

## BTA16/BTB16

双向可控硅  
TRIAC

版本号  
201603-A

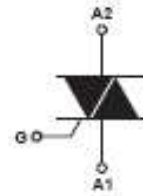
### 产品概述 GENERAL DESCRIPTION

BTA16/BTB16 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。

BTA16/BTB16 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
$I_{T(RMS)}$	16	A
$V_{DRM}/V_{RRM}$	600&800	V
$I_{GT}$	$\leq 50$	mA



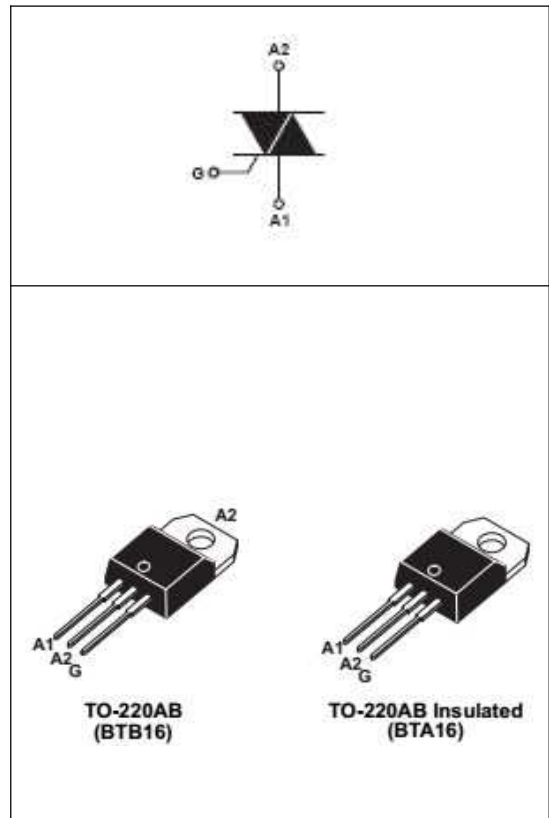
### 产品特性 FEATURES

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>● dv/dt高</li> <li>● 通态压降低</li> <li>● Rohs环保产品</li> </ul> | <ul style="list-style-type: none"> <li>● Highly dv/dt</li> <li>● Low on-state voltage</li> <li>● Rohs Products</li> </ul> |
|---|---|

### 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°C) ABSOLUTE RATINGS

(Tj=25°C, 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> =86°C	16 A
I <sub>TSM</sub>	通态峰值浪涌电流 Non repetitive surge peak on-state current	F=50Hz, t=20ms	160 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	144 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°C	50 A/μs
I <sub>GM</sub>	门极峰值电流 Peak gate current	T <sub>p</sub> =20μs, Tj=125°C	4 A
P <sub>G(AV)</sub>	平均门极耗散功率 Average gate power dissipation	Tj=125°C	1 W
T <sub>stg</sub>	贮存结温范围 Storage junction temperature range		-40+150 °C
T <sub>j</sub>	工作结温范围 Operating junction temperature range		-40+150 °C

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

(Tj=25°C, unless otherwise specified)

### 3 quadrants

参数 Parameter	符号 Symbol		规范值 Value			单位 Unit	测试条件 Test Conditions
			SW	CW	BW		
触发电流 Gate trigger current	I <sub>GT</sub>	I ~ III	≤10	≤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>		≤15	≤35	≤50	mA	V <sub>D</sub> =12V, I <sub>T</sub> =0.1A
擎住电流 Latching current	I <sub>L</sub>		≤25	≤50	≤70	mA	V <sub>D</sub> =12V, I <sub>T</sub> =0.1A
电压上升率 Rise of off- state voltage	dv/dt		≥40	≥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>		≤1.65			V	I <sub>T</sub> =22A
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°C
	I <sub>RRM</sub>		≤2			mA	V <sub>RRM</sub> =V <sub>DRM</sub> , Tj = 125°C

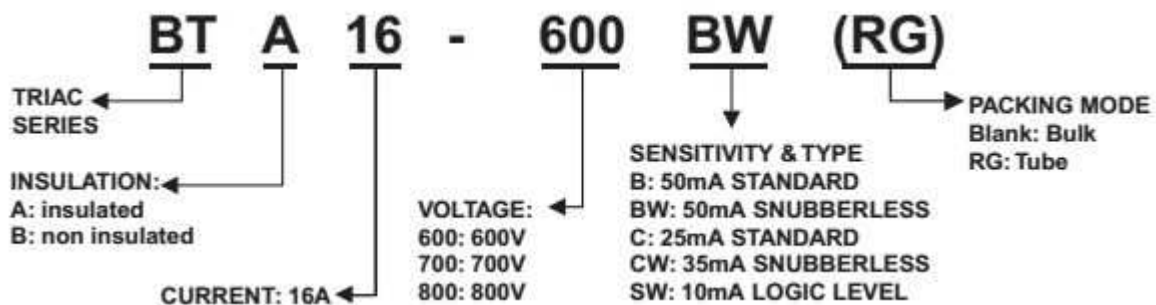
## 4 quadrants

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>		≤25	≤50	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	≤40	≤50	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> =22A
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	1.2	°C/W
		TO-220AB Insulated	2.1	
Rth(j-a)	Junction to ambient	TO-220AB	60	°C/W
		TO-220AB Insulated	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 on-state current

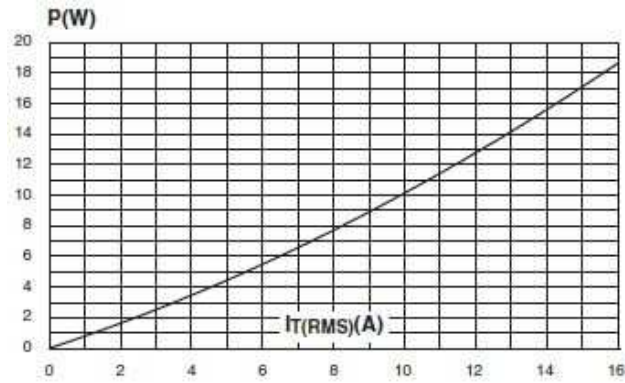


图2 RMS通态电流与Tc温度关系

Fig.2. RMS On-state Current Versus TL

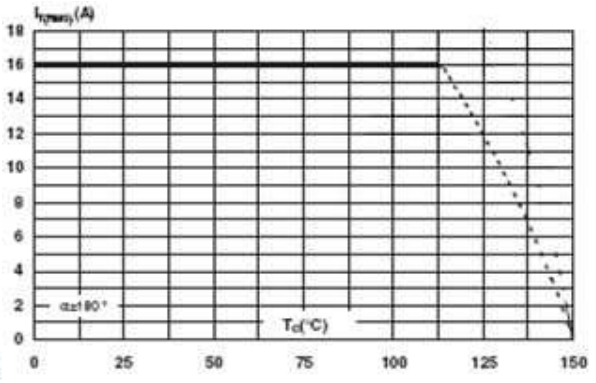


图3 通态特性

Fig.3.On-State Characteristics

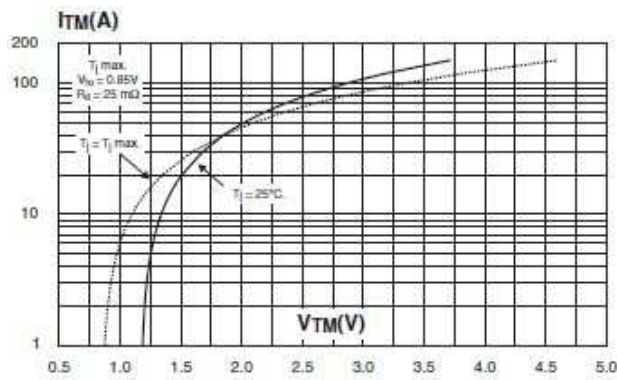


图4 通态浪涌峰值电流与周期数关系

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

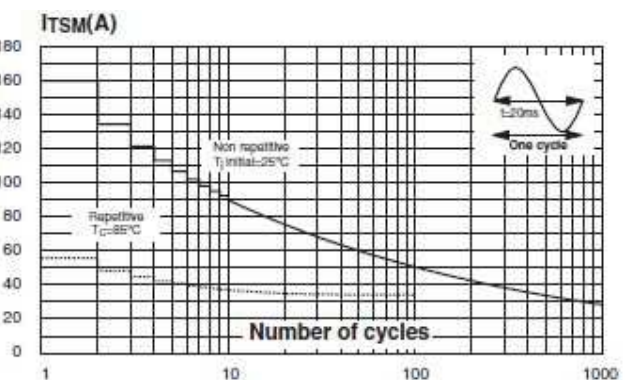
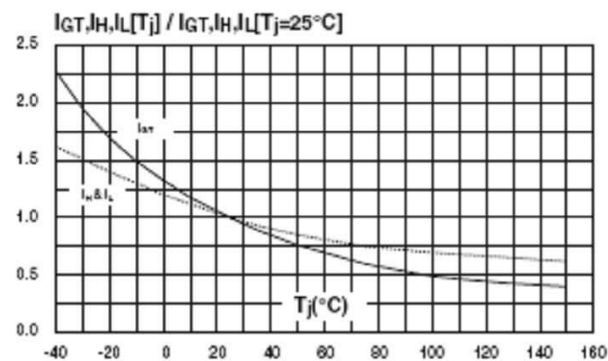


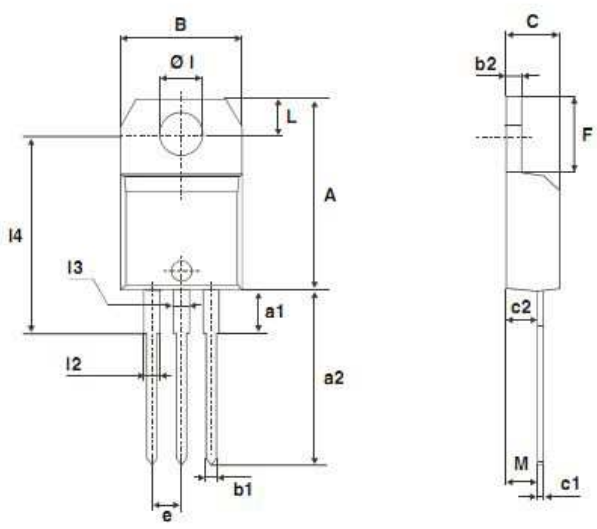
图5 IGT、IH、IL相对值（相对于25°C）与结温关系

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 AND TO-220AB 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	0.49		0.70	0.019		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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