

BTA12		
	双向可控硅 TRIAC	版本号 201603-A

产品概述 GENERAL DESCRIPTION

BTA12 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。

BTA12 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	单位 Unit	BTA12
$I_{T(RMS)}$	A	12
V_{DRM}/V_{RRM}	V	600&800
$I_{GT(III)}$	mA	5/10/35/50

产品特性

- dv/dt高
- 通态压降低
- Rohs环保产品

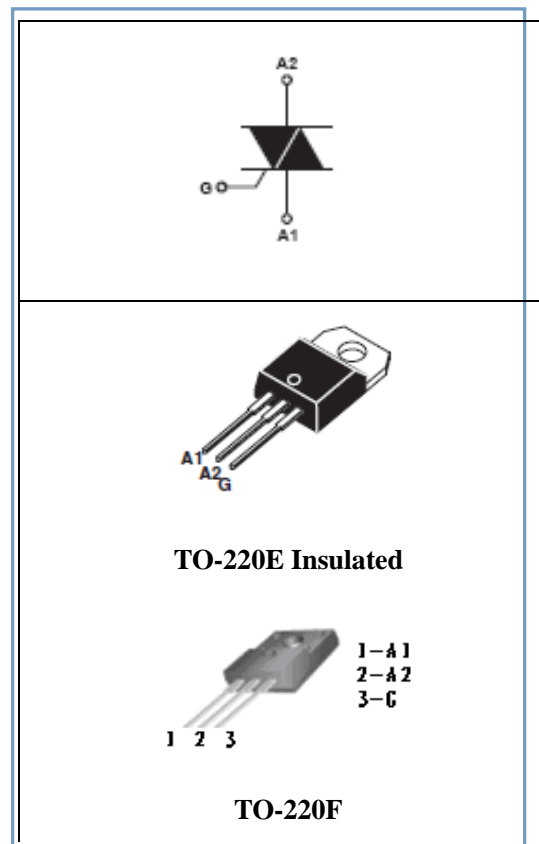
FEATURES

- 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)	I ² PAK/D ² PAK/TO-220A T _C =105℃	12 A
		B TO-220AB INS T _C =90℃	
I _{TSM}	通态峰值浪涌电流 Non repetitive surge peak on-state	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	TP=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-+150 ℃

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 _{RRM} =V _{DRM} , T _j =25℃
	I _{RRM}		1				mA	V _{RRM} =V _{DRM} , T _j =125℃

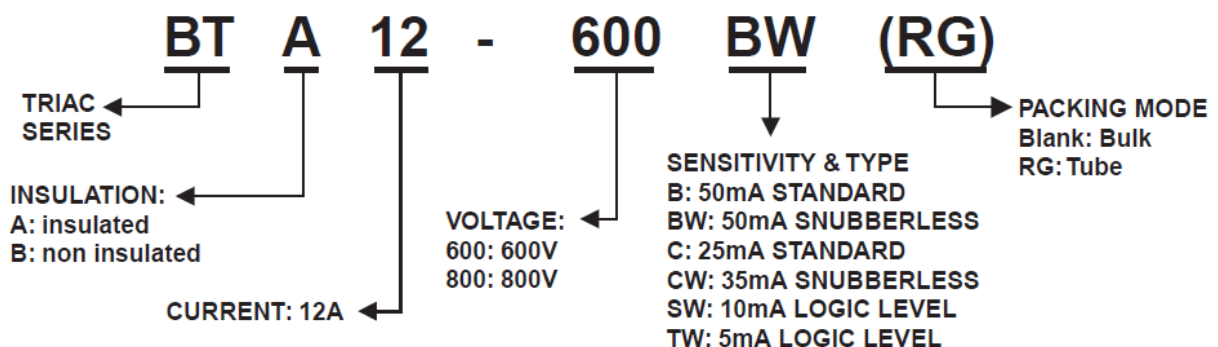
4 quadrants

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 _{RRM}		1		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-220E	2.7	°C/W
		TO-220F	3.3	
Rth(j-a)	Junction to ambient	TO-220E	60	°C/W
		TO-220F		

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

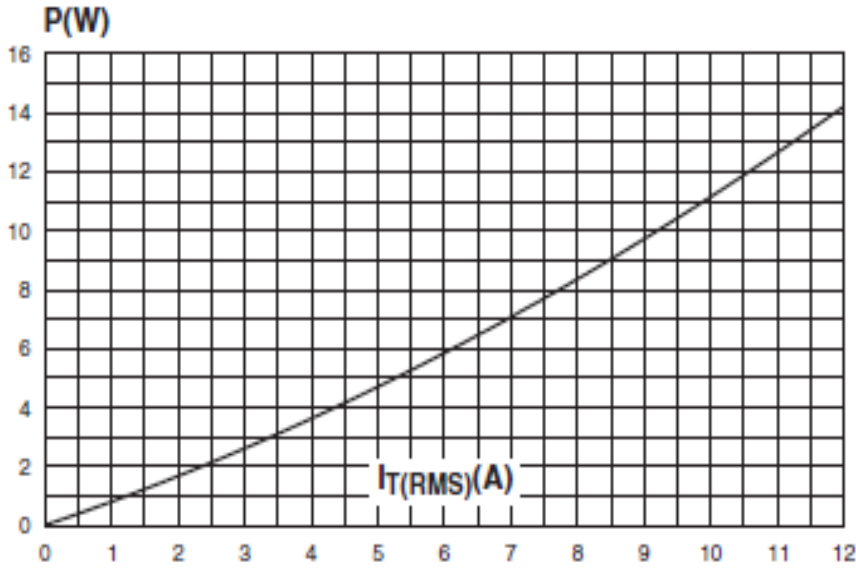


图2 RMS通态电流与Tc温度关系

Fig.2. RMS On-state Current Versus TL on-state current

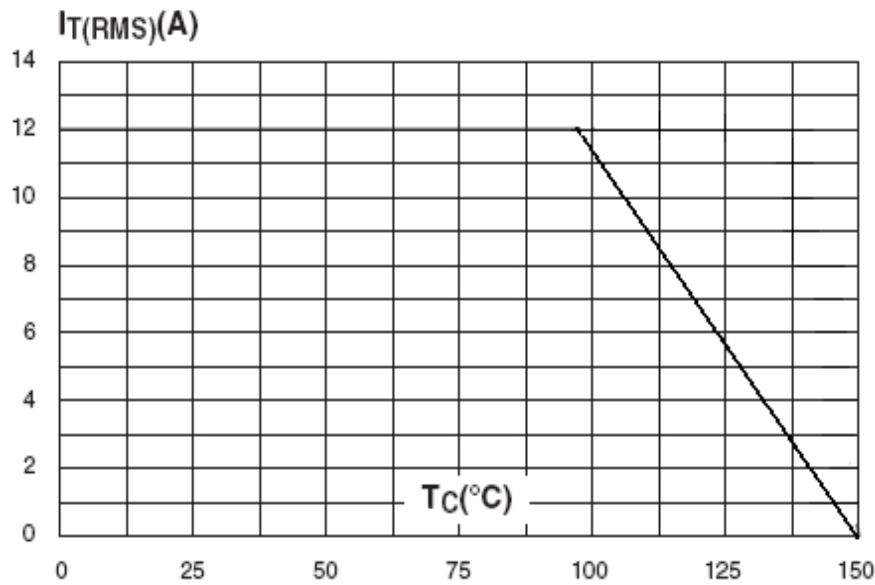


图3 通态特性

Fig.3.On-State Characteristics

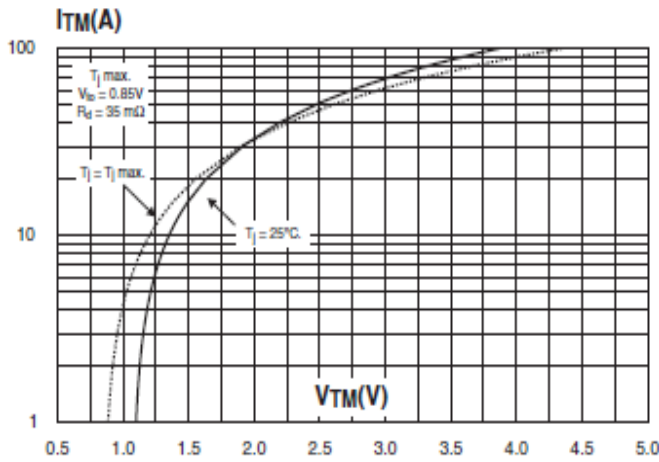


图4 通态浪涌峰值电流与周期数关系

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

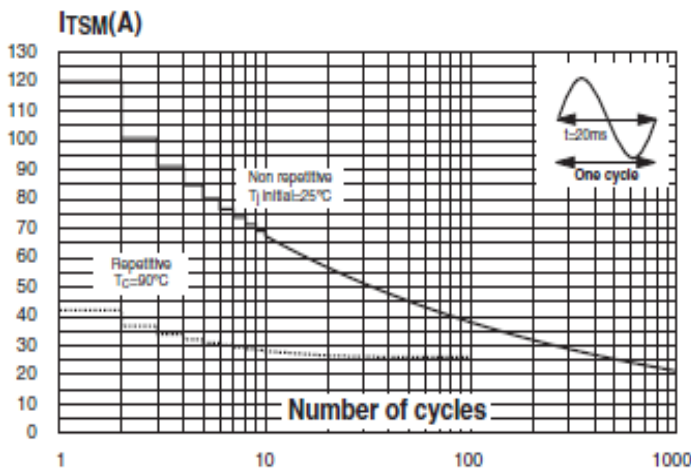
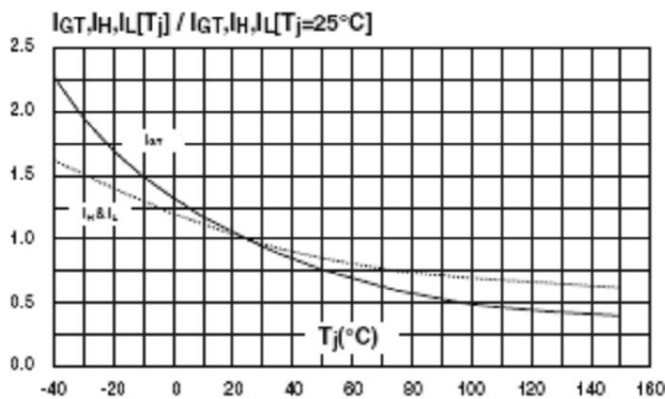


图5 I_{GT} 、 I_H 、 I_L 相对值（相对于 25°C ）与结温关系

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



TO-220E Insulated

	Dimensions						
	Ref.	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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