

### 描述 / Descriptions

SOT-89 塑封封装单向可控硅。 Thyristor in a SOT-89 Plastic Package.

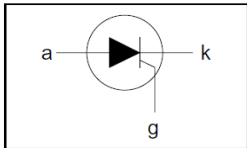
### 特征 / Features

阻断电压高、浪涌电流承受能力强。  
High Blocking Voltage, High Surge Current Capability.

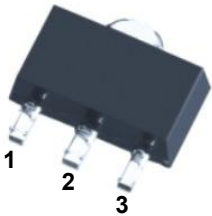
### 用途 / Applications

应用于高压控制电路。  
Applied to high Voltage control circuit.

### 内部等效电路 / Equivalent Circuit



### 引脚排列 / Pinning



PIN1 : Gate      PIN 2 : Anode      PIN 3 : Cathode

### 印章代码 / Marking

|         |                         |                         |                         |                         |
|---------|-------------------------|-------------------------|-------------------------|-------------------------|
| Model   | MCR100T-3               | MCR100T-4               | MCR100T-6               | MCR100T-8               |
| Marking | H103 $\frac{3}{\times}$ | H104 $\frac{4}{\times}$ | H106 $\frac{6}{\times}$ | H108 $\frac{8}{\times}$ |

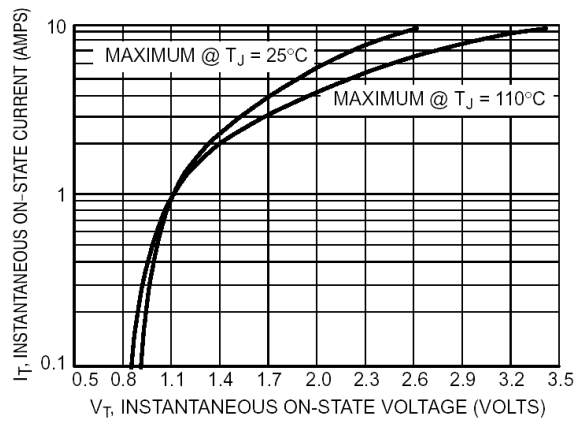
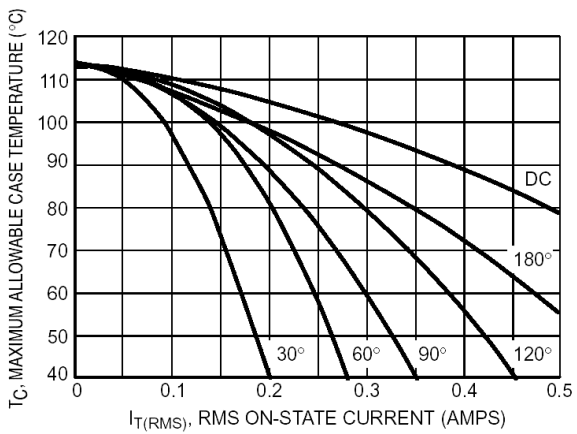
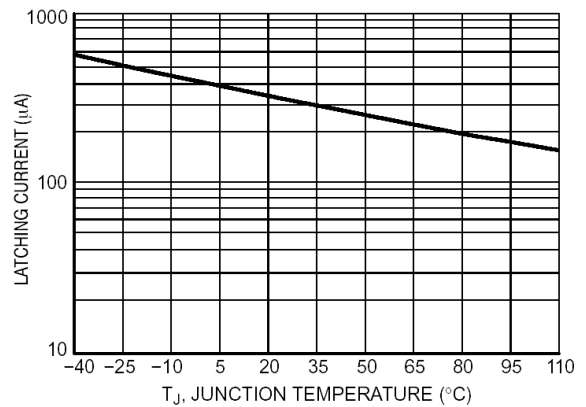
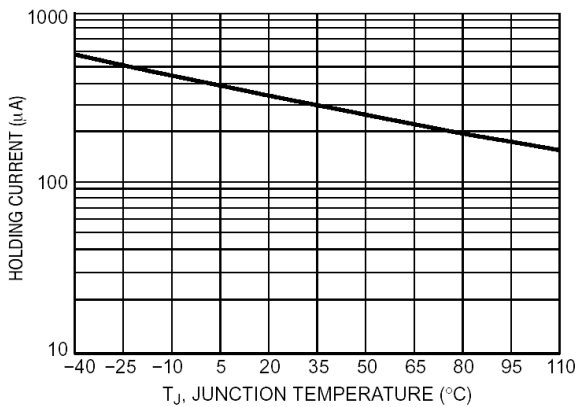
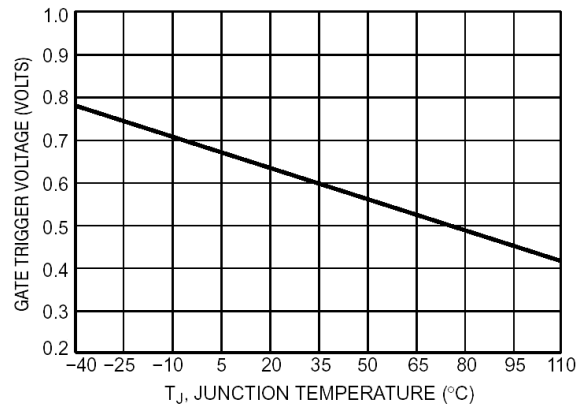
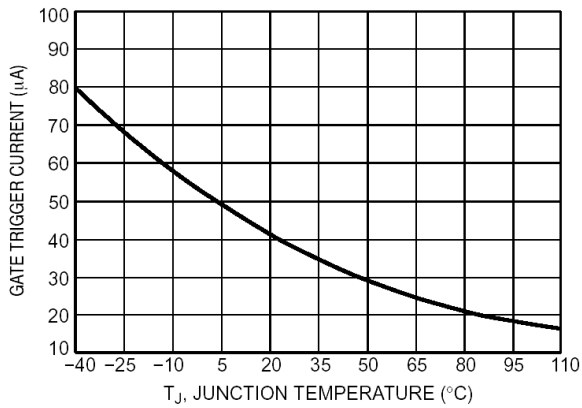
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

| 参数<br>Parameter                      | 符号<br>Symbol | 测试条件<br>Test Conditions   | 数值<br>Rating             | 单位<br>Unit           |
|--------------------------------------|--------------|---|--------------------------|----------------------|
| Repetitive peak off-state voltages   | $V_{DRM}$    | $T_j = -40$ to $110^\circ\text{C}$ , Sine Wave, 50 to 60Hz, Gate Open |                          | V                    |
| Peak Repetitive Off-State Voltage    | $V_{RRM}$    | MCR 100T-3<br>MCR 100T-4<br>MCR 100T-6<br>MCR 100T-8                  | 100<br>200<br>400<br>600 |                      |
| RMS on-state current                 | $I_{T(RMS)}$ | $T_c = 80^\circ\text{C}$  | 0.8                      |                      |
| Non-repetitive peak on-state current | $I_{TSM}$    | 1/2 Cycle, Sine Wave, 60Hz, $T_j = 25^\circ\text{C}$                  | 10                       |                      |
| $I_t^2$ for fusing                   | $I_t^2$      | $t = 8.3\text{ms}$  | 0.415                    | $\text{A}^2\text{S}$ |
| Peak gate power                      | $P_{GM}$     | $T_A = 25^\circ\text{C}$ , Pulse Width $\leq 1.0\mu\text{s}$          | 100                      | mW                   |
| Average gate power                   | $P_{G(AV)}$  | $T_A = 25^\circ\text{C}$ $t = 8.3\text{ms}$                           | 100                      | mW                   |
| Peak gate current                    | $I_{GM}$     | $T_A = 25^\circ\text{C}$ , Pulse Width $\leq 1.0\mu\text{s}$          | 1.0                      | A                    |
| Peak Gate Voltage – Reverse          | $V_{GRM}$    | $T_A = 25^\circ\text{C}$ , Pulse Width $\leq 1.0\mu\text{s}$          | 5.0                      | V                    |
| Junction Temperature                 | $T_j$        |   | -40~110                  | $^\circ\text{C}$     |
| Storage Temperature Range            | $T_{stg}$    |   | -40~150                  | $^\circ\text{C}$     |

**电性能参数 / Electrical Characteristics(Ta=25°C)**

| 参数<br>Parameter                            | 符号<br>Symbol           | 测试条件<br>Test Conditions  | 最小值<br>Min                 | 典型值<br>Typ | 最大值<br>Max | 单位<br>Unit    |
|--|------------------------|--|----------------------------|------------|------------|---------------|
| Repetitive peak off-state current          | $I_{DRM}$<br>$I_{RRM}$ | $V_D = \text{Rated } V_{DRM} \text{ and } V_{RRM}, R_{GK} = 1\text{K}\Omega$                               | $T_c = 25^\circ\text{C}$   |            | 10         | $\mu\text{A}$ |
|  |                        |  | $T_c = +110^\circ\text{C}$ |            | 100        |               |
| On-state voltage                           | $V_{TM}$               | $I_{TM} = 1.0\text{A peak @ } T_A = 25^\circ\text{C}$  |                            |            | 1.7        | V             |
| Gate trigger current                       | $I_{GT}$               | $V_{AK} = 7.0\text{Vdc}$ $R_L = 100\Omega$ $T_c = 25^\circ\text{C}$  |                            | 40         | 200        | $\mu\text{A}$ |
| Holding current                            | $I_H$                  | $V_{AK} = 7.0\text{Vdc}$<br>Initiating Current = 20mA  | $T_c = 25^\circ\text{C}$   | 0.5        | 5.0        | mA            |
|  |                        |  | $T_c = -40^\circ\text{C}$  |            | 10         |               |
| Latching current                           | $I_L$                  | $V_{AK} = 7.0\text{V}$<br>$I_g = 200\mu\text{A}$   | $T_c = 25^\circ\text{C}$   | 0.6        | 10         | mA            |
|  |                        |  | $T_c = -40^\circ\text{C}$  |            | 15         |               |
| Gate trigger voltage                       | $V_{GT}$               | $V_{AK} = 7.0\text{Vdc}, R_L = 100\Omega$  | $T_c = 25^\circ\text{C}$   | 0.62       | 0.8        | V             |
|  |                        |  | $T_c = -40^\circ\text{C}$  |            | 1.2        |               |
| Critical rate of rise of off-state voltage | dv/dt                  | $V_D = \text{Rated } V_{DRM}$ , Exponential Waveform, $R_{GK} = 1\text{K}\Omega$ $T_j = 110^\circ\text{C}$ | 20                         | 35         | -          | V/us          |
| Critical Rate of Rise of On-State Current  | di/dt                  | $I_P K = 20\text{A}$ ; $I_{GT} = 20\text{mA}$<br>$P_W = 10\text{usec}$ ;<br>$di/dt = 1\text{A/usec}$ ;     |                            |            | 50         | A/us          |

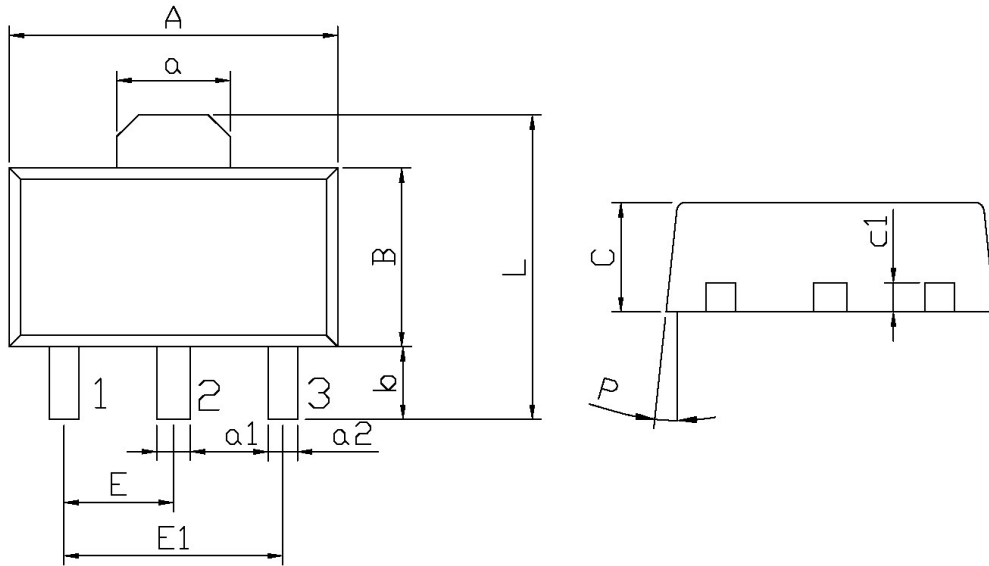
**电参数曲线图 / Electrical Characteristic Curve**



外形尺寸图 / Package Dimensions

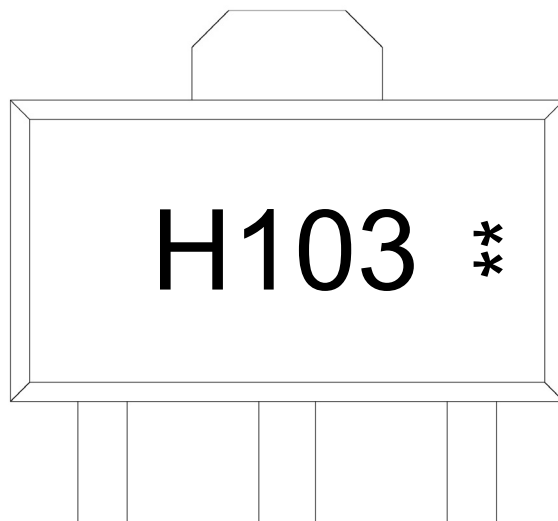
SOT-89

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

103： 为型号代码

\*\*： 为生产批号代码，随生产批号变化。

Note:

H： Company Code.

103: 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 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：270±5°C

时间：10±1 sec.

Temp.:270±5°C

Time:10±1 sec

**包装规格 / Packaging SPEC.**

卷盘包装 / REEL

| Package Type<br>封装形式 | Units 包装数量         |                         |                        |                              |                        | Dimension 包装尺寸 (unit: mm <sup>3</sup> ) |             |             |
|----------------------|--------------------|-------------------------|------------------------|------------------------------|------------------------|---|-------------|-------------|
|                      | Units/Reel<br>只/卷盘 | Reels/Inner Box<br>卷盘/盒 | Units/Inner Box<br>只/盒 | Inner Boxes/Outer Box<br>盒/箱 | Units/Outer Box<br>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**