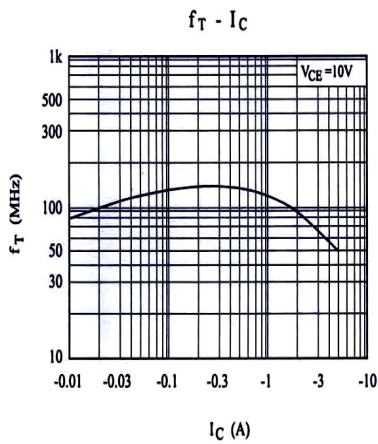
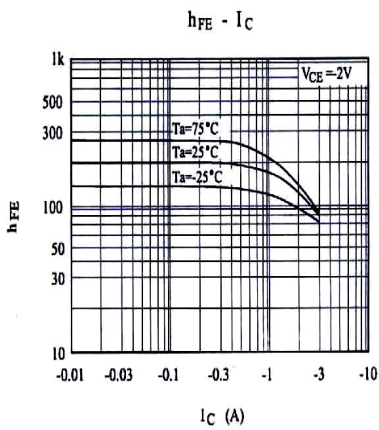
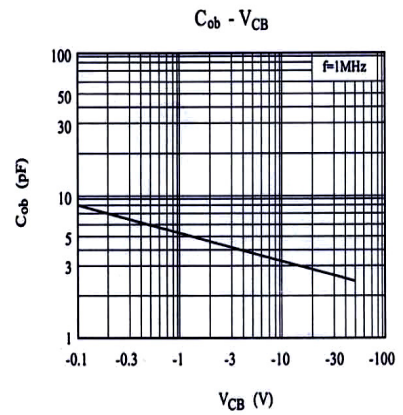
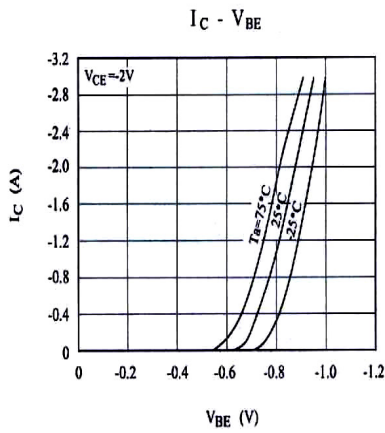
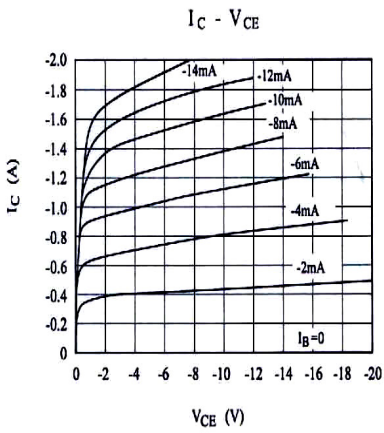
参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Collector to Base Voltage	V <sub>CBO</sub>	-60	V
Collector to Emitter Voltage	V <sub>CEO</sub>	-50	V
Emitter to Base Voltage	V <sub>EBO</sub>	-6.0	V
Collector Current - Continuous	I <sub>C</sub>	-3.0	A
Collector Current – Continuous(Pluse)	I <sub>CP</sub>	-6.0	A
Collector Power Dissipation	P <sub>C</sub>	500	mW
Collector Power Dissipation*	*P <sub>C</sub> (T <sub>C</sub> =25°C)	1.0	W
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature Range	T <sub>stg</sub>	-55~150	°C

\*:Package mounted on ceramic substrate(250mm<sup>2</sup>×0.8t)

**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 <sub>CBO</sub>	I <sub>C</sub> =-10μA I <sub>E</sub> =0	-60			V
Collector to Emitter Breakdown Voltage	V <sub>CEO</sub>	I <sub>C</sub> =-1.0mA I <sub>B</sub> =0	-50			V
Emitter to Base Breakdown Voltage	V <sub>EBO</sub>	I <sub>E</sub> =-10μA I <sub>C</sub> =0	-6.0			V
Collector Cut-Off Current	I <sub>CBO</sub>	V <sub>CB</sub> =-40V I <sub>E</sub> =0			-1.0	μA
Emitter Base Cut-Off Current	I <sub>EBO</sub>	V <sub>EB</sub> =-4.0V I <sub>C</sub> =0			-1.0	μA
DC Current Gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =-2.0V I <sub>C</sub> =-100mA	100		400	
	h <sub>FE(2)</sub>	V <sub>CE</sub> =-2.0V I <sub>C</sub> =-3.0A	35			
Collector to Emitter Saturation Voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-2.0A I <sub>B</sub> =-100mA		-0.35	-0.7	V
Base to Emitter Saturation Voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-2.0A I <sub>B</sub> =-100mA		-0.94	-1.2	V
Transition Frequency	f <sub>T</sub>	V <sub>CE</sub> =-10V I <sub>C</sub> =-50mA		150		MHz
Collector Output Capacitance	C <sub>ob</sub>	V <sub>CB</sub> =-10V f=1MHz		39		pF
Turn-On Time	t <sub>on</sub>	-10I <sub>B1</sub> =10I <sub>B2</sub> =I <sub>C</sub> =1.0A		70		nS
Storage Time	t <sub>stg</sub>			450		nS
Fall Time	t <sub>f</sub>			35		nS

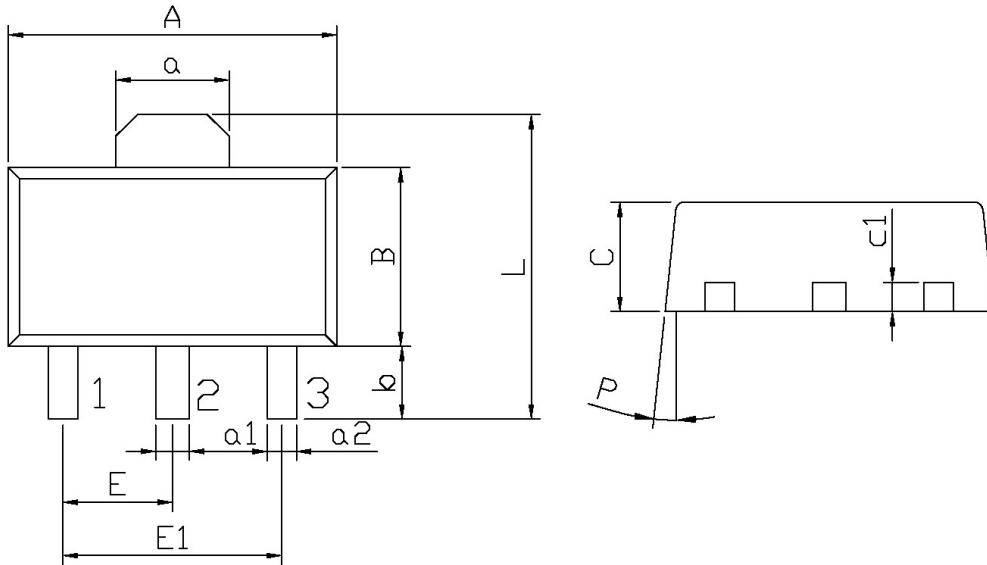
**电参数曲线图 / Electrical Characteristic Curve**



外形尺寸图 / Package Dimensions

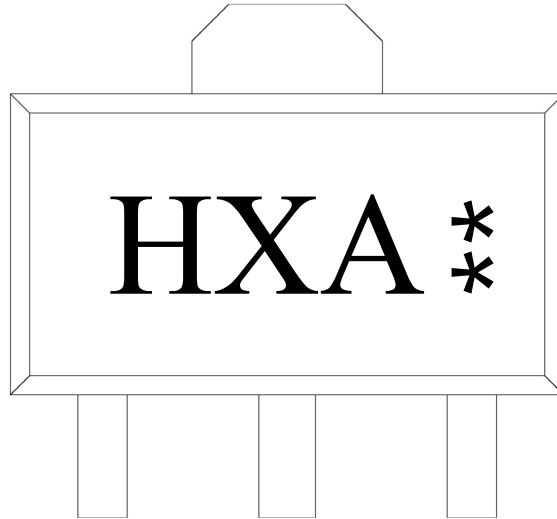
SOT-89

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
- X： 为型号代码
- A： 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.
- X: Product Type.
- A:  $h_{FE}$  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°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:25~150°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**