

TYN820

单向可控硅
THYRISTOR

版本号
201603-A

产品概述 GENERAL DESCRIPTION

TYN820 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。

TYN820 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
$I_{T(RMS)}$	20	A
V_{DRM}/V_{RRM}	800	V
I_{GT}	20	mA

产品特性

- dv/dt高
- 通态压降低
- Rohs环保产品

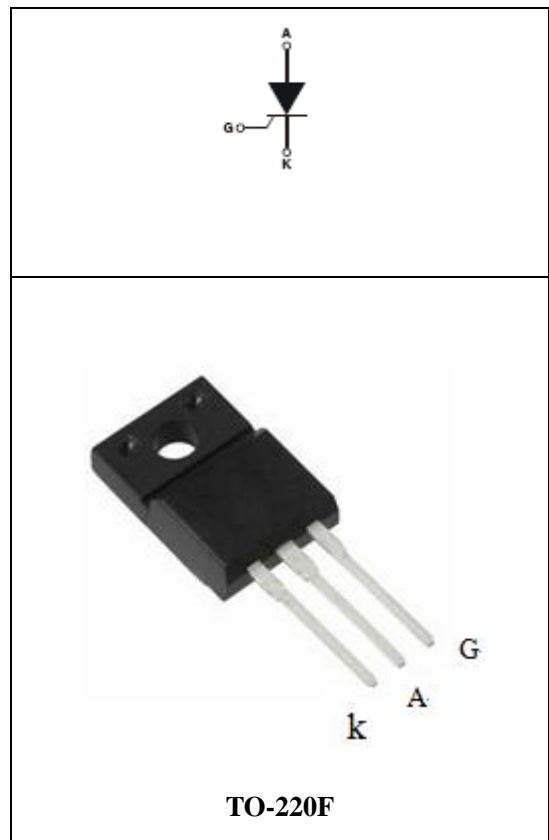
FEATURES

- 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

($T_j=25^\circ\text{C}$, 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)	$T_C=90^\circ\text{C}$ 20	A
I_{TSM}	通态峰值浪涌电流 Non repetitive surge peak on-state current	$F=50\text{Hz}, t=20\text{ms}$ 210	A
I^2t	I^2t 耗散值 I^2t value for fusing	$T_P=10\text{ms}$ 220.5	A^2s
di/dt	通态电流上升值 Critical rate of rise of on-state current	$F=120\text{Hz}, T_j=125^\circ\text{C}$ 50	$\text{A}/\mu\text{s}$
I_{GM}	门极峰值电流 Peak gate current	$T_P=20\mu\text{s}, T_j=125^\circ\text{C}$ 5	A
$P_{G(AV)}$	平均门极耗散功率 Average gate power dissipation	$T_j=125^\circ\text{C}$ 1	W
Tstg	贮存结温范围 Storage junction temperature range	-40+150	$^\circ\text{C}$
T_j	工作结温范围 Operating junction temperature range	-40+150	$^\circ\text{C}$

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

($T_j=25^\circ\text{C}$, unless otherwise specified)

参数 Parameter	符号 Symbol	规范值 Value			单位 Unit	测试条件 Test Conditions
		Min	Typ	Max		
触发电流 Gate trigger current	I_{GT}	-	-	30	mA	$V_D=12\text{V}, I_T=0.1\text{A}$
触发电压 Gate trigger voltage	V_{GT}	-	0.7	1.3	V	$V_D=12\text{V}, I_T=0.1\text{A}$
维持电流 Holding current	I_H	-	16	40	mA	$V_D=12\text{V}, I_T=0.1\text{A}$
擎住电流 Latching current	I_L	-	21	60	mA	$V_D=12\text{V}, I_T=0.1\text{A}$
电压上升率 Rise of off-state voltage	dv/dt	300	-	-	$\text{V}/\mu\text{s}$	$V_D=67\% V_{DRM}$
通态压降 Peak on-state voltage	V_{TM}	-	-	1.5	V	$I_T=32\text{A}$
断态漏电流 Peak repetitive forward blocking current	I_{DRM} I_{RRM}	-	-	5	μA	$V_{RRM}=V_{DRM}, T_j=25^\circ\text{C}$
		-	-	1	mA	$V_{RRM}=V_{DRM}, T_j=150^\circ\text{C}$

热特性 THERMAL RESISTANCES

符号 Symbol	参数 Parameter	数值 Value	单位 Unit
Rth(j-c)	Junction to case(AC)	3.3	K/W
Rth(j-a)	Junction to ambient	60	K/W

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

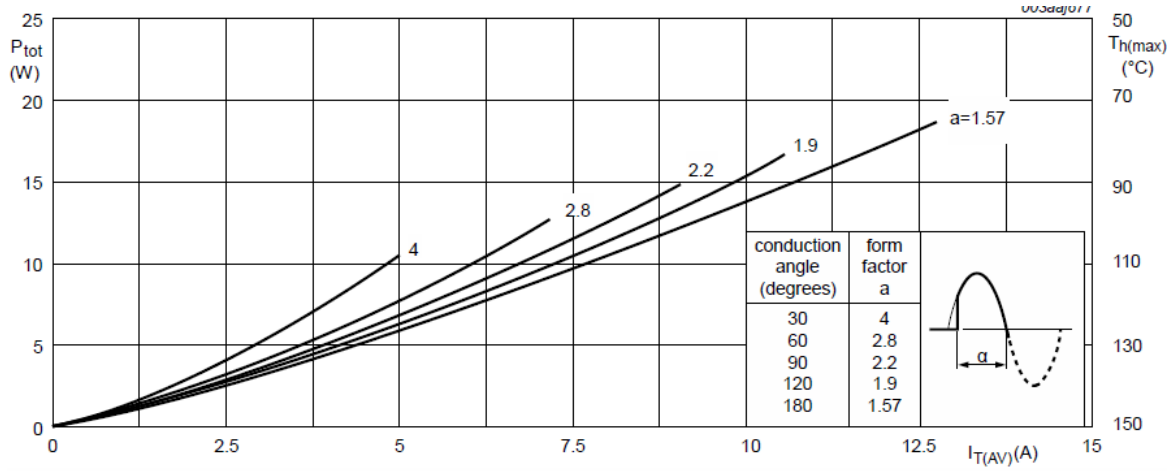


图2 RMS通态电流与Tc温度关系

Fig.2. RMS On-state Current Versus TL

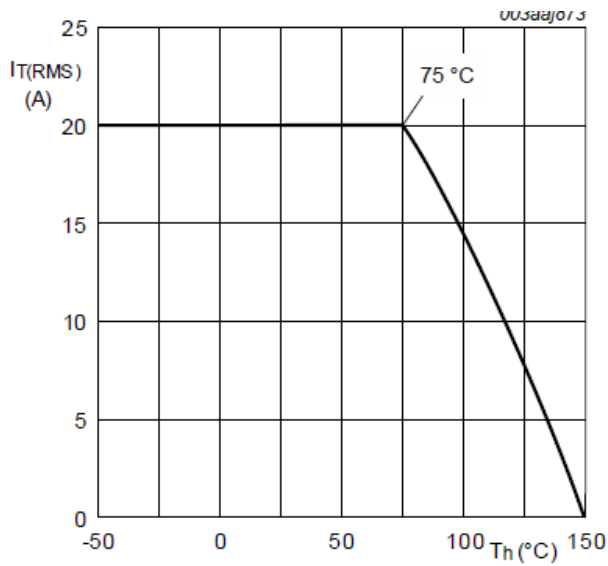
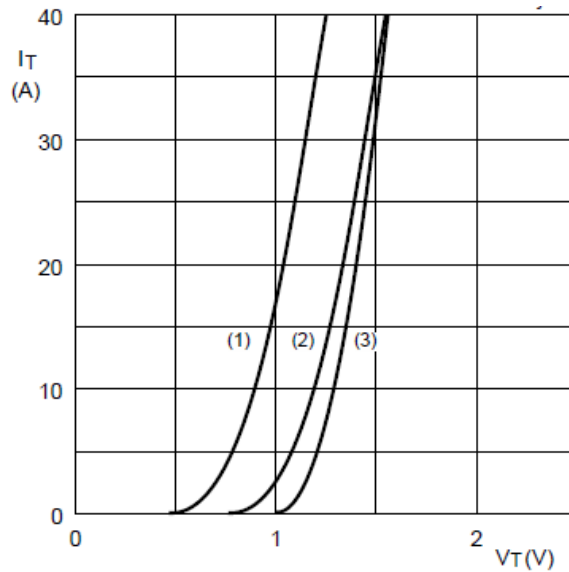


图3 通态特性 Fig.3.On-State Characteristics



$V_o = 1.0485 \text{ V}; R_s = 0.0133 \Omega$

- (1) $T_j = 150 \text{ }^\circ\text{C}$; typical values
- (2) $T_j = 150 \text{ }^\circ\text{C}$; maximum values
- (3) $T_j = 25 \text{ }^\circ\text{C}$; maximum values

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

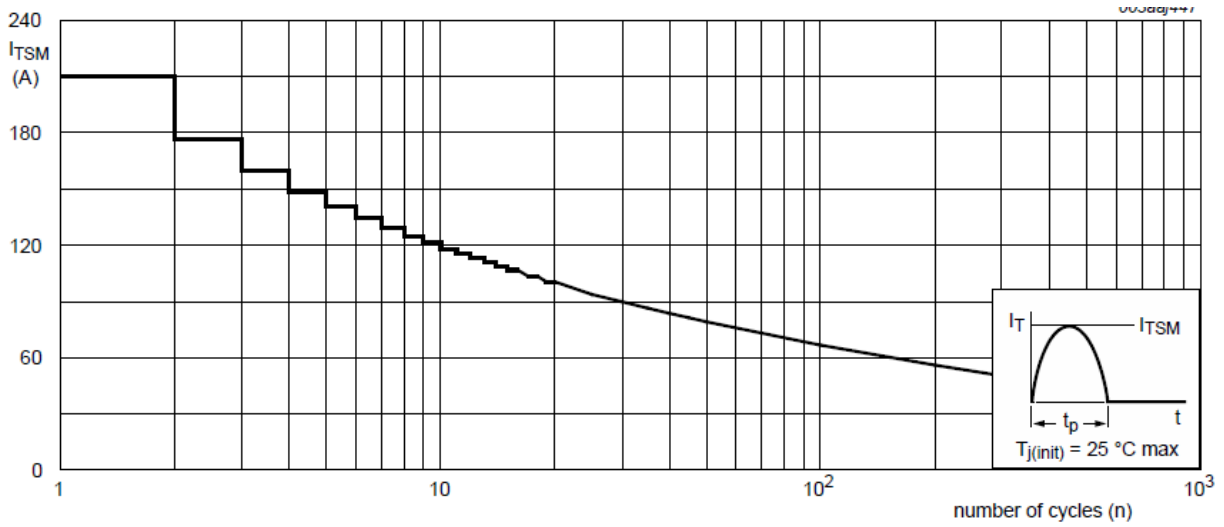
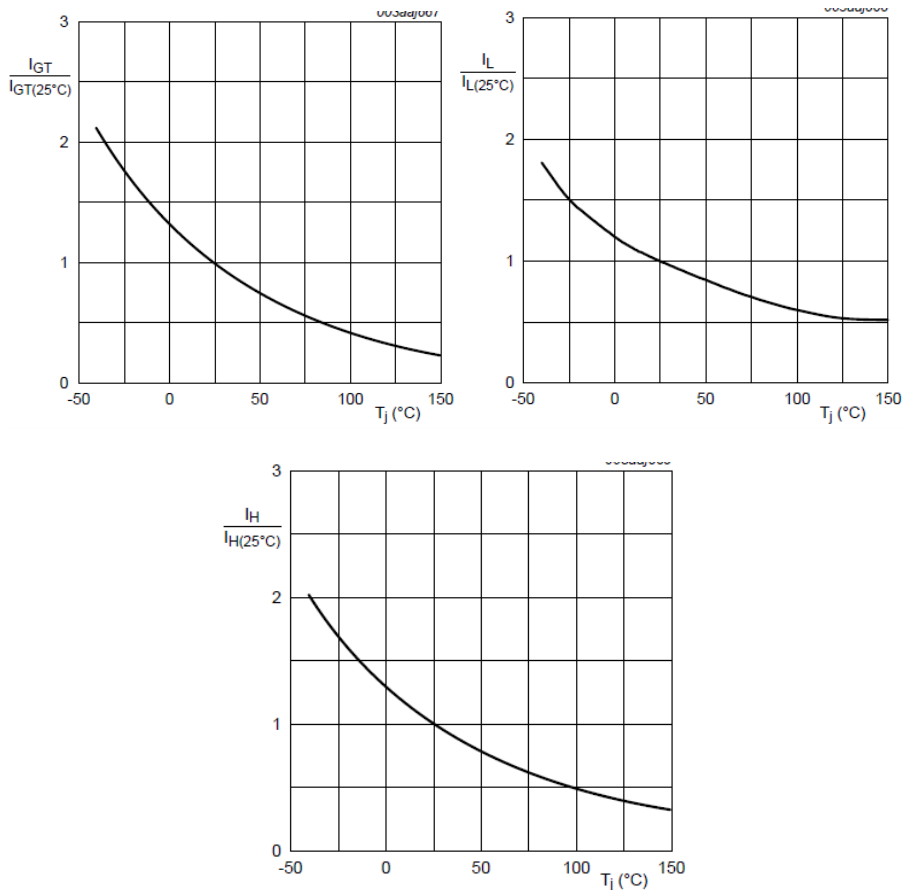
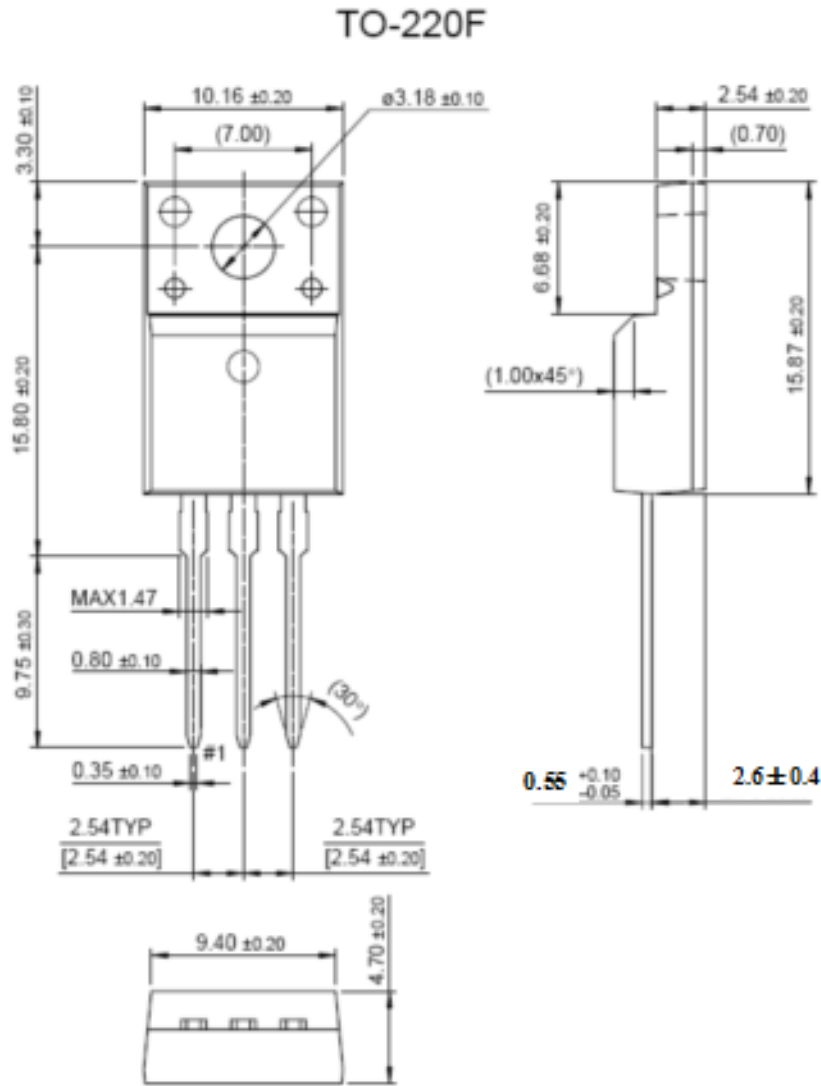


图5 I_{GT} 、 I_H 、 I_L 相对值（相对于25°C）与结温关系

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



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