

BT153		
	单向可控硅 THYRISTOR	版本号 201603-A

产品概述 GENERAL DESCRIPTION

BT153 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。

BT153 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
$I_{T(RMS)}$	25	A
V_{DRM}/V_{RRM}	600&800	V
I_{GT}	40	mA

产品特性

- dv/dt高
- 通态压降低
- Rohs环保产品

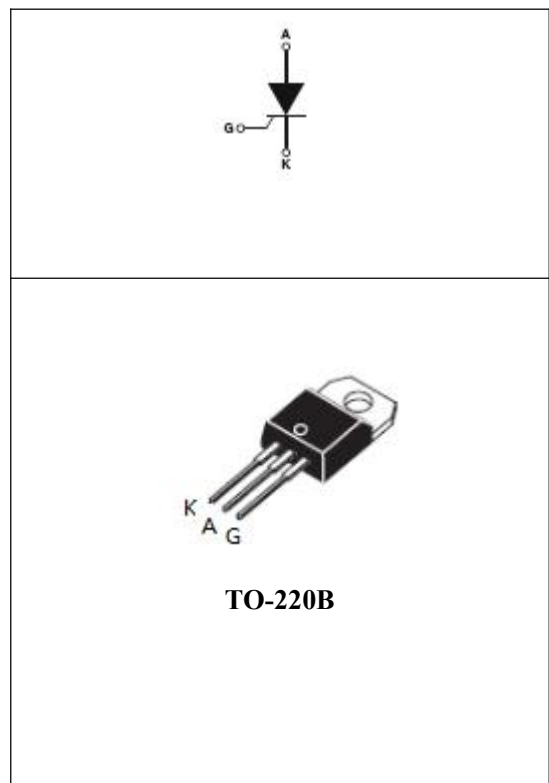
FEATURES

- 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°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 _C =100°C 25	A
I _{T(av)}	额定通态电流 Average on-state current(180° conduction angle)	T _C =100°C 16	A
I _{TSM}	通态峰值浪涌电流 Non repetitive surge peak on-state current	F=50Hz, t=10ms 300	A
I ² t	I ² t 耗散值 I ² t value for fusing	T _P =10ms 450	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 4	A
P _{G(AV)}	平均门极耗散功率 Average gate power dissipation	T _j =125°C 1	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+150	°C

电参数(除非另有规定, T_j=25°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
		Min	Typ	Max		
触发电流 Gate trigger current	I _{GT}	2	-	40	mA	V _D =12V, I _T =0.1A
触发电压 Gate trigger voltage	V _{GT}	-	-	1.5	V	V _D =12V, I _T =0.1A
维持电流 Holding current	I _H	-	-	50	mA	V _D =12V, I _T =0.1A
电压上升率 Rise of off- state voltage	dv/dt	400	-	-	V/μS	V _D =67%V _{DRM}
通态压降 Peak on-state voltage	V _{TM}	-	-	1.7	V	I _T =50A
断态漏电流 Peak repetitive forward blocking current	I _{DRM}	-	-	10	μA	V _{RRM} =V _{DRM} , T _j = 25°C
	I _{RRM}	-	-	4	mA	V _{RRM} =V _{DRM} , T _j =150°C

热特性 THERMAL RESISTANCES

符号 Symbol	参数 Parameter	数值 Value	单位 Unit
R _{th(j-c)}	Junction to case(AC)	1.0	°C/W
R _{th(j-a)}	Junction to ambient	60	°C/W

特征曲线 ELECTRICAL CHARACTERISTICS (CURVES)

图1 最大耗散功率与平均通态电流关系

图2 额定通态电流与Tc温度关系

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

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

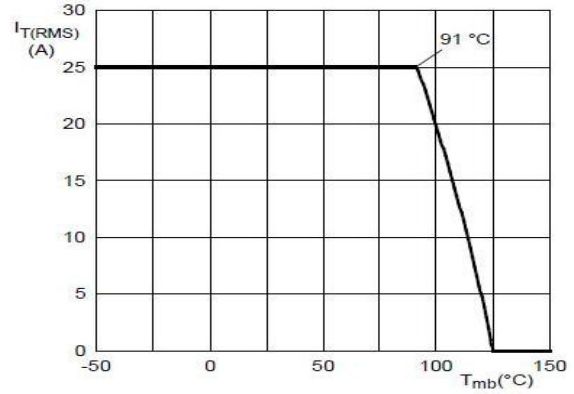
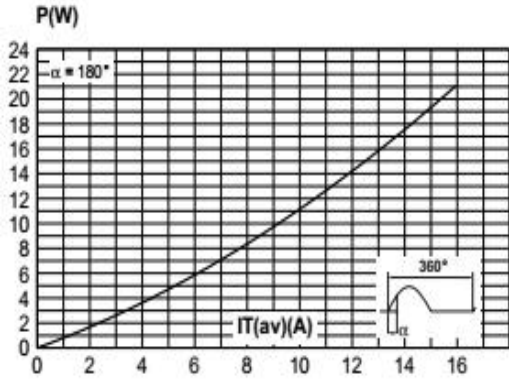


图3 通态特性

图4 通态浪涌峰值电流与周期数关系

Fig.3.On-State Characteristics

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

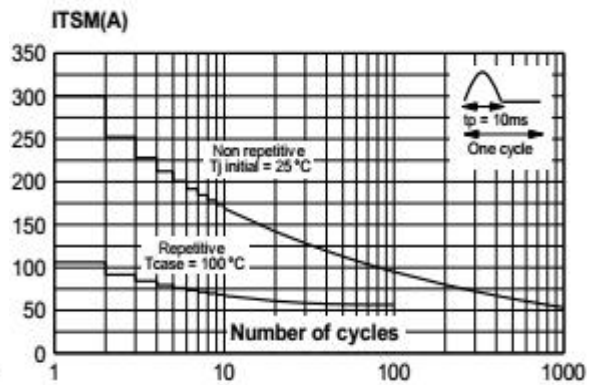
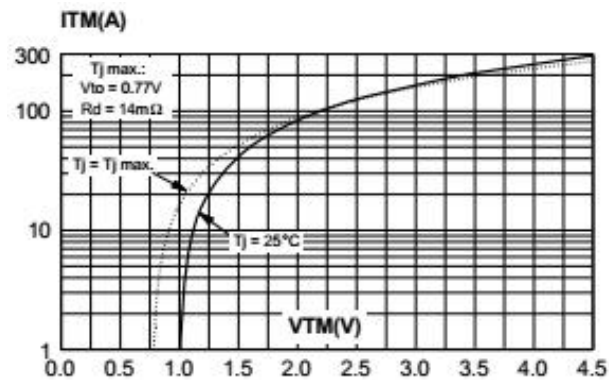
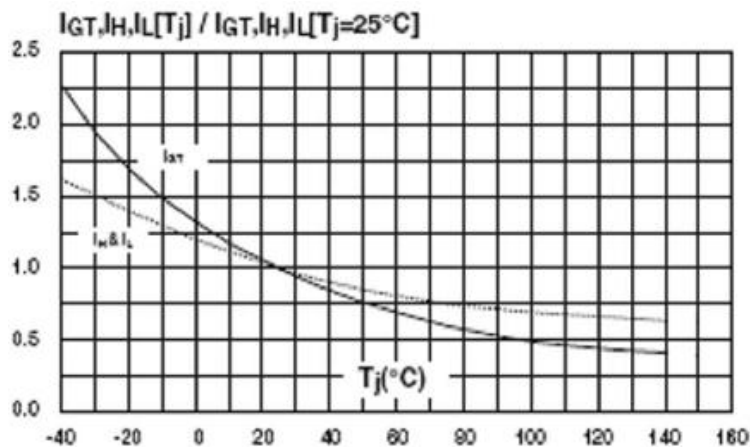


图5 I_{GT} 、 I_H 、 I_L 相对值（相对于25°C）与结温关系

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



封装尺寸 PACKAGE MECHANICAL DATA

TO-220B

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	15.20		15.90	0.598		0.625
a1		3.75			0.147	
a2	13.00		14.00	0.511		0.551
B	10.00		10.40	0.393		0.409
b1	0.61		0.88	0.024		0.034
b2	1.23		1.32	0.048		0.051
C	4.40		4.60	0.173		0.181
c1	0.40		0.70	0.015		0.027
c2	2.40		2.72	0.094		0.107
e	2.40		2.70	0.094		0.106
F	6.20		6.70	0.244		0.264
ØI	3.70		3.85	0.146		0.151
I4	15.80	16.40	16.80	0.622	0.646	0.661
L	2.65		2.95	0.104		0.116
I2	1.14		1.70	0.044		0.066
I3	1.14		1.70	0.044		0.066
M		2.60			0.102	

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