

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}	≤ 50	mA

产品特性

- dv/dt高
- 通态压降低
- Rohs环保产品

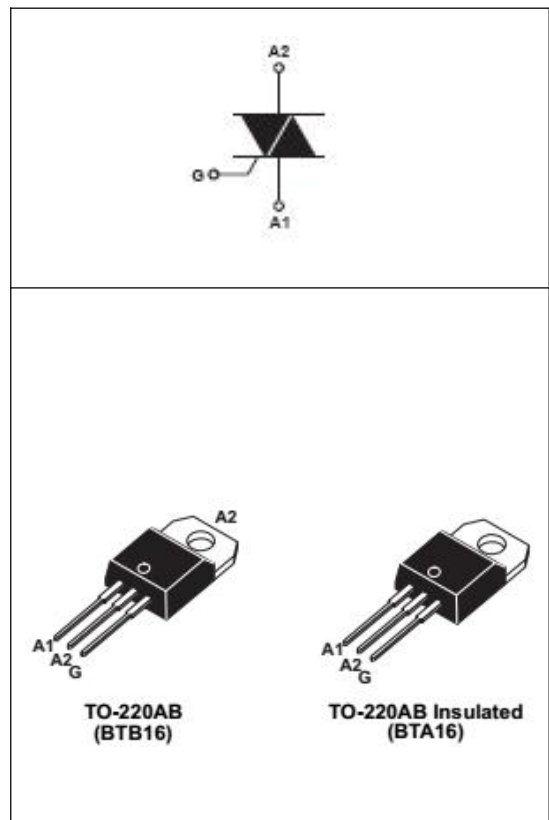
FEATURES

- 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, $T_j=25^\circ\text{C}$) ABSOLUTE RATINGS

 ($T_j=25^\circ\text{C}$, 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)	$T_C=86^\circ\text{C}$	16 A
I_{TSM}	通态峰值浪涌电流 Non repetitive surge peak on-state current	$F=50\text{Hz}, t=20\text{ms}$	160 A
I^2t	I^2t 耗散值 I^2t value for fusing	$T_P=10\text{ms}$	144 A^2s
di/dt	通态电流上升值 Critical rate of rise of on-state current	$F=120\text{Hz}, T_j=125^\circ\text{C}$	50 $\text{A}/\mu\text{s}$
I_{GM}	门极峰值电流 Peak gate current	$T_P=20\mu\text{s}, T_j=125^\circ\text{C}$	4 A
$P_{G(AV)}$	平均门极耗散功率 Average gate power dissipation	$T_j=125^\circ\text{C}$	1 W
Tstg	贮存结温范围 Storage junction temperature range		-40+150 $^\circ\text{C}$
T_j	工作结温范围 Operating junction temperature range		-40+150 $^\circ\text{C}$

电参数(除非另有规定, $T_j=25^\circ\text{C}$) ELECTRICAL CHARACTERISTICS

 ($T_j=25^\circ\text{C}$, 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_{GT}	I ~ III	≤ 10	≤ 35	≤ 50	mA	$V_D=12\text{V}, I_T=0.1\text{A}$
触发电压 Gate trigger voltage	V_{GT}	I ~ III	≤ 1.5			V	$V_D=12\text{V}, I_T=0.1\text{A}$
维持电流 Holding current	I_H		≤ 15	≤ 45	≤ 60	mA	$V_D=12\text{V}, I_T=0.1\text{A}$
擎住电流 Latching current	I_L		≤ 25	≤ 60	≤ 80	mA	$V_D=12\text{V}, I_T=0.1\text{A}$
电压上升率 Rise of off- state voltage	dv/dt		≥ 40	≥ 500	≥ 1000	$\text{V}/\mu\text{s}$	$V_D=67\%V_{DRM}$
通态压降 Peak on-state voltage	V_{TM}		≤ 1.65			V	$I_T=22\text{A}$
断态漏电流 Peak repetitive forward blocking current	I_{DRM}		≤ 5			μA	$V_{RRM}=V_{DRM}, T_j=25^\circ\text{C}$
	I_{RRM}		≤ 2			mA	$V_{RRM}=V_{DRM}, T_j=125^\circ\text{C}$

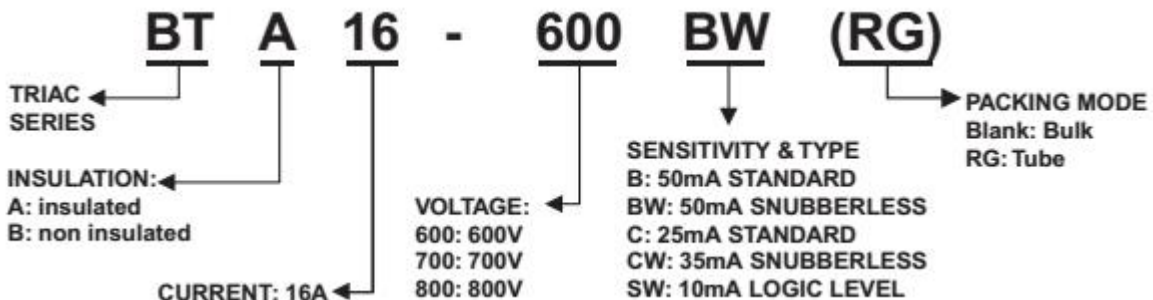
4 quadrants

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 _{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	≤25	≤50	mA	V _D =12V, I _T =0.1A	
擎住电流 Latching current	I _L	I-III-IV	≤40	≤50	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 =22A	
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-220AB	1.2
		TO-220AB Insulated	2.1
Rth(j-a)	Junction to ambient	TO-220AB	60
		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

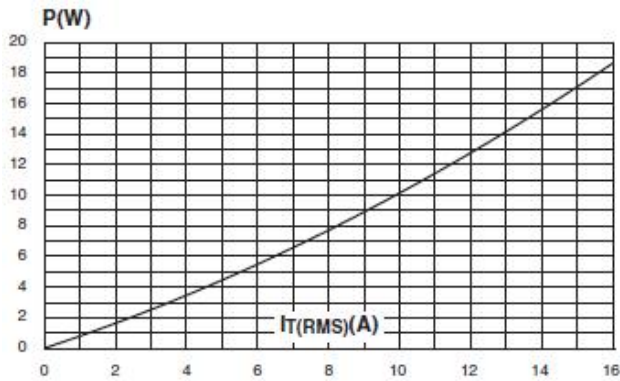


图2 RMS通态电流与Tc温度关系

Fig.2. RMS On-state Current Versus TL

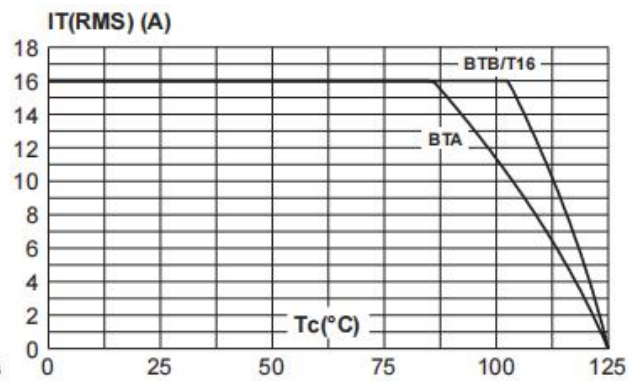


图3 通态特性

Fig.3.On-State Characteristics

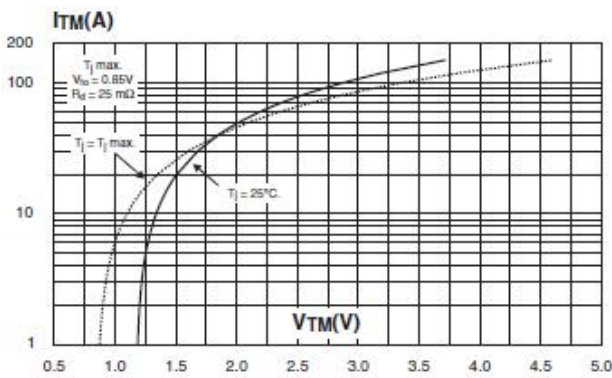


图4 通态浪涌峰值电流与周期数关系

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

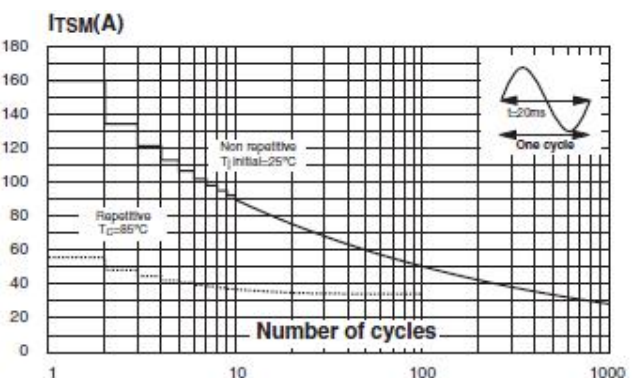
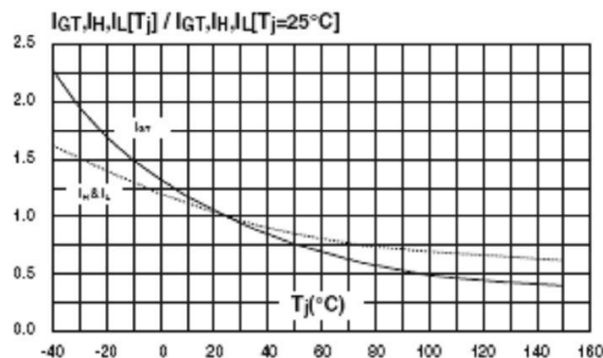


图5 IGT、IH、IL相对值（相对于25°C）与结温关系

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

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	0.49		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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