

BTB12		
	双向可控硅 TRIAC	版本号 201603-A

产品概述 GENERAL DESCRIPTION

BTB12 双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。

BTB12 Triacs 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
$I_{T(RMS)}$	12	A
V_{DRM}/V_{RRM}	600&800	V
$I_{GT(III)}$	≤ 50	mA

产品特性

- dv/dt高
- 通态压降低
- Rohs环保产品

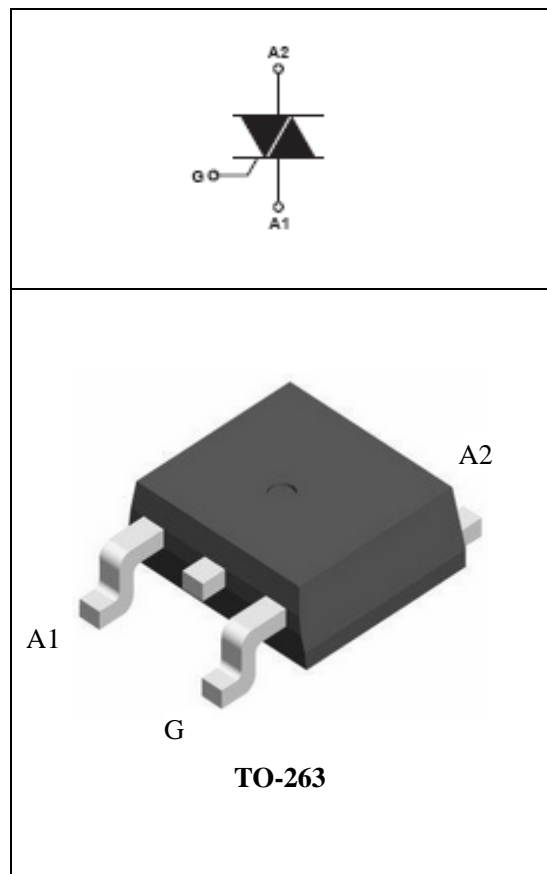
FEATURES

- 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℃) ABSOLUTE RATINGS

(T_j=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 _C =90℃	12 A
I _{TSM}	通态峰值浪涌电流 Non repetitive surge peak on-state current	F=50Hz, t=20ms	120 A
I ² t	I ² t 耗散值 I ² t value for fusing	T _P =10ms	78 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℃	50 A/μs
I _{GM}	门极峰值电流 Peak gate current	T _P =20μs, T _j =125℃	4 A
P _{G(AV)}	平均门极耗散功率 Average gate power dissipation	T _j =125℃	1 W
T _{stg}	贮存结温范围 Storage junction temperature range		-40~+150 ℃
T _j	工作结温范围 Operating junction temperature range		-40~+125 ℃

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

(T_j=25℃, unless otherwise specified)

3 quadrants

参数 Parameter	符号 Symbol		规范值 Value				单位 Unit	测试条件 Test Conditions
			TW	SW	CW	BW		
触发电流 Gate trigger current	I _{GT}	I ~ III	5	10	35	50	mA	V _D =12V, I _T =0.1A
触发电压 Gate trigger voltage	V _{GT}	I ~ III	1.5				V	V _D =12V, I _T =0.1A
维持电流 Holding current	I _H		20	35	80	100	mA	V _D =12V, I _T =0.1A
擎住电流 Latching current	I _L		40	60	100	120	mA	V _D =12V, I _T =0.1A
电压上升率 Rise of off- state voltage	dv/dt		20	40	500	1000	V/μS	V _D =67% V _{DRM}
通态压降 Peak on-state voltage	V _{TM}		1.6				V	I _T =17A
断态漏电流 Peak repetitive forward blocking current	I _{DRM}		5				μA	V _R =V _{DRM} , T _j = 25 ℃
	I _{RRM}		2				mA	V _R =V _{DRM} , T _j =125 ℃

4 quadrants

参数 Parameter	符号 Symbol	规范值 Value		单位 Unit	测试条件 Test Conditions	
		C	B			
触发电流 Gate trigger current	I _{GT}	I ~ III	25	50	mA	V _D =12V, I _T =0.1A
		IV	50	100		
触发电压 Gate trigger voltage	V _{GT}	I ~ III	1.5		V	V _D =12V, I _T =0.1A
		IV				
维持电流 Holding current	I _H	35	60	mA	V _D =12V, I _T =0.1A	
擎住电流 Latching current	I _L	I-III-IV	45	70	mA	V _D =12V, I _T =0.1A
		II	80	100		
电压上升率 Rise of off- state voltage	dv/dt	200	400	V/μS	V _D =67% V _{DRM}	
通态压降 Peak on-state voltage	V _{TM}	1.6		V	I _T =17A	
断态漏电流 Peak repetitive forward blocking current	I _{DRM}	5		μA	V _{RRM} =V _{DRM} , T _j = 25 °C	
	I _{RPM}	2		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)	1.2	K/W
Rth(j-a)	Junction to ambient	45	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

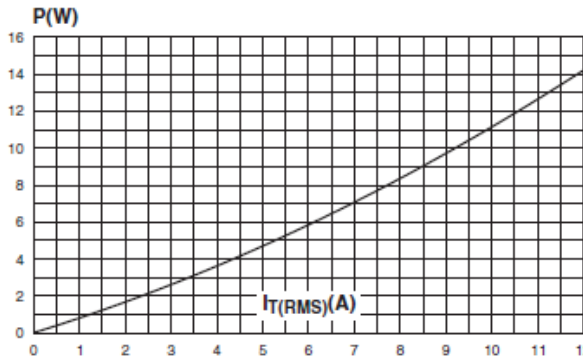


图2 RMS通态电流与Tc温度关系
Fig.2. RMS On-state Current Versus TL

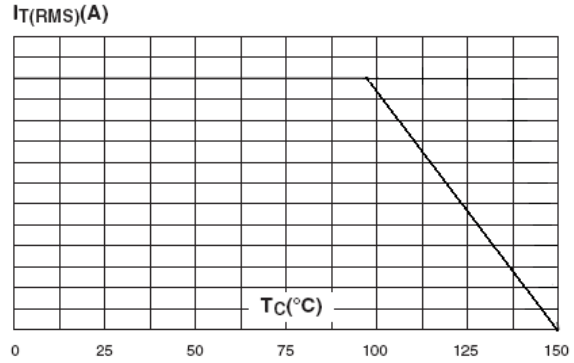


图3 通态特性
Fig.3.On-State Characteristics

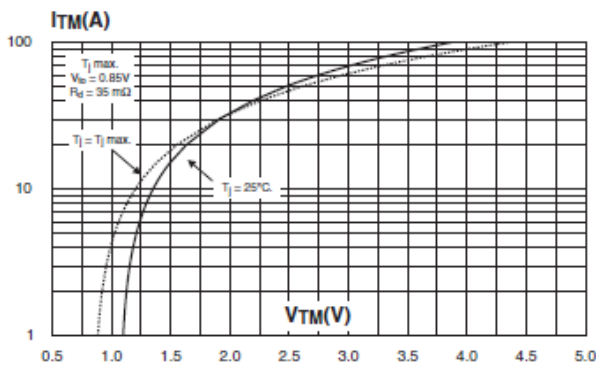


图4 通态浪涌峰值电流与周期数关系
Fig.4.Surge Peak On-state Current Versus Number Cycles

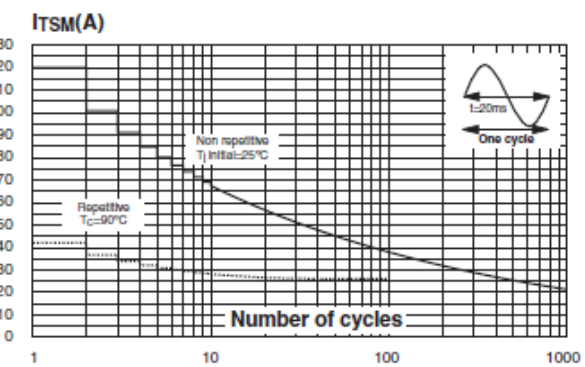
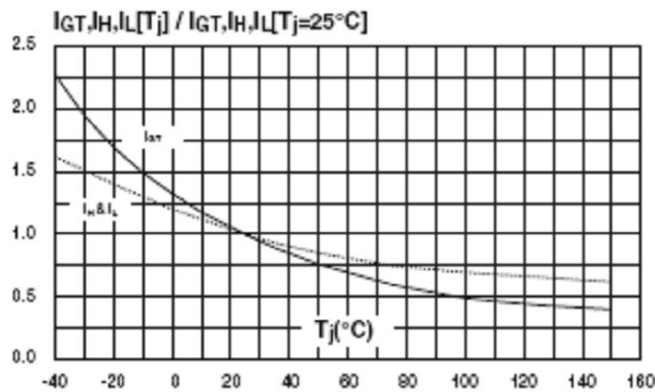
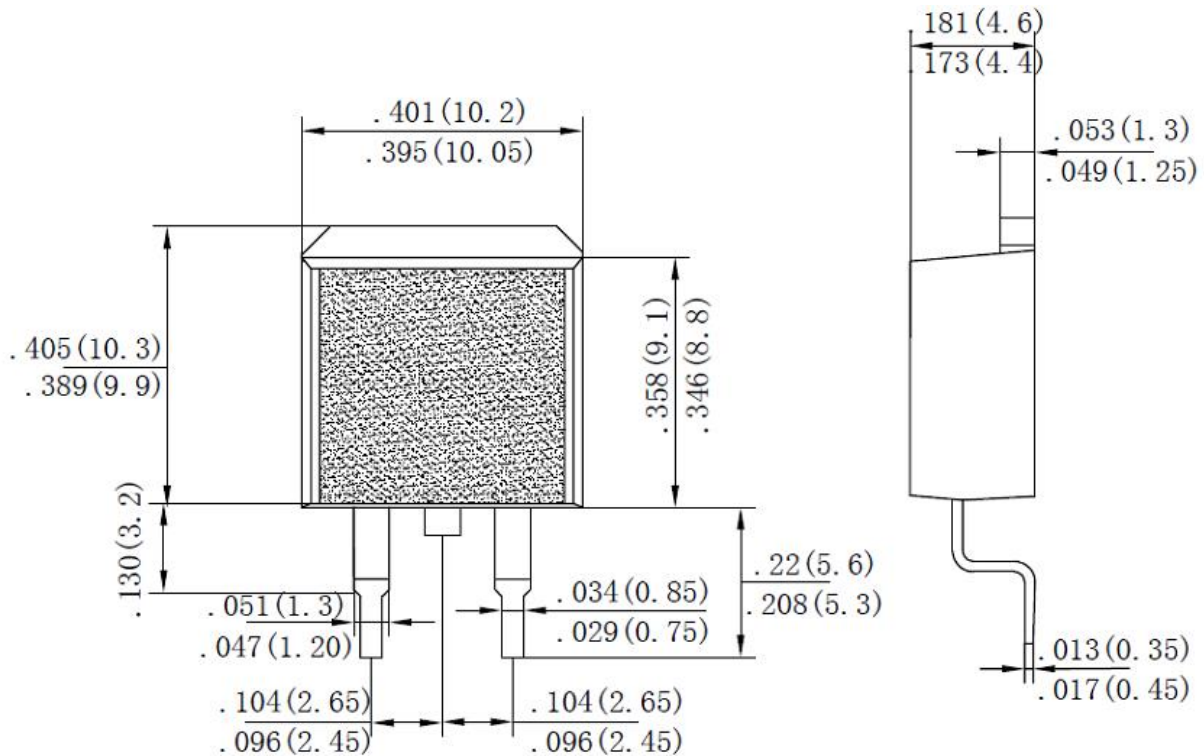


图5 I_{GT} 、 I_H 、 I_L 相对值（相对于25°C）与结温关系
Fig.5.Relative Variation Of Gate Trigger Current , Holding Current And Latching Current Versus Junction Temperature (Typical Value)



封装尺寸 PACKAGE MECHANICAL DATA

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