

## BTA10/BTB10

双向可控硅  
TRIAC

版本号  
201603-A

### 产品概述 GENERAL DESCRIPTION

BTA10/BTB10 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。

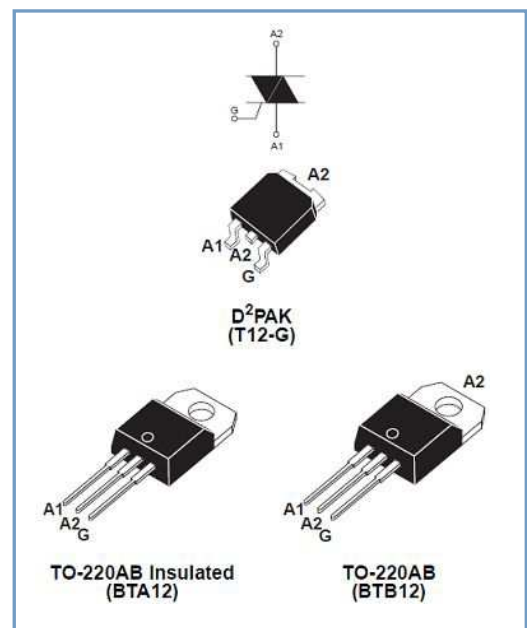
BTA10/BTB10 Triacs is fabricated using separation diffusion processes ,the junction termination areas are passivated with glass. Thanks to highly dv/dt and reliability,the Triacs series is suitable for domestic lighting ,heating and motor speed controllers.

### 主要参数 MAIN CHARACTERISTICS

参数 Parameter	数值 Value	单位 Unit
$I_{T(RMS)}$	10	A
$V_{DRM}/V_{RRM}$	600	V
$I_{GT(III)}$	$\leq 35$	mA

### 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, Tj=25℃) ABSOLUTE RATINGS

(Tj=25℃, unless otherwise specified)

符号 Symbol	参数 Parameter	数值 Value	单位 Unit
I <sub>T(RMS)</sub>	RMS 通态电流 RMS on-state current (full sine wave)	T <sub>C</sub> =95℃	10 A
I <sub>TSM</sub>	通态峰值浪涌电流 Non repetitive surge peak on-state current	F=50Hz, t=20ms	100 A
I <sup>2</sup> t	I <sup>2</sup> t 耗散值 I <sup>2</sup> t value for fusing	T <sub>p</sub> =10ms	55 A <sup>2</sup> s
di/dt	通态电流上升值 Critical rate of rise of on-state current	F=120Hz, Tj=125℃	50 A/μs
I <sub>GM</sub>	门极峰值电流 Peak gate current	TP=20μs, Tj=125℃	4 A
P <sub>G(AV)</sub>	平均门极耗散功率 Average gate power dissipation	Tj=125℃	1 W
Tstg	贮存结温范围 Storage junction temperature range		-40+150 ℃
Tj	工作结温范围 Operating junction temperature range		-40+150 ℃

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

(Tj=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
			CW	BW		
触发电流 Gate trigger current	I <sub>GT</sub>	I ~ III	35	50	mA	V <sub>D</sub> =12V, I <sub>T</sub> =0.1A
触发电压 Gate trigger voltage	V <sub>GT</sub>	I ~ III	≤1.5		V	V <sub>D</sub> =12V, I <sub>T</sub> =0.1A
维持电流 Holding current	I <sub>H</sub>		80	100	mA	V <sub>D</sub> =12V, I <sub>T</sub> =0.1A
擎住电流 Latching current	I <sub>L</sub>		100	120	mA	V <sub>D</sub> =12V, I <sub>T</sub> =0.1A
电压上升率 Rise of off- state voltage	dv/dt		500	1000	V/μS	V <sub>D</sub> =67%V <sub>DRM</sub>
通态压降 Peak on-state voltage	V <sub>TM</sub>		≤1.6		V	I <sub>T</sub> =10A
断态漏电流 Peak repetitive forward blocking current	I <sub>DRM</sub>		≤5		μA	V <sub>RRM</sub> =V <sub>DRM</sub> , Tj = 25℃
	I <sub>RRM</sub>		≤1		mA	V <sub>RRM</sub> =V <sub>DRM</sub> , Tj = 125℃

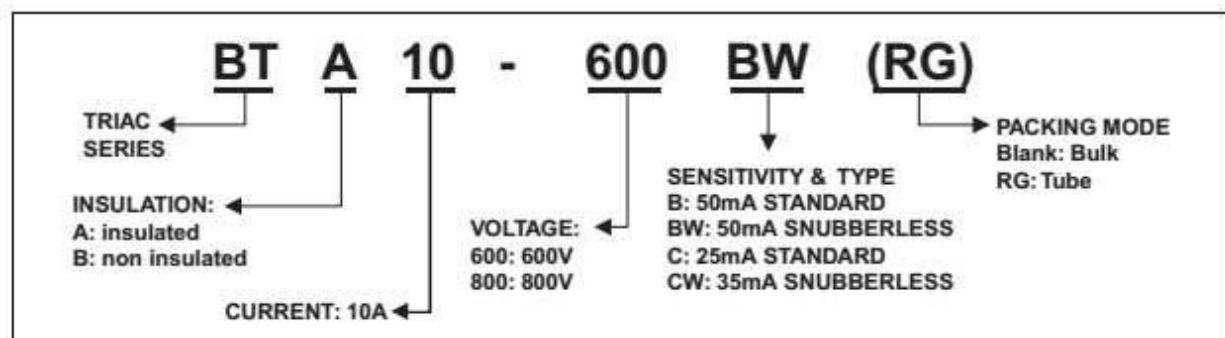
## 4 quadrants

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 <sub>GT</sub>	I ~ III	≤25	≤50	mA	V <sub>D</sub> =12V, I <sub>T</sub> =0.1A
		IV	≤50	≤100		
触发电压 Gate trigger voltage	V <sub>GT</sub>	I ~ III	≤1.5		V	V <sub>D</sub> =12V, I <sub>T</sub> =0.1A
		IV				
维持电流 Holding current	I <sub>H</sub>		≤35	≤60	mA	V <sub>D</sub> =12V, I <sub>T</sub> =0.1A
擎住电流 Latching current	I <sub>L</sub>	I-III-IV	≤45	≤70	mA	V <sub>D</sub> =12V, I <sub>T</sub> =0.1A
		II	≤80	≤100		
电压上升率 Rise of off- state voltage	dv/dt		≥200	≥400	V/μS	V <sub>D</sub> =67%V <sub>DRM</sub>
通态压降 Peak on-state voltage	V <sub>TM</sub>		≤1.6		V	I <sub>T</sub> =10A
断态漏电流 Peak repetitive forward blocking current	I <sub>DRM</sub>		≤5		μA	V <sub>RRM</sub> =V <sub>DRM</sub> , T <sub>j</sub> = 25°C
	I <sub>RRM</sub>		≤1		mA	V <sub>RRM</sub> =V <sub>DRM</sub> , T <sub>j</sub> = 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-220AB	1.6
		TO-220AB Ins	2.3
Rth(j-a)	Junction to ambient	TO-220AB	60
		TO-220AB Ins	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

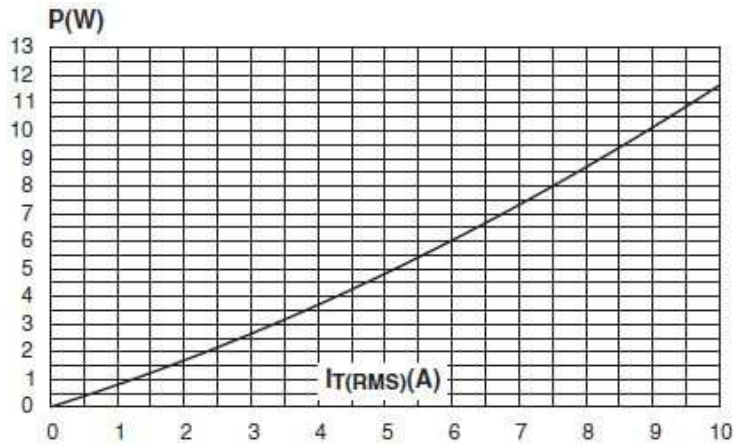


图2 RMS通态电流与Tc温度关系

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

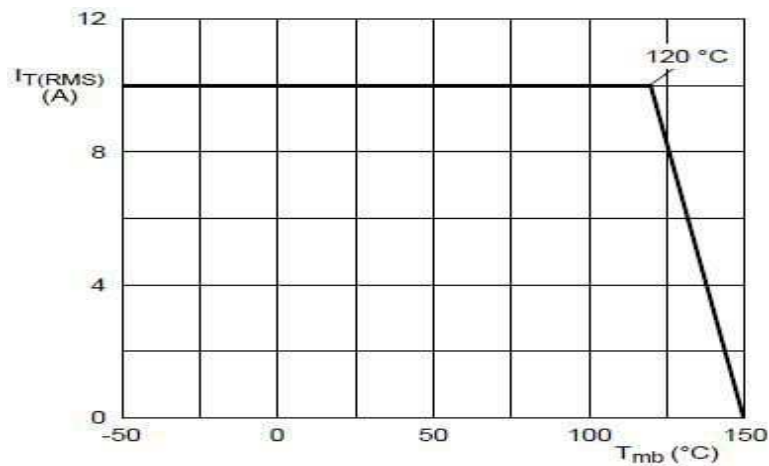


图3 通态特性

Fig.3.On-State Characteristics

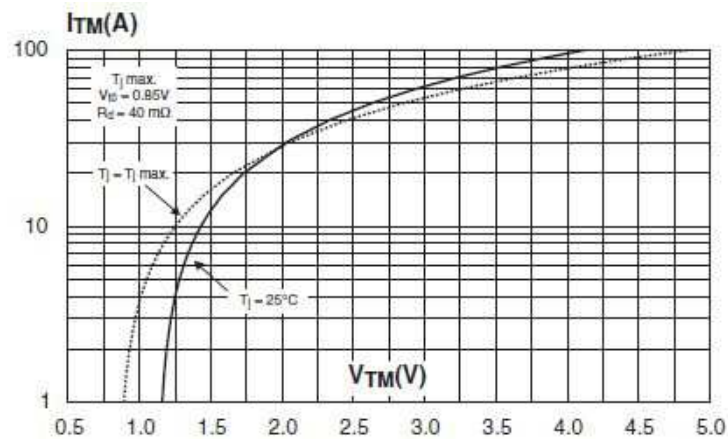


图4 通态浪涌峰值电流与周期数关系

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

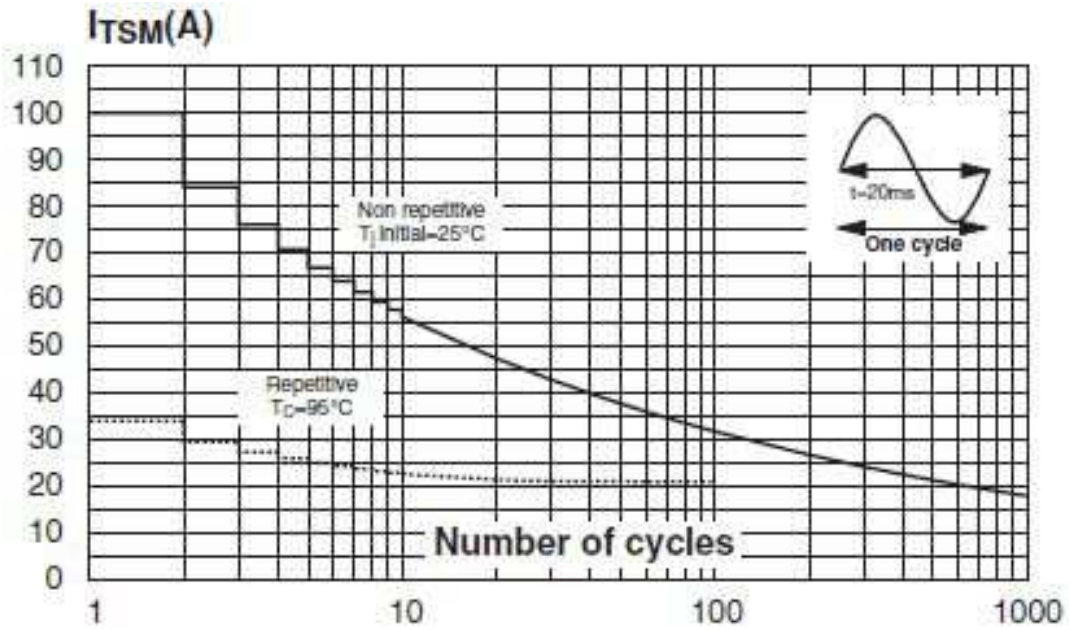
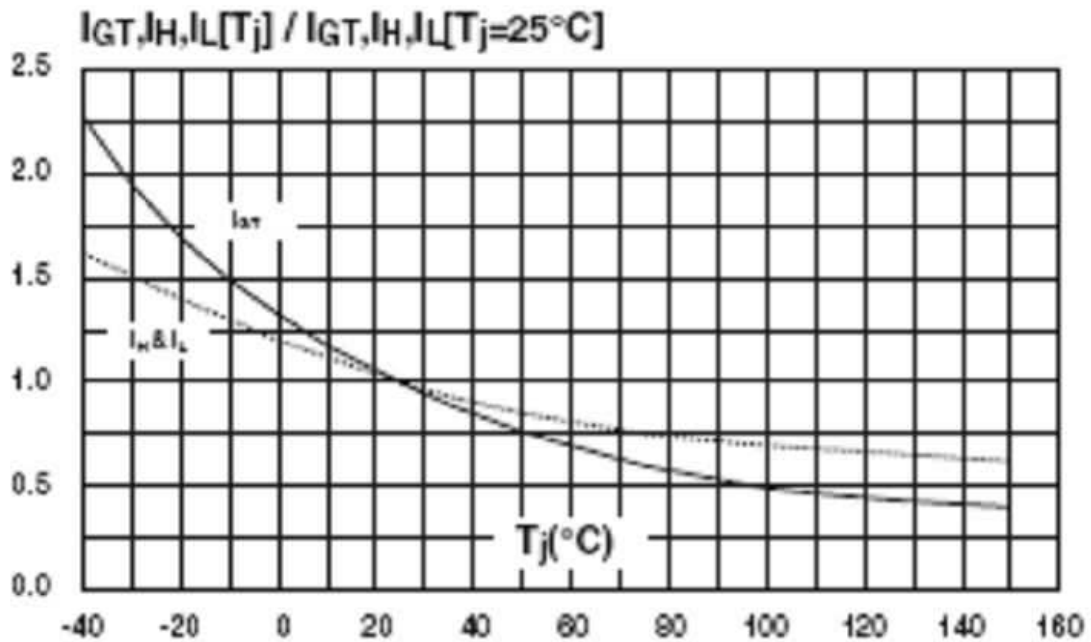


图5  $I_{GT}$ 、 $I_H$ 、 $I_L$ 相对值（相对于25°C）与结温关系

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



封装尺寸 PACKAGE MECHANICAL DATA

TO-220AB Insulated and TO-220AB

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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