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。

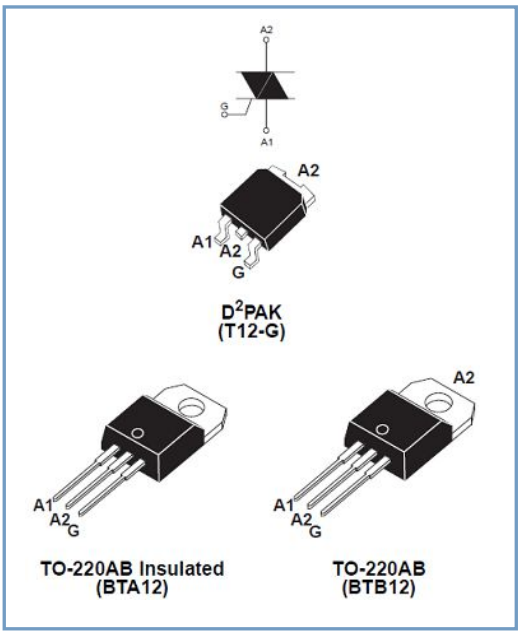
BTA12/BTB12 Triacs is fabricated using separation diffusion processes ,the junction termination areas are passivated with glass. Thanks to highly dv/dt and reliability,the Triacs series is suitable for domestic lighting ,heating and motor speed controllers.

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，Tj=25℃) ABSOLUTE RATINGS

(Tj=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)	$I^2PAK/D^2PAK/TO-220AB$	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^2t	I^2t 耗散值 I^2t value for fusing	T_P=10ms		78	A^2s
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_{GM}	门极峰值电流 Peak gate current	TP=20μs,Tj=125℃		4	A
$P_{G(AV)}$	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)

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

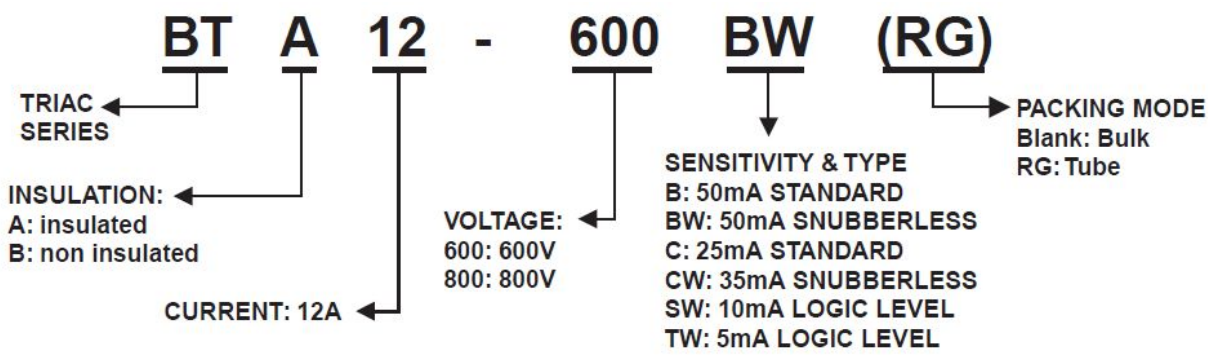
(Tj=25℃,unless otherwise specified)

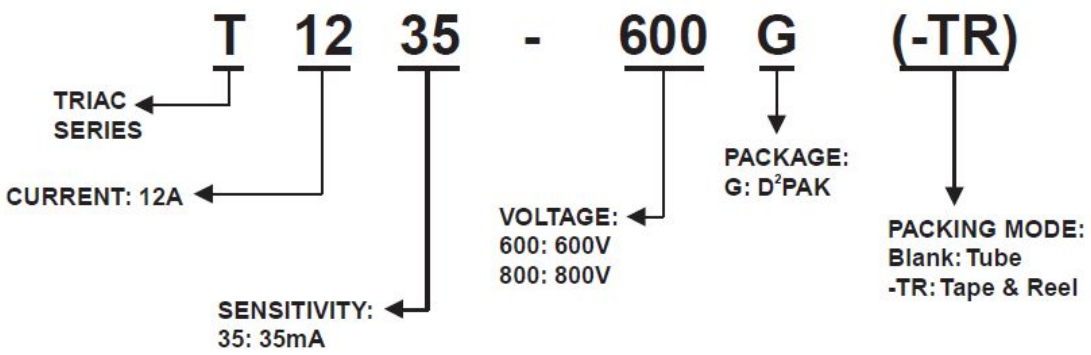
V_{GT}	V_D=12V, I_T=0.1A	≤1.5	V
V_{TM}	I_T=17A	≤1.55	V
I_{DRM}	V_{RRM}=V_{DRM}, Tj = 25°C	≤10	μA
I_{RRM}	V_{RRM}=V_{DRM}, Tj =125°C	≤1	mA

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	℃/W
		TO-220AB Ins	2.3	
		D^2PAK	0.8	
Rth(j-a)	Junction to ambient	TO-220AB	60	℃/W
		TO-220AB Ins	60	
		D^2PAK	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

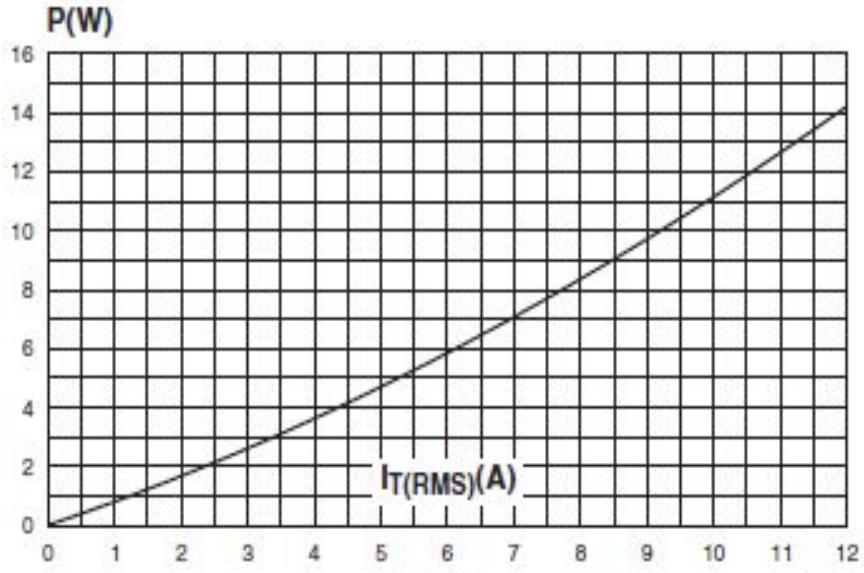


图2 RMS通态电流与Tc温度关系

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

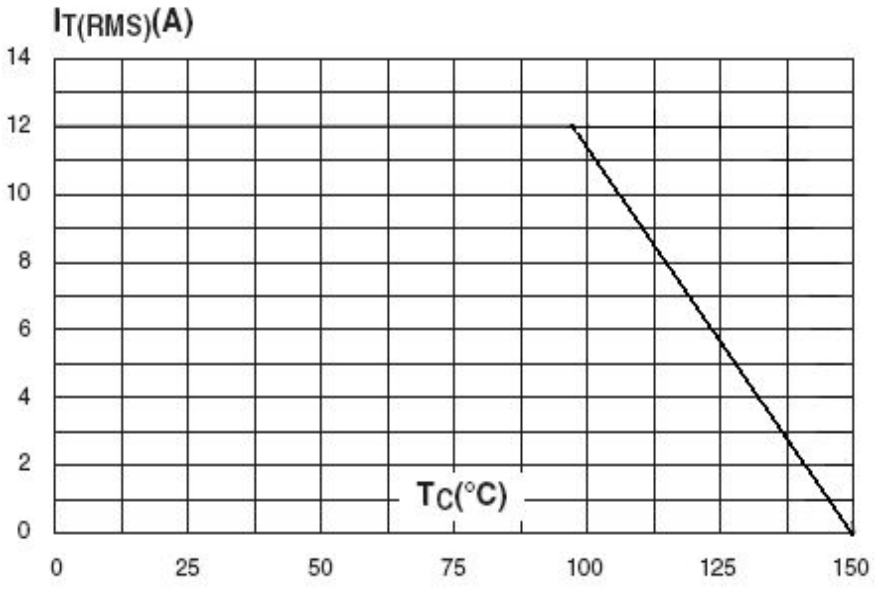


图3 通态特性

Fig.3.On-State Characteristics

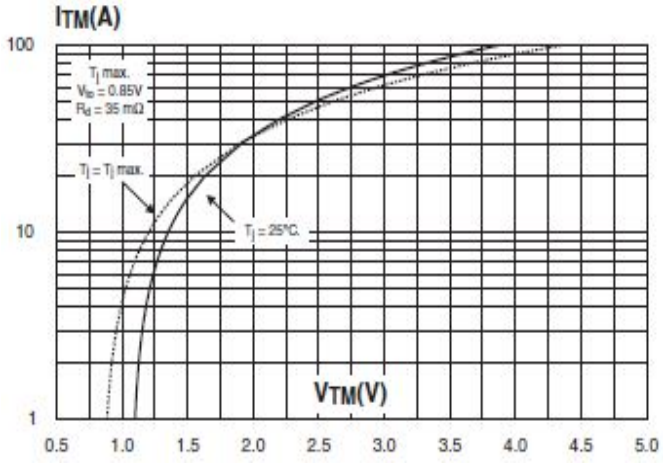


图4 通态浪涌峰值电流与周期数关系

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

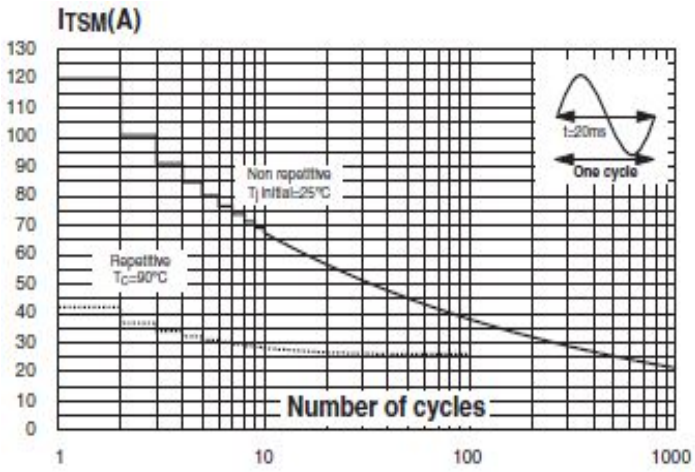
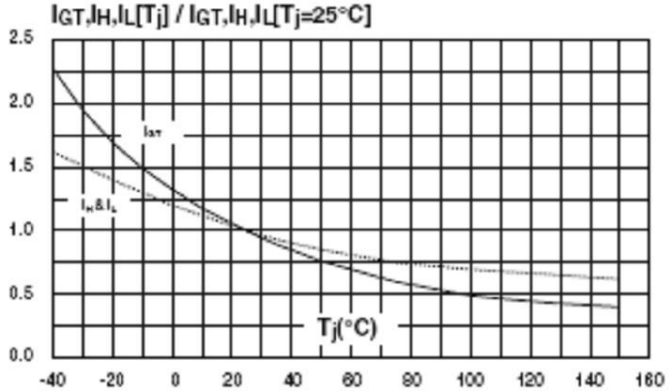


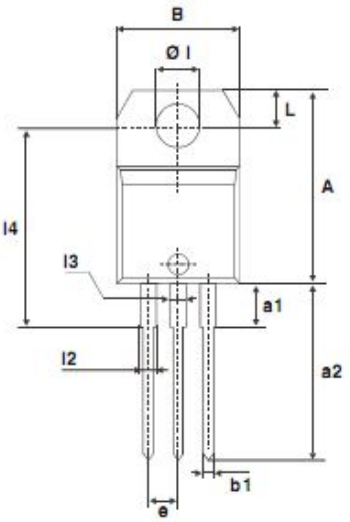
图5 IGT、IH、IL相对值（相对于25℃）与结温关系

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



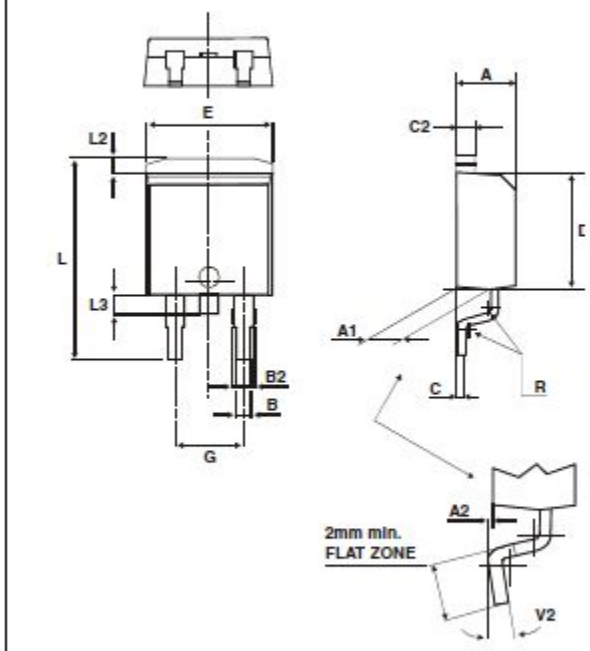
封装尺寸　PACKAGE MECHANICAL DATA

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



Ref.	Dimensions					
	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°