

X04		
	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

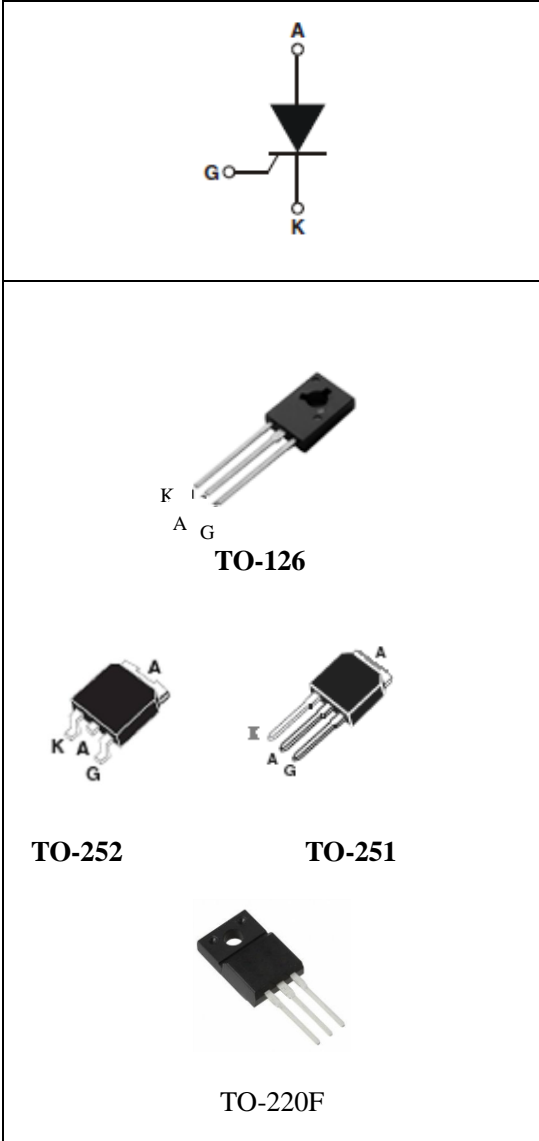
参数 Parameter	数值 Value	单位 Unit
$I_{T(RMS)}$	4	A
V_{DRM}/V_{RRM}	600&800	V
I_{GT}	200	μA

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, $T_j=25^\circ\text{C}$) ABSOLUTE RATINGS(T_j=25°C, 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)	$T_{\text{lead}} \leq 51^\circ\text{C}$	4 A
I _{TSM}	通态峰值浪涌电流 Non repetitive surge peak on-state current	F=50Hz, t=20ms	30 A
I ² t	I ² t 耗散值 I ² t value for fusing	T _p =10ms	6 A ² s
di/dt	通态电流上升值 Critical rate of rise of on-state current	F=120Hz, T _j =125°C	50 A/μs
I _{GM}	门极峰值电流 Peak gate current	T _p =20μs, T _j =125°C	1.0 A
P _{G(AV)}	平均门极耗散功率 Average gate power dissipation	T _j =125°C	0.3 W
T _{stg}	贮存结温范围 Storage junction temperature range		-40~+150 °C
T _j	工作结温范围 Operating junction temperature range		-40~+125 °C

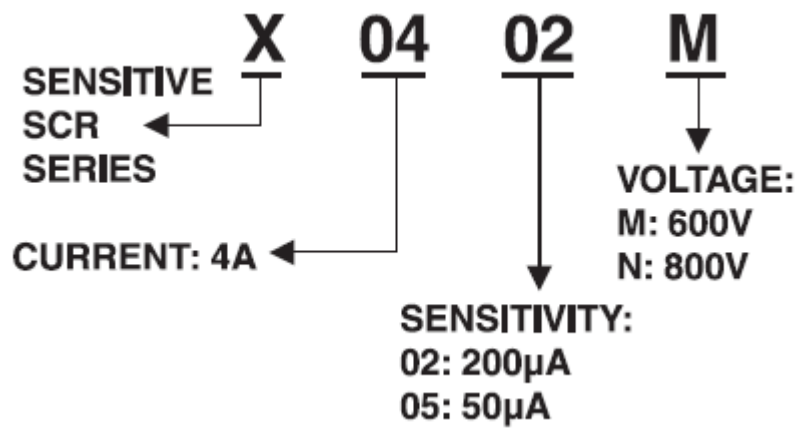
电参数(除非另有规定, $T_j=25^\circ\text{C}$) ELECTRICAL CHARACTERISTICS(T_j=25°C, unless otherwise specified)

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 _{GT}	min	20	-	μA V _D =6V, I _T =0.01A
		max	50	200	
触发电压 Gate trigger voltage	V _{GT}	1.0		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}	1.6		V	I _T =5A
断态漏电流 Peak repetitive forward blocking current	I _{DRM} I _{RRM}	10		μA	V _{RRM} =V _{DRM} , T _j =25°C
		0.5		mA	V _{RRM} =V _{DRM} , T _j =125°C



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	°C/W
		TO-252	1.6	
		TO-251	1.6	
		TO-220F	3.3	
Rth(j-a)	Junction to ambient	TO-126	100	°C/W
		TO-252	70	
		TO-251	100	
		TO-220F	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

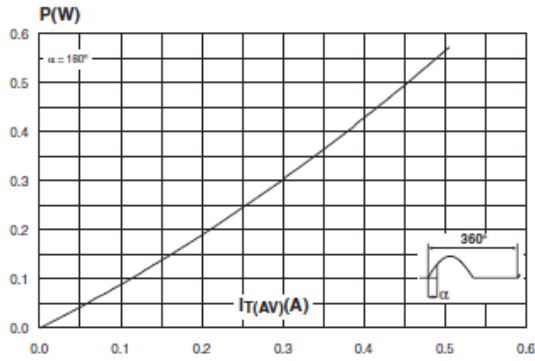


图3 通态特性
Fig.3.On-State Characteristics

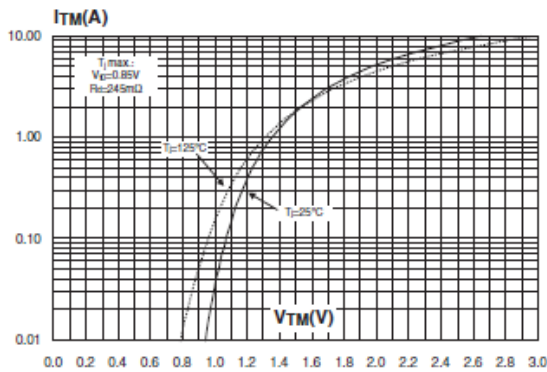


图5 I_{GT} 、 I_H 、 I_L 相对值（相对于25°C）与结温关系

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

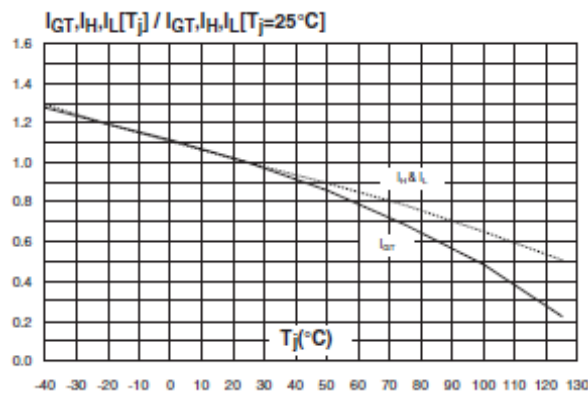


图2 平均通态电流与Tc温度关系
Fig.2. $I_{T(AV)}$ On-state Current Versus TL

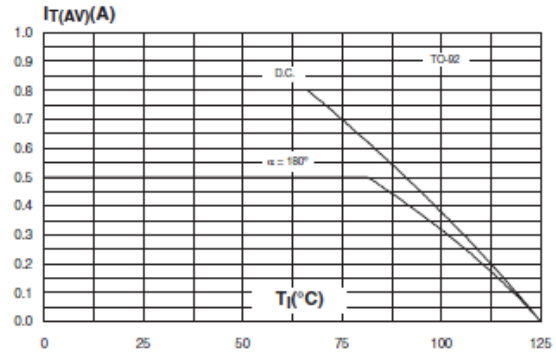
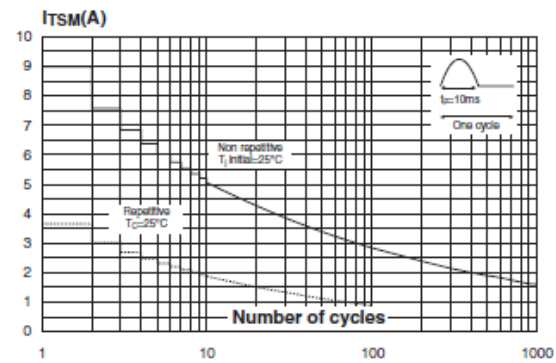
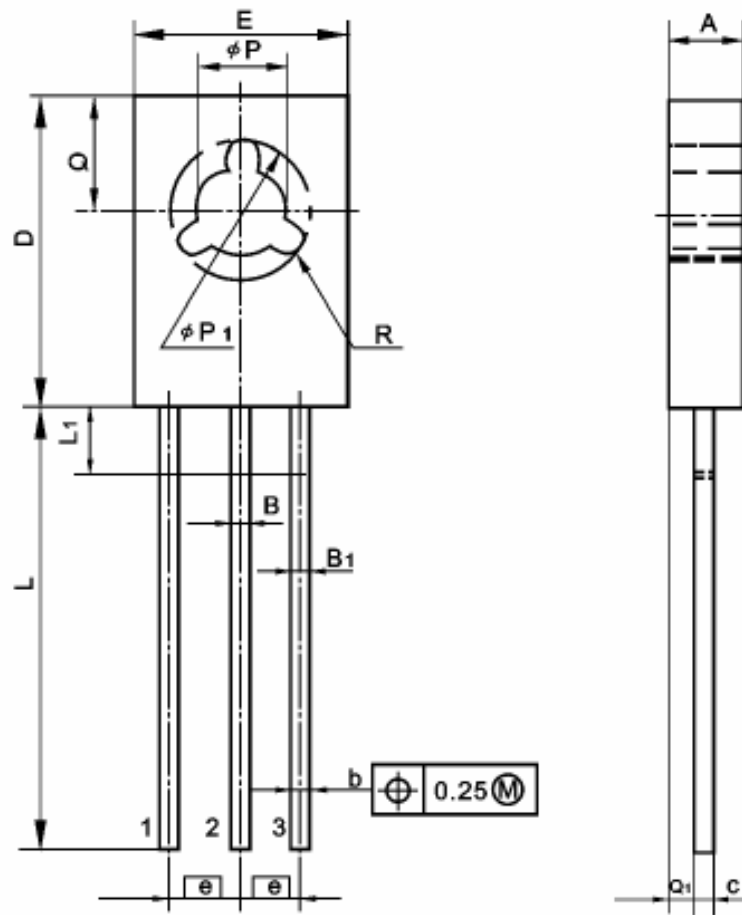


图4 通态浪涌峰值电流与周期数关系
Fig.4.Surge Peak On-state Current Versus Number Cycles



封装尺寸 PACKAGE MECHANICAL DATA

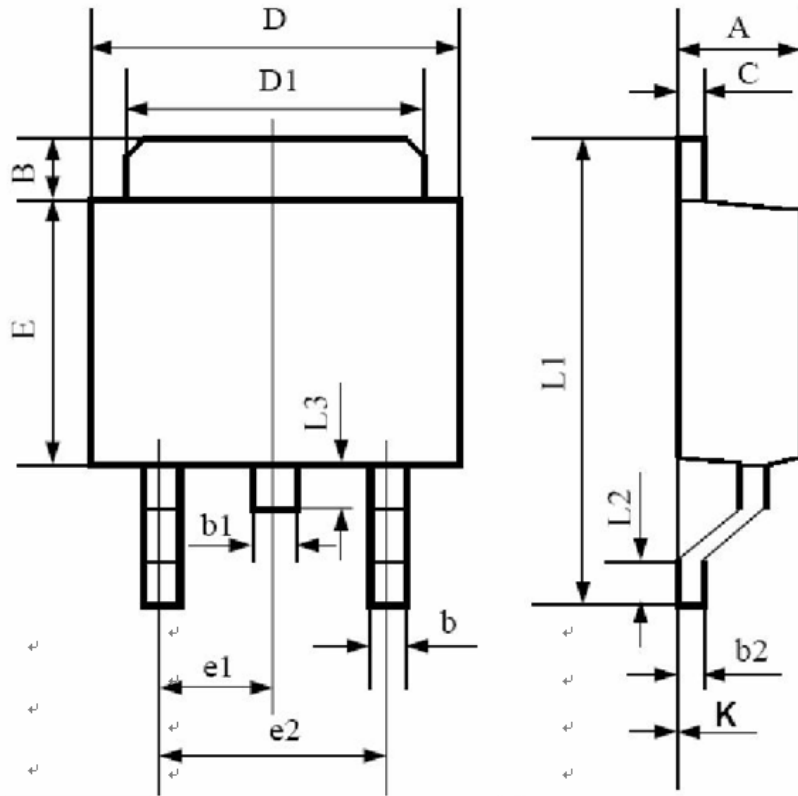
TO-126



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	ϕP	3.0		3.2
b	0.65		0.88	ϕP_1		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					

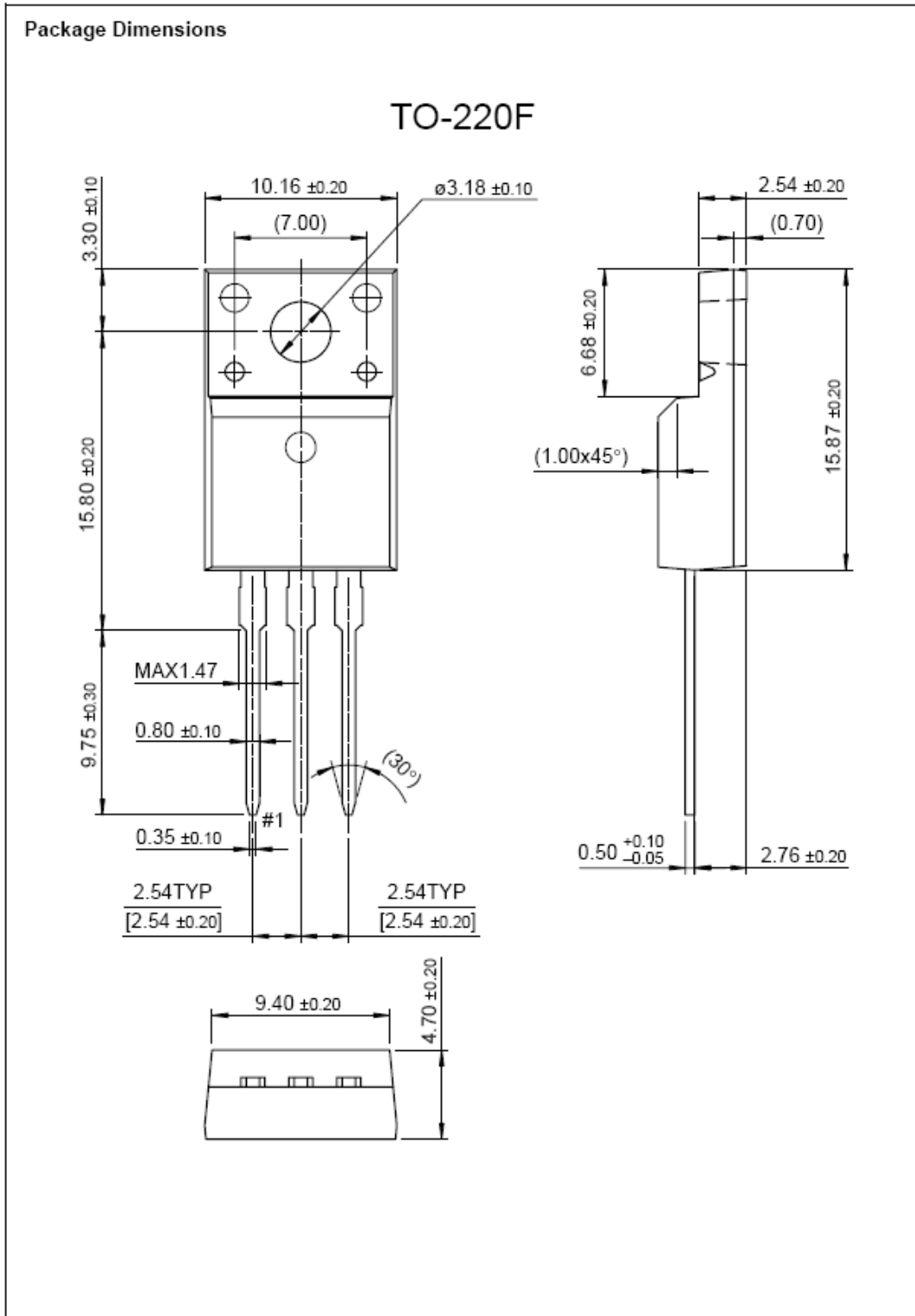
TO-252



符号	公制尺寸		英制尺寸	
	最小	最大	最小	最大
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	0.70	0.90	0.028	0.035
b2	0.46	0.56	0.018	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	10.30	0.386	0.406
L2	0.95	1.45	0.037	0.057
L3	0.8	1.10	0.031	0.043
K	-0.1	0.00	-0.004	0.000

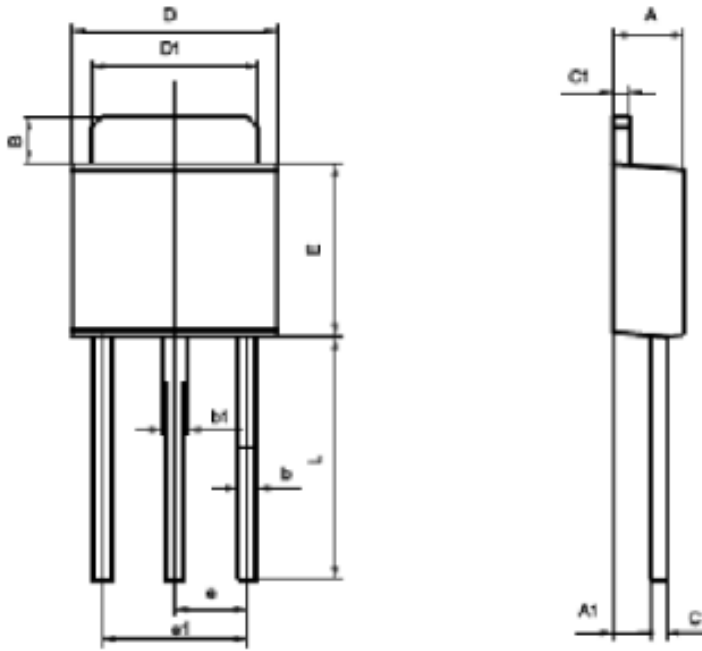
TO-220F





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
c	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	5.600	0.213	0.224
s	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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