

**描述 / Descriptions**

SOT-89塑封封装单向可控硅。

Thyristor in a SOT-89 SOT-23 TO-92 Plastic Package

**特征 / Features**

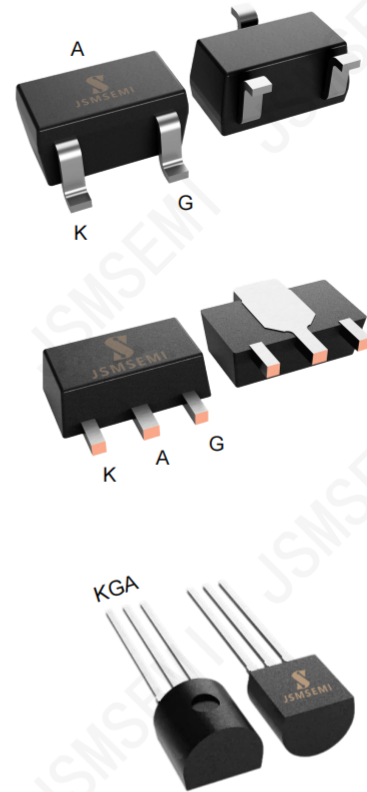
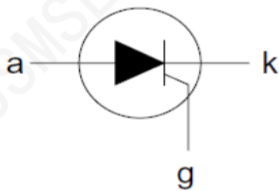
阻断电压高、浪涌电流承受能力强。

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**

**订购信息/Ordering Information**

Order number	Package	Operation Temperature Range	MSL Grade	Ship, Quantity	Green
MCR100-3	SOT-23 SOT-89 TO-92	-40 to 125°C	3	T&R,3000 TUBE,1000 TUBE,1000	Rohs
MCR100-4		-40 to 125°C	3		Rohs
MCR100-6		-40 to 125°C	3		Rohs
MCR100-8		-40 to 125°C	3		Rohs

注意：TO-92型号带尾缀:G

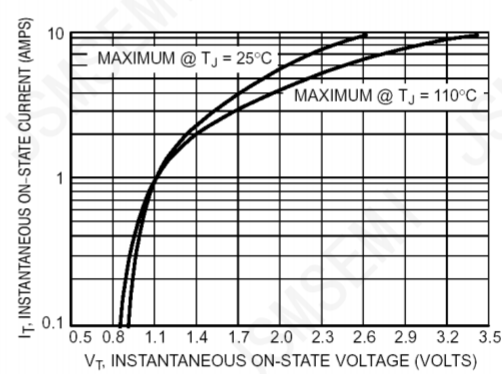
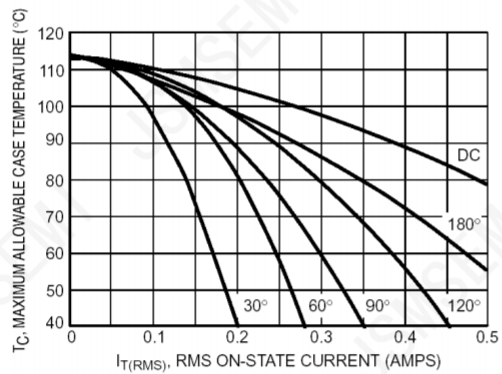
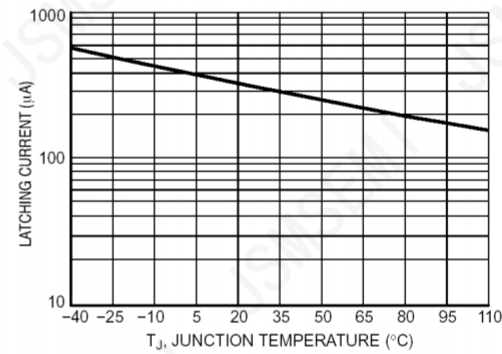
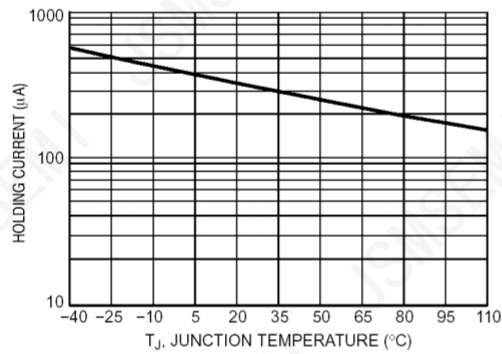
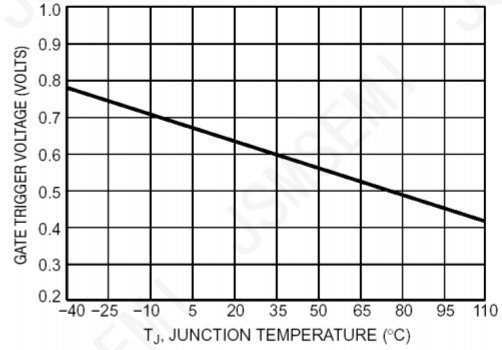
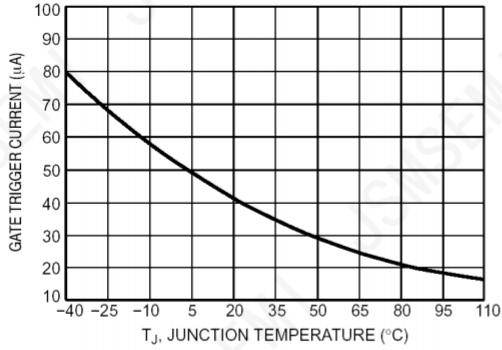
**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

参数 Parameter	符号 Symbol	测试条件 Test Conditions	数值 Rating	单位 Unit
Repetitive peak off-state voltages	$V_{DRM}$	$T_j = -40$ to $110^\circ\text{C}$ , Sine Wave, 50 to 60Hz, Gate Open	100	V
Repetitive peak off-state voltages	$V_{RRM}$	MCR100-3 MCR100-4 MCR100-6 MCR100-8	200 400 600	
RMS on-state current	$I_{T(RMS)}$	$T_c = 80^\circ\text{C}$	0.8	A
Non-repetitive peak on-state current	$I_{TSM}$	1/2 Cycle, Sine Wave, 60Hz, $T_j = 25^\circ\text{C}$	10	A
$I^2t$ for fusing	$I^2t$	$t = 8.3\text{ms}$	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
Peak Average 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 Reverse Gate Voltage	$V_{RGM}$	$T_A = 25^\circ\text{C}$ , Pulse Width $\leq 1.0\mu\text{s}$	5.0	V
Junction Temperature	$T_j$		-40~125	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$		-40~150	$^\circ\text{C}$

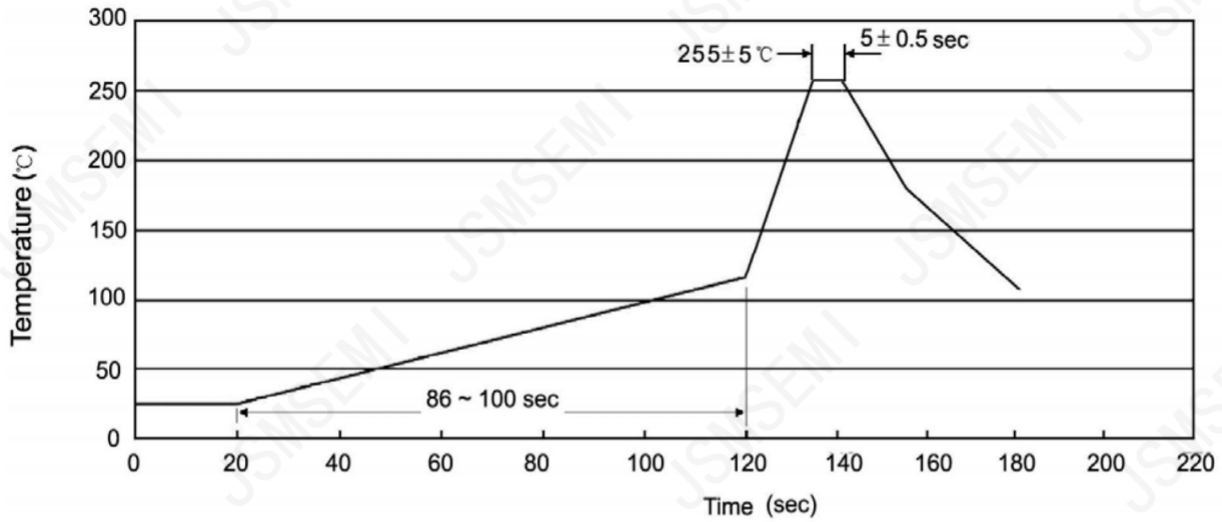
**电性能参数 / Electrical Characteristics(Ta=25°C)**

参数 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
Repetitive peak off-state current	$I_{DRM}, I_{RRM}$	$V_D = \text{Rated}$ $V_{DRM}$ 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	$I_H$	$V_{AK} = 7.0\text{Vdc}$ Initiating Current = $20\text{mA}$	$T_c = 25^\circ\text{C}$		0.5	mA
			$T_c = -40^\circ\text{C}$		10	
Latch Current	$I_L$	$V_{AK} = 7.0\text{V}$ , $I_g = 200\mu\text{A}$	$T_c = 25^\circ\text{C}$		0.6	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	V
			$T_c = -40^\circ\text{C}$		1.2	
Forward Voltage Application Rate	$dv/dt$	$V_D = \text{Rated } V_{DRM}$ Exponential Waveform, $R_{GK} = 1\text{K}\Omega$ $T_j = 110^\circ\text{C}$	20	35	-	V/us
Critical rate of rise of off-state voltage	$di/dt$	$I_p K = 20\text{A}$ $P_W = 10\text{usec}$ ; $diG$ $/dt = 1\text{A/usec}$ $I_{GT} = 20\text{mA}$			50	A/us

电参数曲线图 / Electrical Characteristic Curve



**波峰焊温度曲线图(无铅) / Temperature Profile for Dip Soldering(Pb-Free)**



说明：

- 1、预热温度 25 ~ 150°C，时间 60 ~ 90sec;
- 2、峰值温度 255±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.:255±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

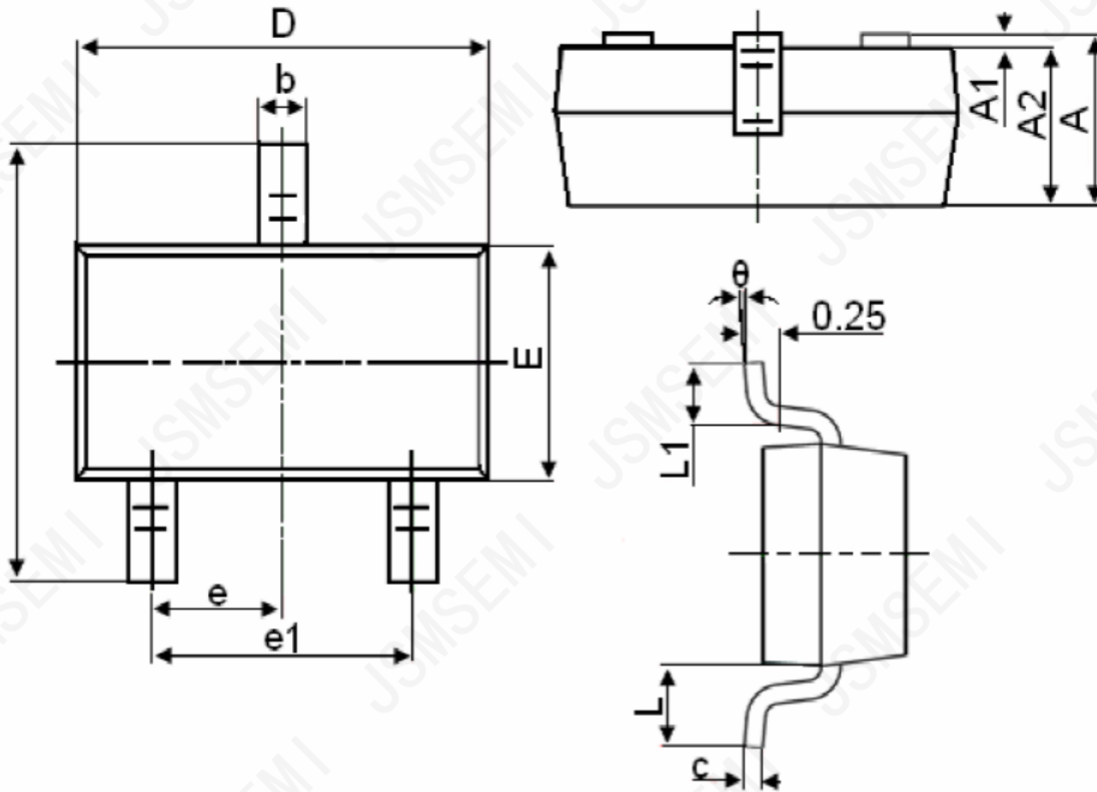
时间：10±1 sec.

Temp.:270±5°C

Time:10±1 sec

## Package Information

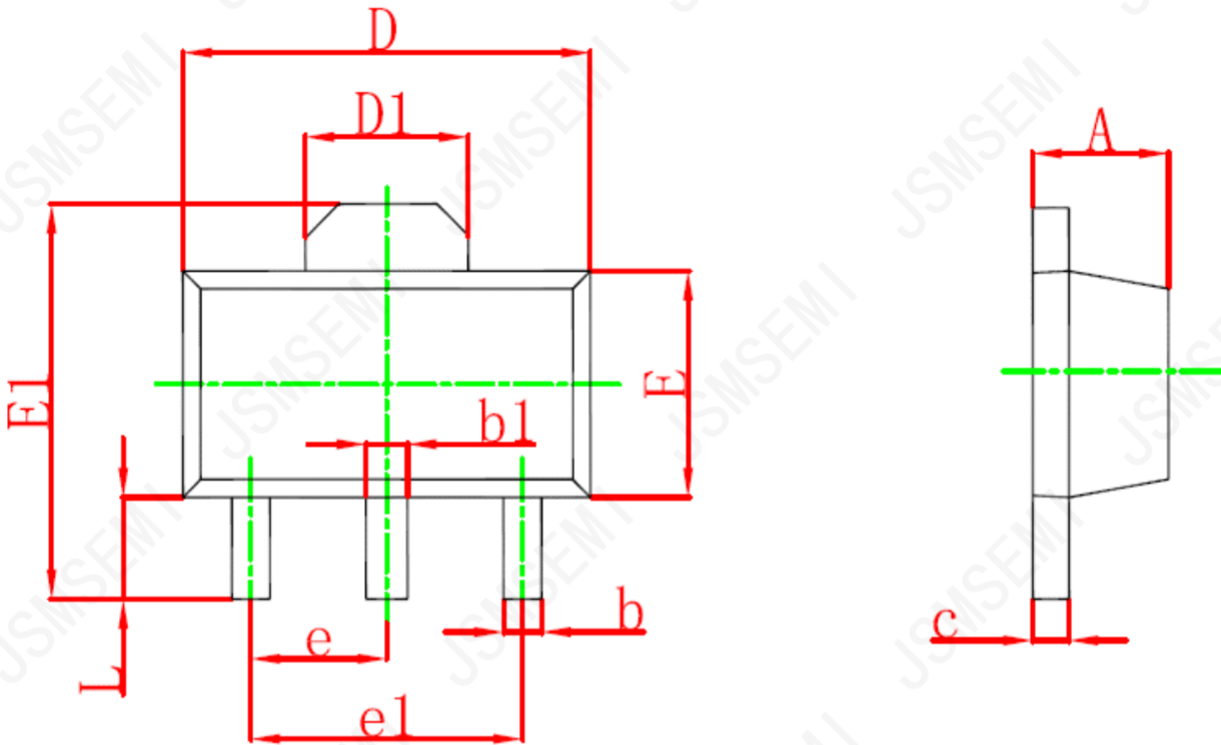
SOT-23



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
$\theta$	0°	8°	0°	8°

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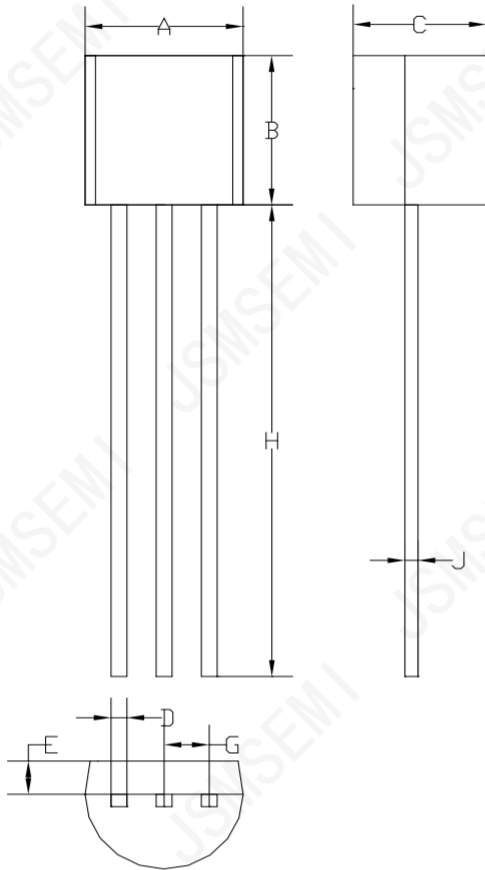
SOT-89



Symbol	Dimensions in Millimeters(mm)		Dimensions in Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF		0.061 REF	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP		0.060 TYP	
e1	3.000 TYP		0.118 TYP	
L	0.900	1.200	0.035	0.047

## Package Information

TO-92



TO-92		
Dim	Min	Max
A	4.4	4.7
B	4.3	4.7
C	3.43 Typical	
D	0.38	0.55
E	1.1	1.4
G	1.27 Typical	
H	14.1	14.5
J	0.36	0.51
All Dimensions in mm		