X0202

单向可控硅
THYRISTOR

版本号
201603-A

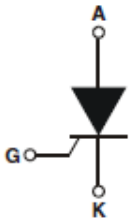
产品概述 GENERAL DESCRIPTION

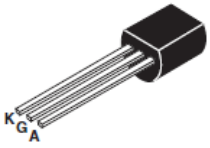
X0202 单向可控硅采用穿通隔离台面结构，复合玻璃钝化PN结表面保护工艺技术，dv/dt高，可靠性高，适用于控温、调光、马达控制。

X0202 Thyristor 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.

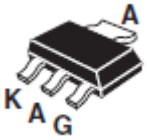
主要参数 MAIN CHARACTERISTICS

参数 Parameter	数值 Value	单位 Unit
$I_{T(RMS)}$	1.25	A
V_{DRM}/V_{RRM}	600	V
I_{GT}	200	μA





TO-92



SOT-223

产品特性 FEATURES

- dv/dt高
- 通态压降低
- Rohs环保产品

- Highly dv/dt
- Low on-state voltage
- Rohs Products

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，Tj=25℃) ABSOLUTE RATINGS

(Tj=25℃,unless otherwise specified)

符号 Symbol	参数 Parameter		数值 Value	单位 Unit
$I_{T(RMS)}$	RMS 通态电流 RMS on-state current (full sine wave)	T_{lead}≤51℃	1.25	A
I_{TSM}	通态峰值浪涌电流 Non repetitive surge peak on-state current	F=50H_Z ,t=20ms	20	A
I^2t	I^2t 耗散值 I^2t value for fusing	T_P=10ms	2.5	A^2s
di/dt	通态电流上升值 Critical rate of rise of on-state current	F=120H_Z,Tj=125℃	50	A/μs
I_{GM}	门极峰值电流 Peak gate current	TP=20μs,Tj=125℃	1.2	A
$P_{G(AV)}$	平均门极耗散功率 Average gate power dissipation	Tj=125℃	0.2	W
Tstg	贮存结温范围 Storage junction temperature range		-40-+150	℃
Tj	工作结温范围 Operating junction temperature range		-40-+125	℃

电参数(除非另有规定，Tj=25℃) ELECTRICAL CHARACTERISTICS

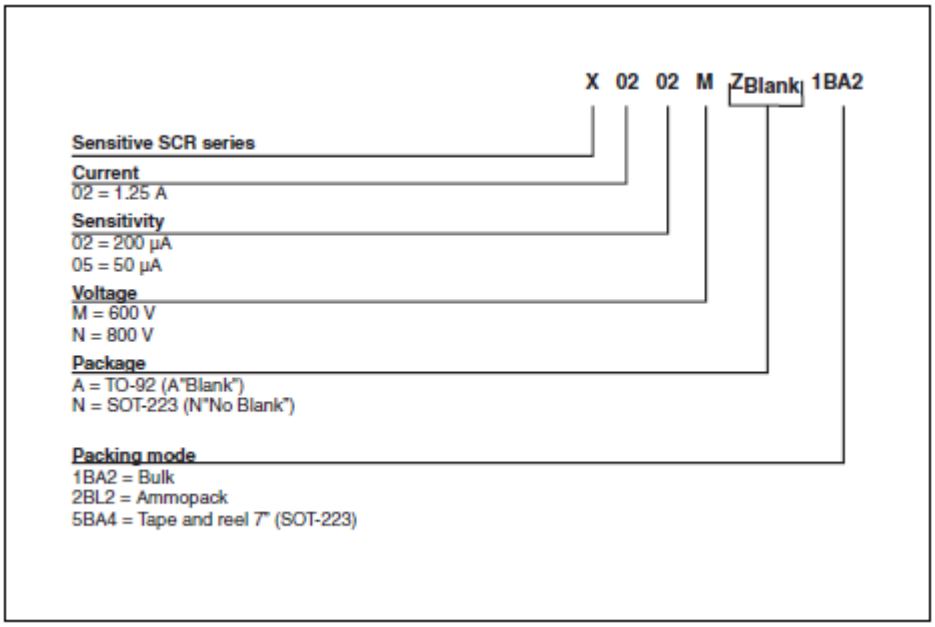
(Tj=25℃,unless otherwise specified)

参数 Parameter	符号 Symbol		规范值 Value		单位 Unit	测试条件 Test Conditions
			X0202	X0205		
触发电流 Gate trigger current	I_{GT}	MIN		20	μA	V_D=6V,I_T=0.01A
		MAX	200	50		
触发电压 Gate trigger voltage	V_{GT}		0.8		V	V_D=7V, I_T=0.01A
维持电流 Holding current	I_H		5		mA	V_D=7V,I_T=0.01A
擎住电流 Latching current	I_L		8		mA	V_D=7V,I_T=0.01A
电压上升率 Rise of off- state voltage	dv/dt		10	15	V/μS	V_D=67%V_{DRM}
通态压降 Peak on-state voltage	V_{TM}		1.5		V	I_T=2.5A
断态漏电流 Peak repetitive forward blocking current	I_{DRM}		5		μA	V_{RRM}=V_{DRM},Tj = 25℃
	I_{RRM}		0.5		mA	V_{RRM}=V_{DRM},Tj =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-92	60	℃/W
		SOT-223	25	
Rth(j-a)	Junction to ambient	TO-92	150	℃/W
		SOT-223	60	

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

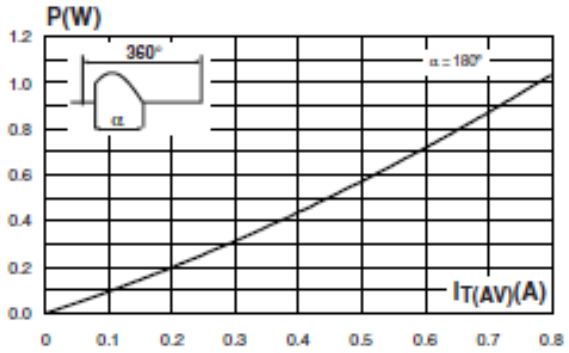


图2 平均通态电流与Tc温度关系
Fig.2. $I_{T(AV)}$ On-state Current Versus TL

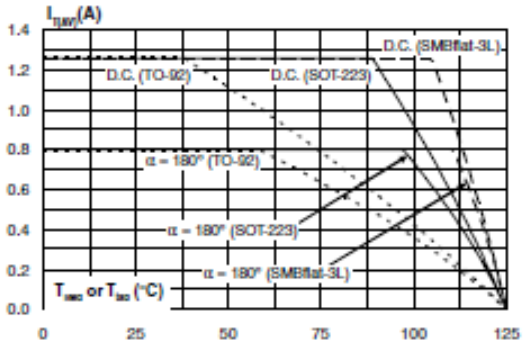


图3 通态特性
Fig.3.On-State Characteristics

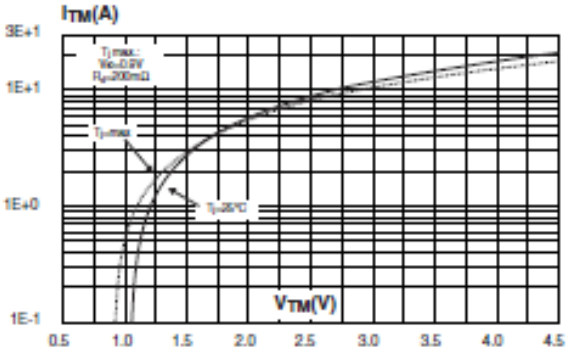


图4 通态浪涌峰值电流与周期数关系
Fig.4.Surge Peak On-state Current Versus Number Cycles

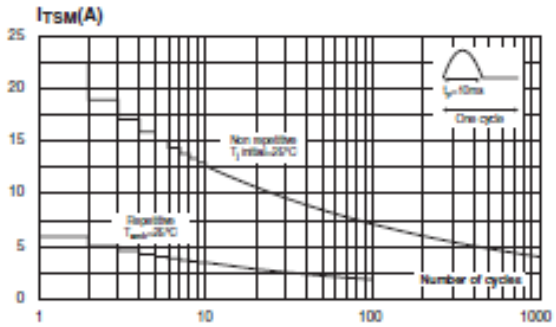
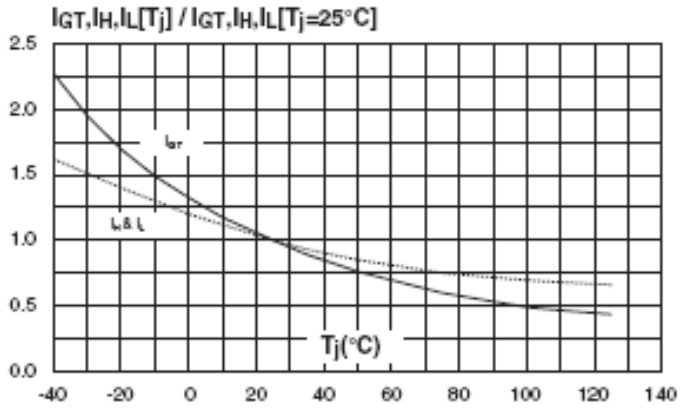
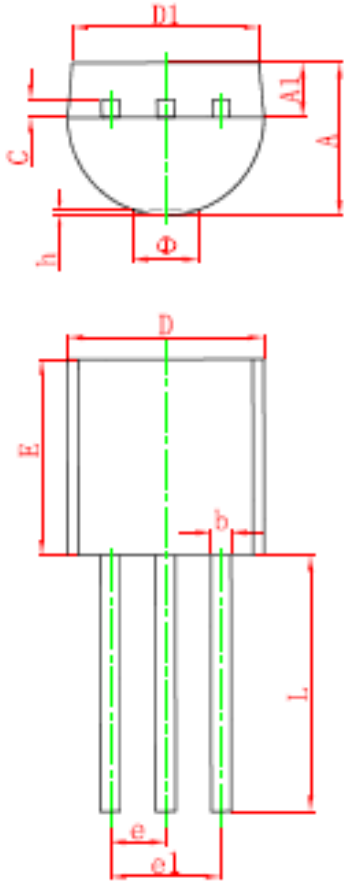


图5 IGT、IH、IL相对值（相对于25℃）与结温关系
Fig.5.Relative Variation Of Gate Trigger Current , Holding Current And Latching Current Versus Junction Temperature (Typical Value)



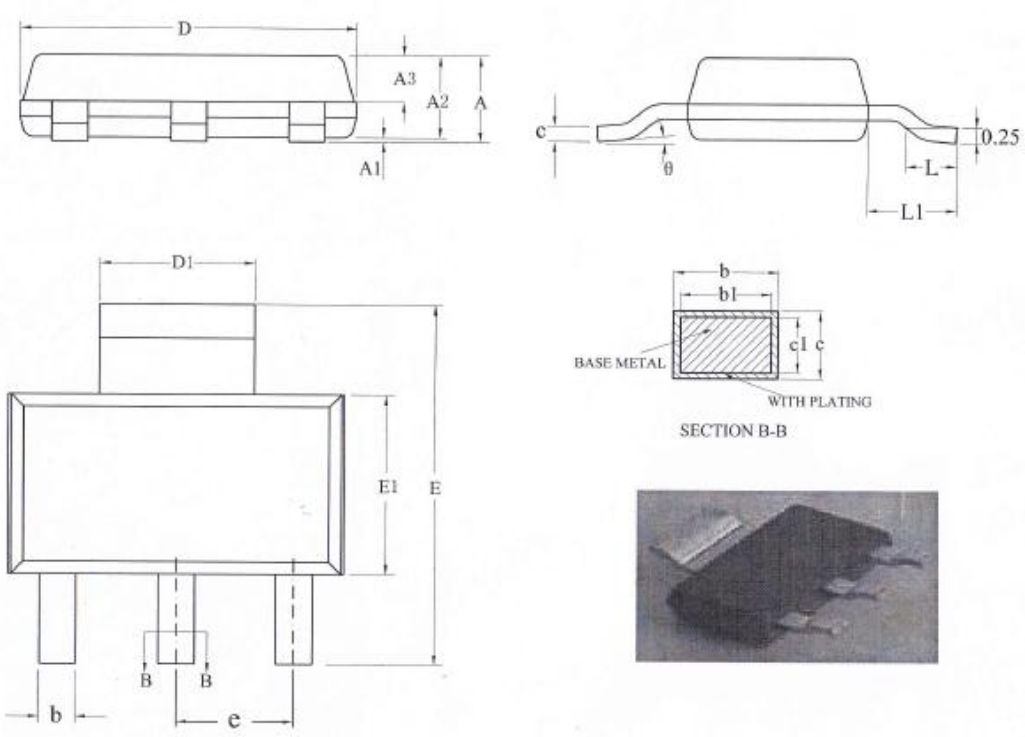
封装尺寸 PACKAGE MECHANICAL DATA

TO-92



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP.		0.050 TYP.	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

SOT-223



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	1.50	1.65	1.80
A1	0.03	0.06	0.09
A2	1.50	1.60	1.70
A3	0.85	0.90	0.95
b	0.69	—	0.77
b1	0.68	0.71	0.74
c	0.30	—	0.34
c1	0.29	0.30	0.31
D	6.40	6.50	6.60
D1	3.00REF		
E	6.80	7.00	7.20
E1	3.40	3.50	3.60
e	2.30BSC		
L	0.90	—	1.15
L1	1.75REF		
θ	0	—	7°