

BTA16		
	双向可控硅 TRIAC	版本号 201603-A

产品概述 GENERAL DESCRIPTION

BTA16 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 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

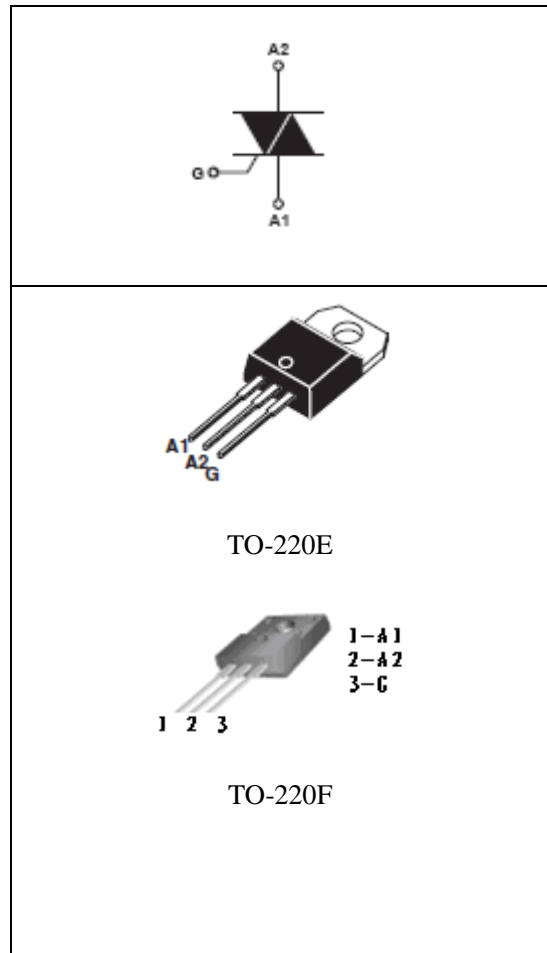
FEATURES

- | | |
|---|---|
| <ul style="list-style-type: none"> ● dv/dt高 ● 通态压降低 ● Rohs环保产品 | <ul style="list-style-type: none"> ● 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 =86℃ 16	A
I _{TSM}	通态峰值浪涌电流 Non repetitive surge peak on-state current	F=50Hz, t=20ms 160	A
I ² t	I ² t 耗散值 I ² t value for fusing	T _p =10ms 144	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~+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
			SW	CW	BW		
触发电流 Gate trigger current	I _{GT}	I ~ III	≤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		≤15	≤45	≤60	mA	V _D =12V, I _T =0.1A
擎住电流 Latching current	I _L		≤25	≤60	≤80	mA	V _D =12V, I _T =0.1A
电压上升率 Rise of off- state voltage	dv/dt		≥40	≥500	≥1000	V/μS	V _D =67% V _{DRM}
通态压降 Peak on-state voltage	V _{TM}		≤1.65			V	I _T =22A
断态漏电流 Peak repetitive forward blocking current	I _{DRM}		≤5			μA	V _{RDM} =V _{DRM} , T _j =25℃
	I _{RRM}		≤2			mA	V _{RDM} =V _{DRM} , T _j =150℃

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 = 150 °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-220F	3.3	°C/W
		TO-220E	2.7	
Rth(j-a)	Junction to ambient	TO-220F	60	°C/W
		TO-220E	60	

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

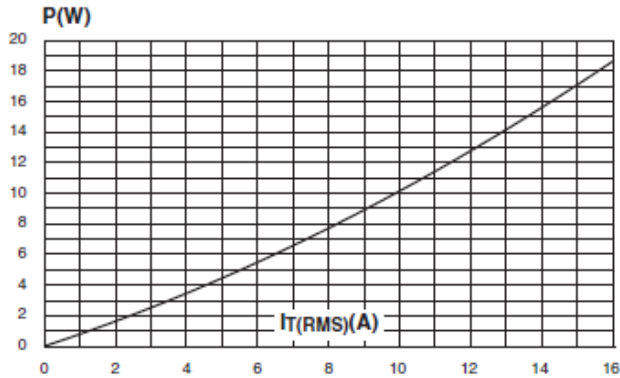


图2 RMS通态电流与Tc温度关系

Fig.2. RMS On-state Current Versus TL

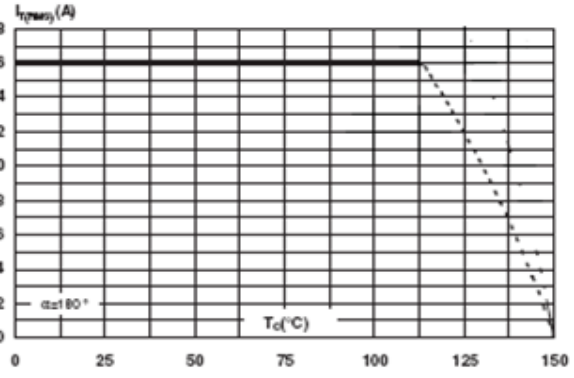


图3 通态特性

Fig.3.On-State Characteristics

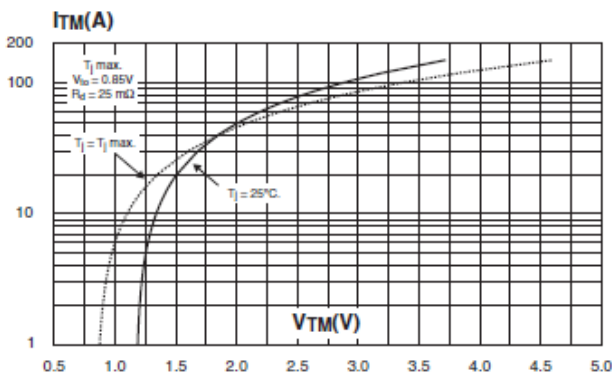


图4 通态浪涌峰值电流与周期数关系

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

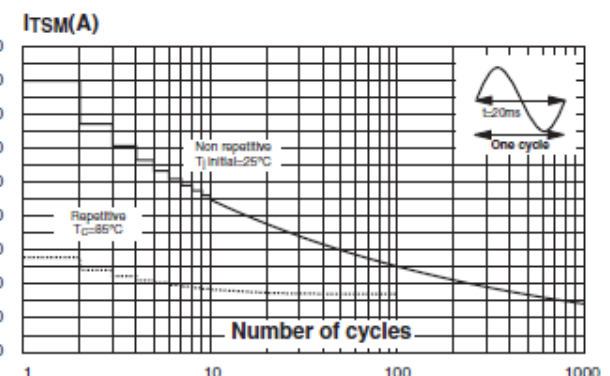
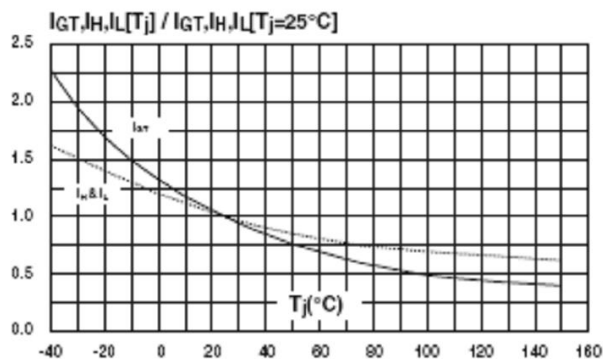


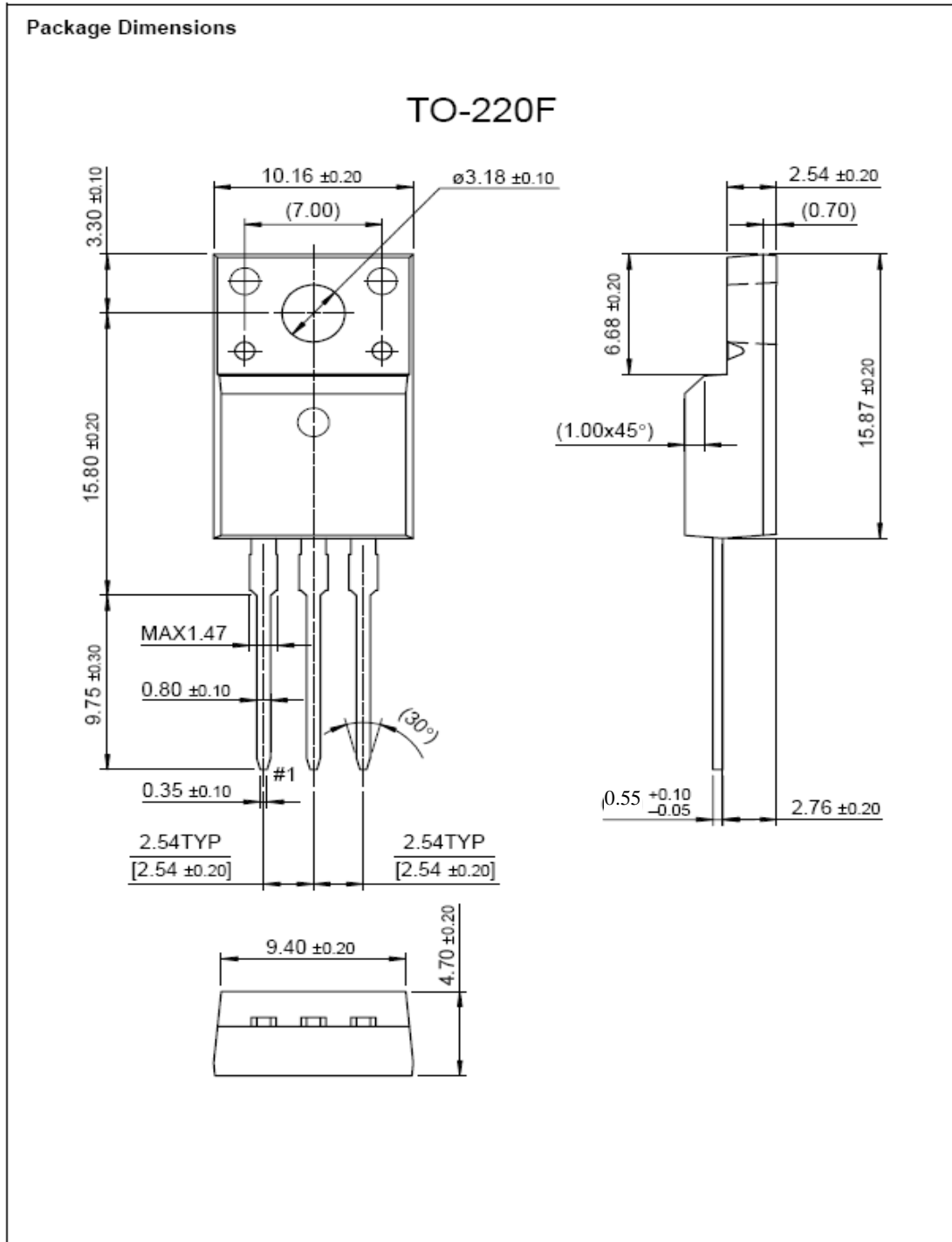
图5 I_{GT}、I_H、I_L相对值（相对于25°C）与结温关系

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

TO-220F



T0-220E

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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