

BTA12/BTB12

双向可控硅
TRIAC

版本号
201603-A

产品概述 GENERAL DESCRIPTION

BTA12/BTB12 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/BTB12 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	T12**	BTA12	BTB12
$I_{T(RMS)}$	A	12	12	12
V_{DRM}/V_{RRM}	V	600/800	600/800	600/800
$I_{GT(III)}$	mA	10/35/50	5/10/35/50	5/10/35/50

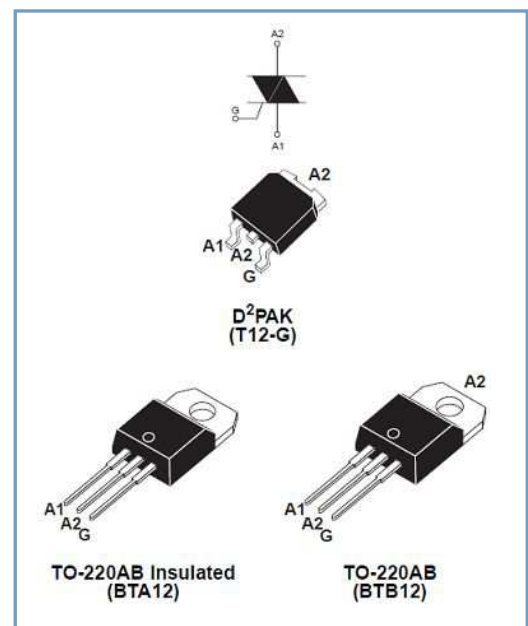
产品特性 FEATURES

- 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, 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-220AB T _C =105℃	12	A
		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)

参数 Parameter	测试条件 Test Conditions	规范值 Value								单位 Unit	
		T12××			BTA/BTB12						
		T1210	T1235	T1250	TW	SW	CW	BW			
I _{GT}	I ~ III	V _D =12V, I _T =0.1A	10	35	50	5	10	35	50	mA	
I _H		V _D =12V, I _T =0.1A	35	80	100	20	35	80	100	mA	
I _L	I-III	V _D =12V, I _T =0.1A	60	100	120	40	60	100	120	mA	
	II		50	90	110	30	50	90	110		
dv/dt		V _D =67%V _{DRM}	40	500	1000	20	40	500	1000	V/μs	
参数 Parameter	测试条件 Test Conditions	规范值 Value								单位 Unit	
		BTA/BTB12									
		C				B					
I _{GT}	I ~ III	V _D =12V, I _T =0.1A	25				50				mA
	IV		50				100				
I _H		V _D =12V, I _T =0.1A	35				60				mA
I _L	I-III	V _D =12V, I _T =0.1A	45				70				mA
	II		80				100				
dv/dt		V _D =67%V _{DRM}	200				400				V/μs

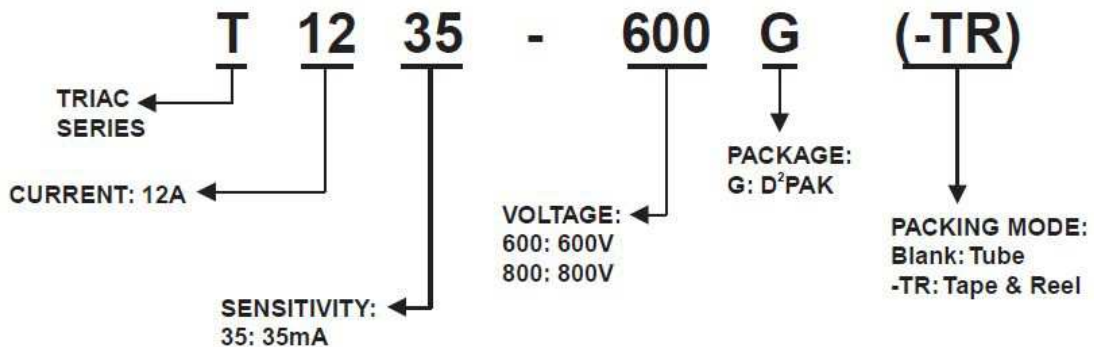
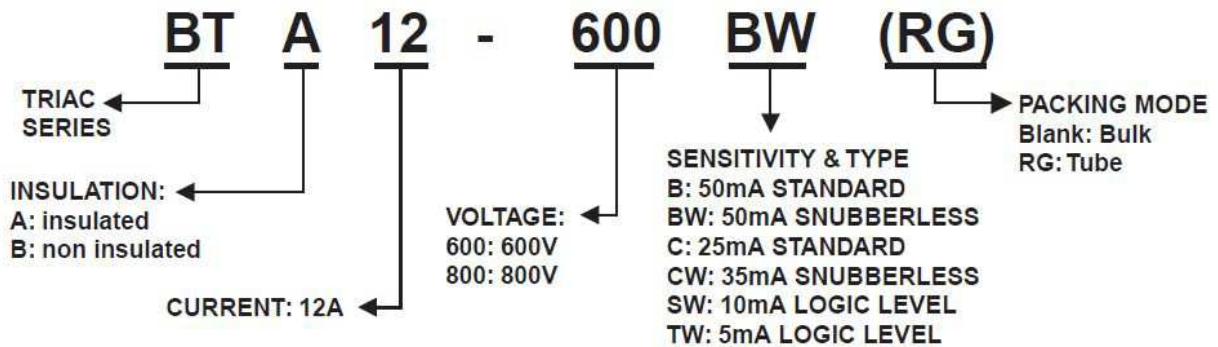
(T_j=25°C, unless otherwise specified)

V _{GT}	V _D =12V, I _T =0.1A	≤1.5	V
V _{TM}	I _T =17A	≤1.55	V
I _{DRM}	V _{RRM} =V _{DRM} , T _j = 25°C	≤10	μA
I _{RRM}	V _{RRM} =V _{DRM} , T _j =125°C	≤1	mA

热特性 THERMAL RESISTANCES

符号 Symbol	参数 Parameter	数值 Value	单位 Unit
R _{th(j-c)}	Junction to case(AC)	TO-220AB	1.6
		TO-220AB Ins	2.3
		D ² PAK	0.8
R _{th(j-a)}	Junction to ambient	TO-220AB	60
		TO-220AB Ins	60
		D ² PAK	45

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

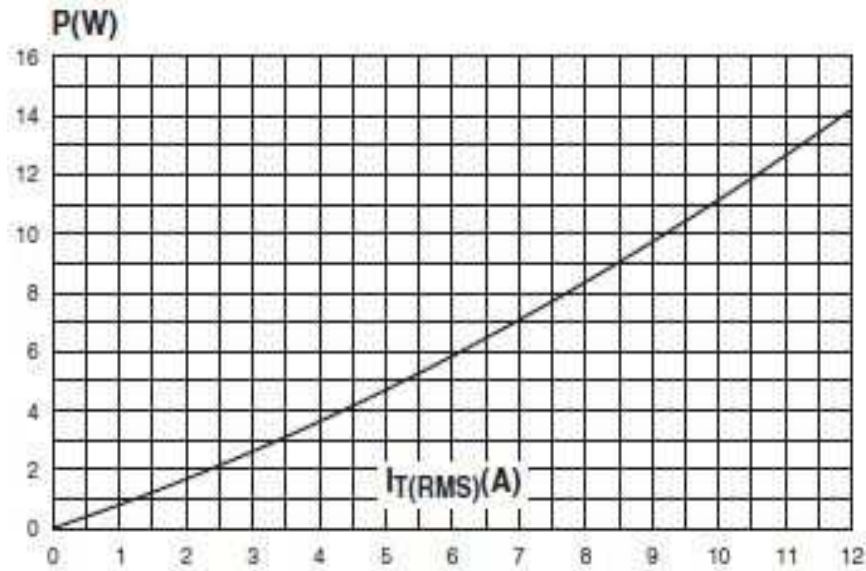


图2 RMS通态电流与Tc温度关系

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

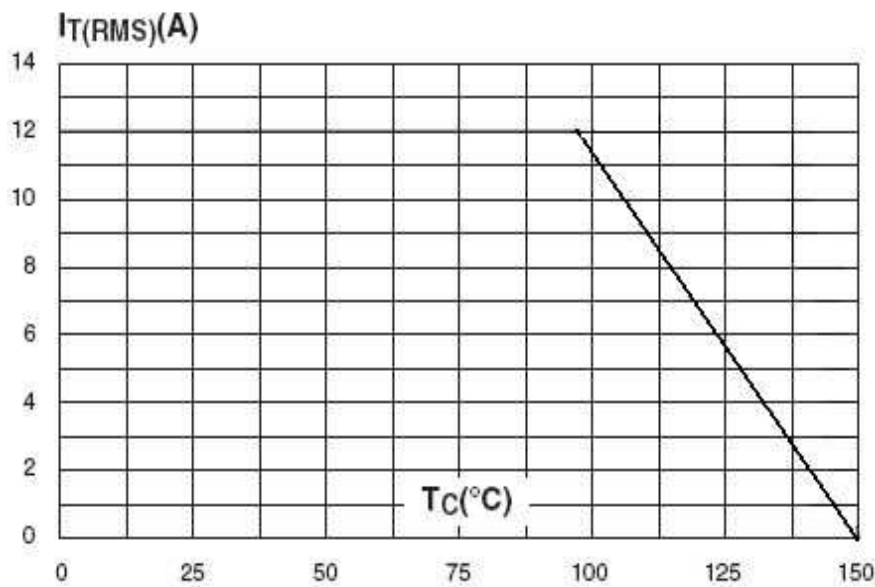


图3 通态特性

Fig.3.On-State Characteristics

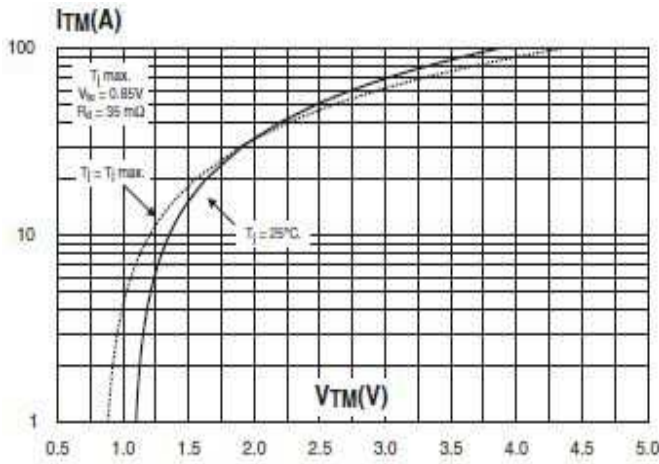


图4 通态浪涌峰值电流与周期数关系

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

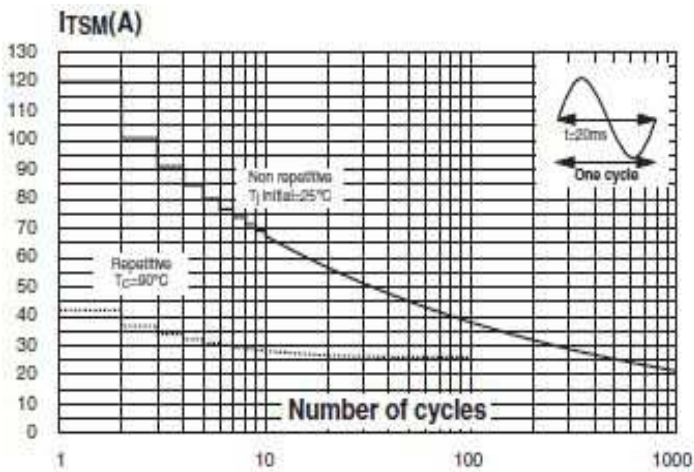
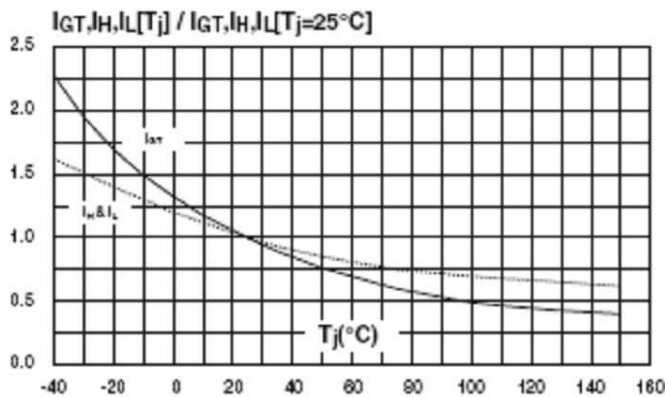


图5 I_{GT} 、 I_H 、 I_L 相对值（相对于 25°C ）与结温关系

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

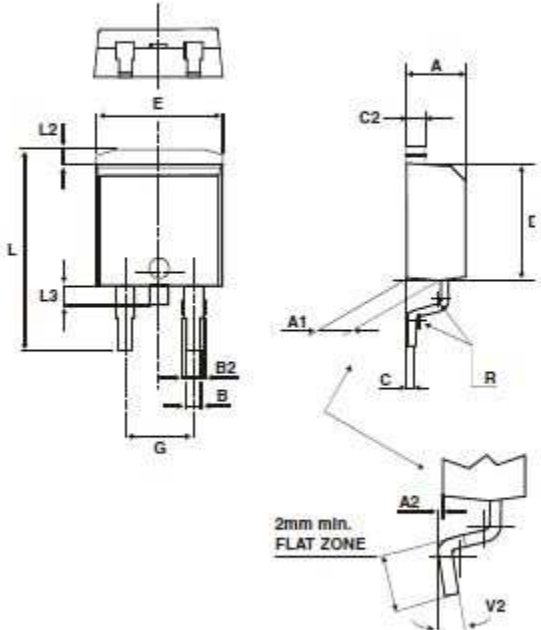


封装尺寸 PACKAGE MECHANICAL DATA

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	

D²PAK

	Dimensions						
	Ref.	Millimeters			Inches		
		Min.	Typ.	Max.	Min.	Typ.	Max.
	A	4.30		4.60	0.169		0.181
	A1	2.49		2.69	0.098		0.106
	A2	0.03		0.23	0.001		0.009
	B	0.70		0.93	0.027		0.037
	B2	1.25	1.40		0.048	0.055	
	C	0.45		0.60	0.017		0.024
	C2	1.21		1.36	0.047		0.054
	D	8.95		9.35	0.352		0.368
	E	10.00		10.28	0.393		0.405
	G	4.88		5.28	0.192		0.208
	L	15.00		15.85	0.590		0.624
	L2	1.27		1.40	0.050		0.055
	L3	1.40		1.75	0.055		0.069
	R		0.40			0.016	
	V2	0°		8°	0°		8°

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