

<b>X04</b>		
	单向可控硅 THYRISTOR	版本号 201603-A

## 产品概述 GENERAL DESCRIPTION

X04单向可控硅采用穿通隔离台面结构，复合玻璃钝化PN结表面保护工艺技术，dv/dt高，可靠性高，适用于控温、调光、马达控制。

X04Thyristor is fabricated using separation diffusion processes ,the junction termination areas are passivated with glass. Thanks to highly dv/dt and reliability,the Triacs series is suitable for domestic lighting ,heating and motor speed controllers.

## 主要参数 MAIN CHARACTERISTICS

参数 Parameter	数值 Value	单位 Unit
$I_{T(RMS)}$	4	A
$V_{DRM}/V_{RRM}$	600&800	V
$I_{GT}$	200	$\mu A$

## 产品特性

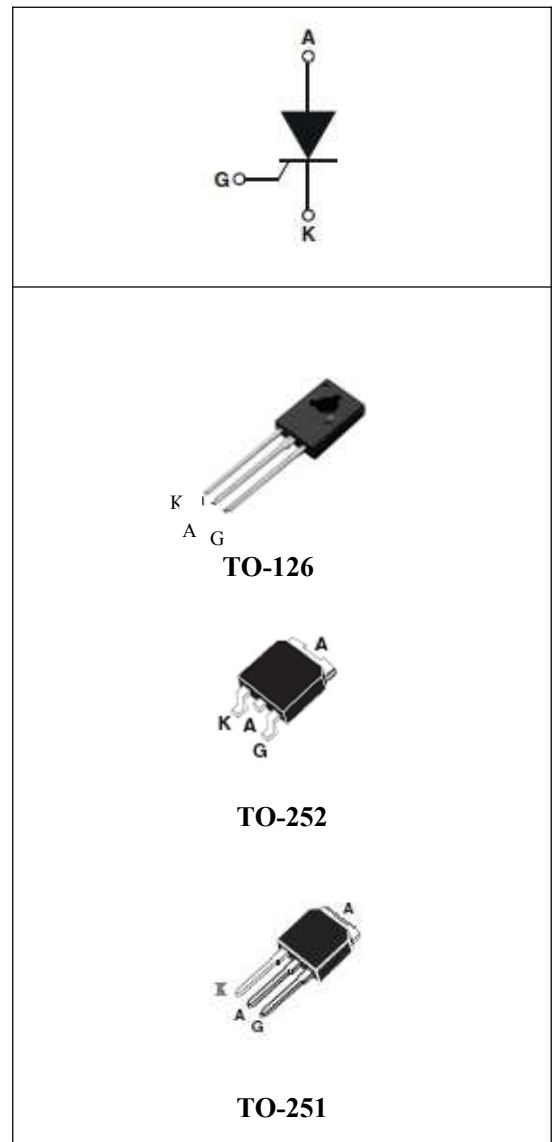
## FEATURES

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>● dv/dt高</li> <li>● 通态压降低</li> <li>● Rohs环保产品</li> </ul> | <ul style="list-style-type: none"> <li>● Highly dv/dt</li> <li>● Low on-state voltage</li> <li>● Rohs Products</li> </ul> |
|---|---|

## 应用领域 APPLICATIONS

主要应用于调光、控温、马达控制。

domestic lighting ,heating and motor speed controllers.



## 极限值(除非另有规定, T<sub>j</sub>=25℃) ABSOLUTE RATINGS

(T<sub>j</sub>=25℃, unless otherwise specified)

符号 Symbol	参数 Parameter	数值 Value	单位 Unit
I <sub>T(RMS)</sub>	RMS 通态电流 RMS on-state current (full sine wave)	T <sub>lead</sub> ≤51℃	4 A
I <sub>TSM</sub>	通态峰值浪涌电流 Non repetitive surge peak on-state current	F=50Hz, t=20ms	30 A
I <sup>2</sup> t	I <sup>2</sup> t 耗散值 I <sup>2</sup> t value for fusing	T <sub>p</sub> =10ms	6 A <sup>2</sup> s
di/dt	通态电流上升值 Critical rate of rise of on-state current	F=120Hz, T <sub>j</sub> =125℃	50 A/μs
I <sub>GM</sub>	门极峰值电流 Peak gate current	T <sub>p</sub> =20μs, T <sub>j</sub> =125℃	1.0 A
P <sub>G(AV)</sub>	平均门极耗散功率 Average gate power dissipation	T <sub>j</sub> =125℃	0.3 W
T <sub>stg</sub>	贮存结温范围 Storage junction temperature range		-40+150 ℃
T <sub>j</sub>	工作结温范围 Operating junction temperature range		-40+125 ℃

## 电参数(除非另有规定, T<sub>j</sub>=25℃) ELECTRICAL CHARACTERISTICS

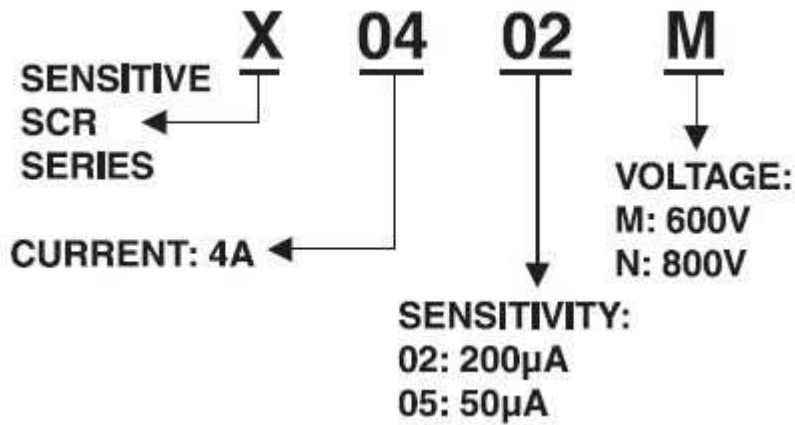
(T<sub>j</sub>=25℃, unless otherwise specified)

参数 Parameter	符号 Symbol	规范值 Value		单位 Unit	测试条件 Test Conditions
		X0405	X0402		
触发电流 Gate trigger current	I <sub>GT</sub>	min	20	-	μA V <sub>D</sub> =6V, I <sub>T</sub> =0.01A
		max	50	200	
触发电压 Gate trigger voltage	V <sub>GT</sub>	1.0		V	V <sub>D</sub> =7V, I <sub>T</sub> =0.01A
维持电流 Holding current	I <sub>H</sub>	5		mA	V <sub>D</sub> =7V, I <sub>T</sub> =0.01A
擎住电流 Latching current	I <sub>L</sub>	8		mA	V <sub>D</sub> =7V, I <sub>T</sub> =0.01A
电压上升率 Rise of off-state voltage	dv/dt	10	15	V/μS	V <sub>D</sub> =67%V <sub>DRM</sub>
通态压降 Peak on-state voltage	V <sub>TM</sub>	1.6		V	I <sub>T</sub> =5A
断态漏电流 Peak repetitive forward blocking current	I <sub>DRM</sub>	10		μA	V <sub>RRM</sub> =V <sub>DRM</sub> , T <sub>j</sub> =25℃
	I <sub>RRM</sub>	0.5		mA	V <sub>RRM</sub> =V <sub>DRM</sub> , T <sub>j</sub> =125℃

### 热特性 THERMAL RESISTANCES

符号 Symbol	参数 Parameter		数值 Value	单位 Unit
Rth(j-c)	Junction to case(AC)	TO-126	4.1	K/W
		TO-252	1.6	
		TO-251	1.6	
Rth(j-a)	Junction to ambient	TO-126	100	K/W
		TO-252	70	
		TO-251	100	

### ORDERING INFORMATION



特征曲线 ELECTRICAL CHARACTERISTICS (CURVES)

图1 最大耗散功率与RMS通态电流关系

Fig.1.Maximum Power Dissipation Versus on-state current

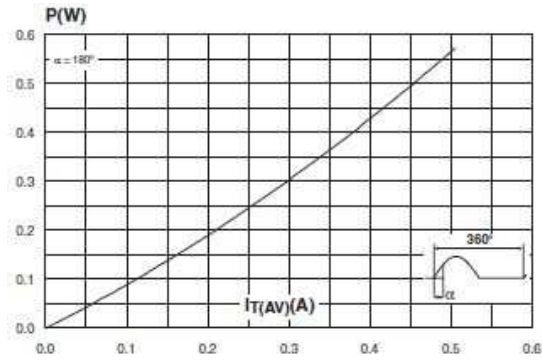


图3 通态特性

Fig.3.On-State Characteristics

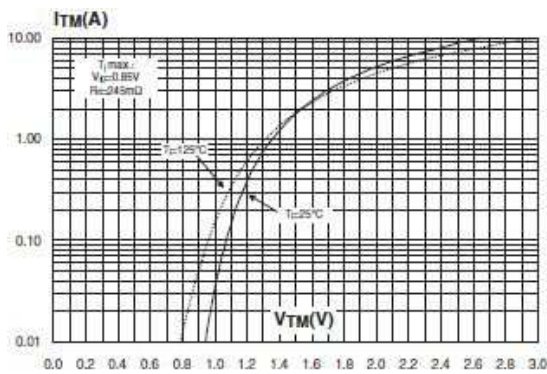


图5  $I_{GT}$ 、 $I_H$ 、 $I_L$ 相对值（相对于25°C）与结温关系

Fig.5.Relative Variation Of Gate Trigger Current, Holding Current And Latching Current Versus Junction Temperature (Typical Value)

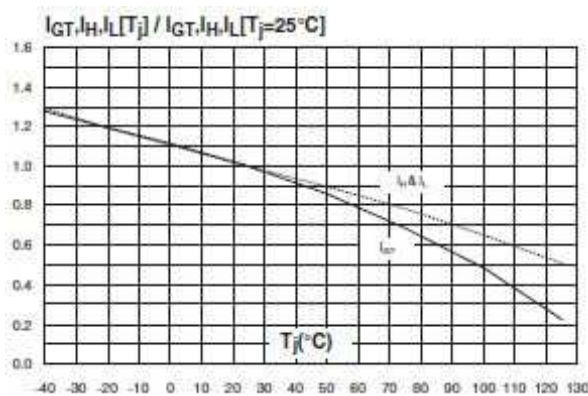


图2 平均通态电流与Tc温度关系

Fig.2.  $I_{T(AV)}$  On-state Current Versus  $T_L$

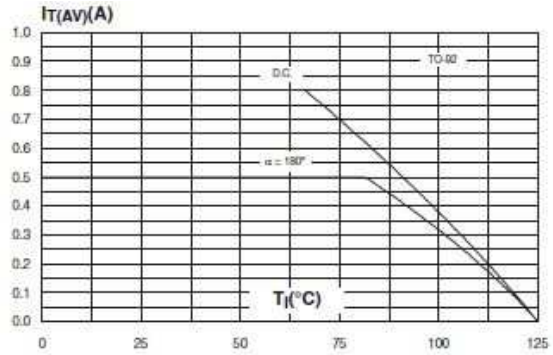
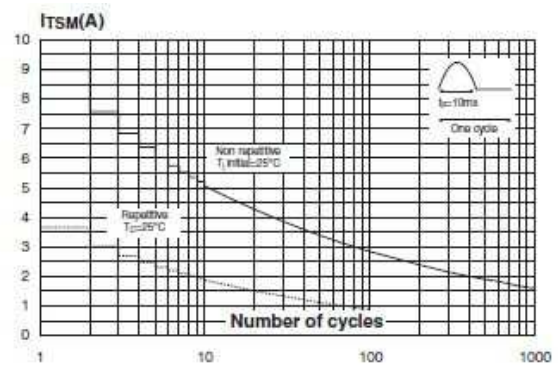


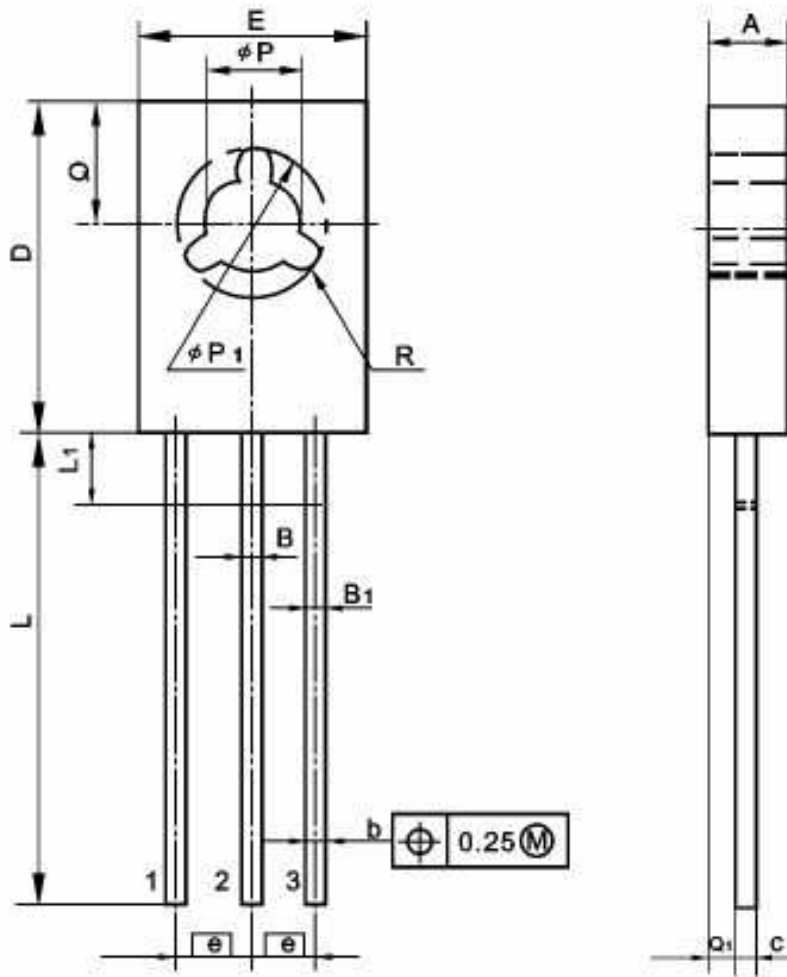
图4 通态浪涌峰值电流与周期数关系

Fig.4.Surge Peak On-state Current Versus Number Cycles



封装尺寸 PACKAGE MECHANICAL DATA

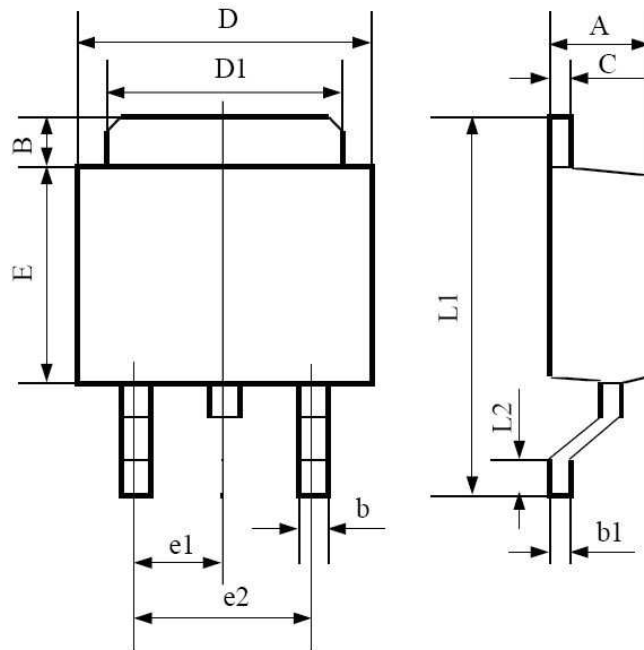
TO-126



UNIT: mm

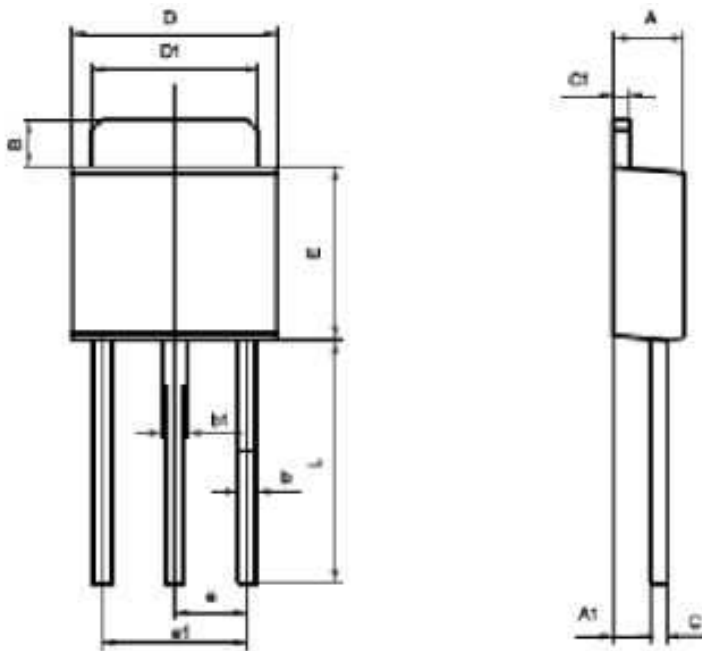
SYMBOL	min	nom	max	SYMBOL	min	nom	max
A	2.3		2.8	L	15.3		16.5
B	1.0		1.2	L1			2.54
B1	0.8		1.0	$\phi P$	3.0		3.2
b	0.65		0.88	$\phi P1$		5.0	
c	0.45		0.60	Q	3.6		4.4
D	10.5		11.1	Q1	0.9		1.5
E	7.2		7.8	R		0.5*	
e		2.29					

## TO-252



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	2.20	2.40	0.087	0.094
B	1.35	1.65	0.053	0.065
b	0.50	0.70	0.02	0.028
b1	0.45	0.56	0.017	0.022
C	0.46	0.56	0.018	0.022
D	6.35	6.65	0.25	0.262
D1	5.20	5.40	0.205	0.212
E	5.80	6.10	0.228	0.240
e1	2.25	2.35	0.089	0.093
e2	4.50	4.70	0.177	0.185
L1	9.80	10.40	0.386	0.409
L2	0.95	1.45	0.037	0.057

## TO-251



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	2.200	2.400	0.087	0.094
A1	1.100	1.300	0.043	0.051
B	1.350	1.650	0.053	0.065
b	0.500	0.700	0.020	0.028
bf	0.700	0.900	0.028	0.035
e	0.460	0.560	0.018	0.022
e1	0.460	0.560	0.018	0.022
D	6.350	6.650	0.250	0.262
D1	5.200	5.400	0.205	0.213
E	5.400	6.600	0.213	0.224
a	2.300TYP		0.091TYP	
e1	4.500	4.700	0.177	0.185
L	7.500	7.900	0.295	0.311

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