BTA20/BTB20

双向可控硅
TRIAC

版本号
201603-A

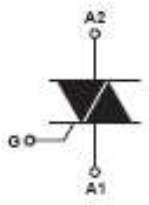
产品概述 GENERAL DESCRIPTION

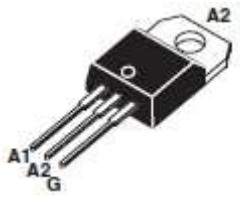
BTB20双向可控硅采用穿通隔离台面结构，复合玻璃钝化PN结表面保护工艺技术，dv/dt高，可靠性高，适用于控温、调光、马达控制。

BTB20 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
$I_{T(RMS)}$	20	A
V_{DRM}/V_{RRM}	600&800	V
I_{GT}	≤50	mA





TO-220AB

TO-220E

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)	T_C=105℃	20	A
I_{TSM}	通态峰值浪涌电流 Non repetitive surge peak on-state current	F=50Hz ,t=20ms	210	A
I^2t	I^2t 耗散值 I^2t value for fusing	T_P=10ms	200	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-+125	℃

电参数(除非另有规定，Tj=25℃) ELECTRICAL CHARACTERISTICS

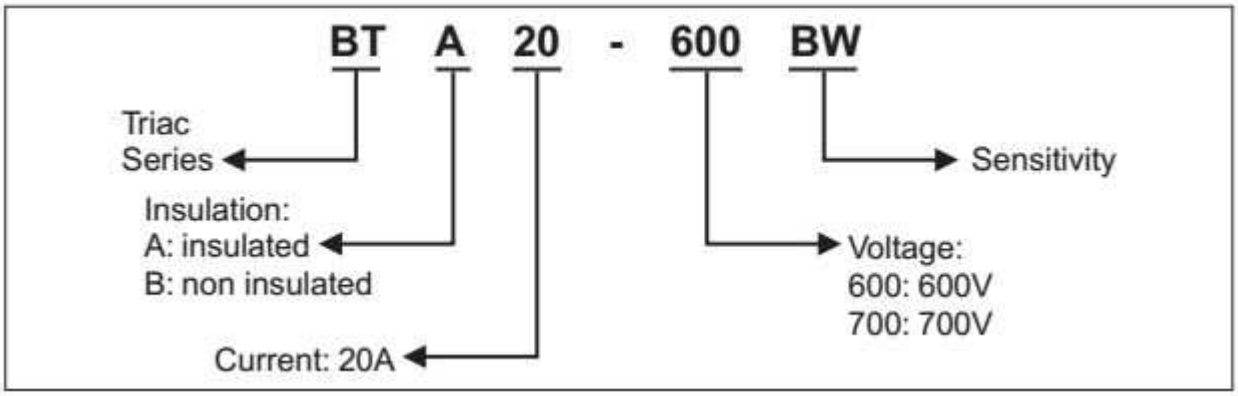
(Tj=25℃,unless otherwise specified)

参数 Parameter	符号 Symbol		规范值 Value CW	规范值 Value BW	单位 Unit	测试条件 Test Conditions
触发电流 Gate trigger current	I_{GT}	Ⅰ～Ⅲ	≤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		≤50	≤75	mA	V_D=12V,I_T=0.1A
擎住电流 Latching current	I_L		≤80	≤100	mA	V_D=12V,I_T=0.1A
电压上升率 Rise of off- state voltage	dv/dt		≥200	≥500	V/μS	V_D=67%V_{DRM}
通态压降 Peak on-state voltage	V_{TM}		≤1.7		V	I_T=28A
断态漏电流 Peak repetitive forward blocking current	I_{DRM}		≤10		μA	V_{RRM}=V_{DRM},Tj = 25°C
	I_{RRM}		≤3		mA	V_{RRM}=V_{DRM},Tj =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	1.3	℃/W
		TO-220E	2.1	
Rth(j-a)	Junction to ambient	TO-220AB	60	℃/W
		TO-220E	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

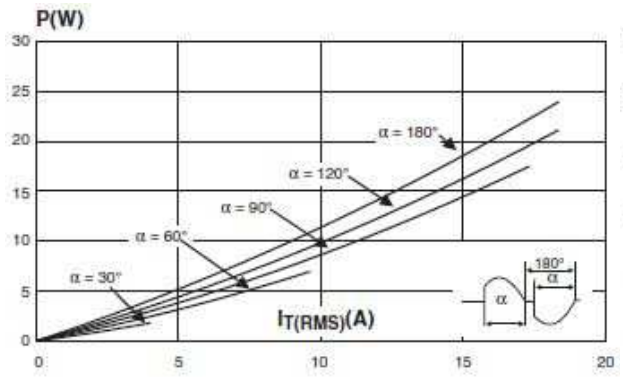


图2 RMS通态电流与Tc温度关系
Fig.2. RMS On-state Current Versus TL

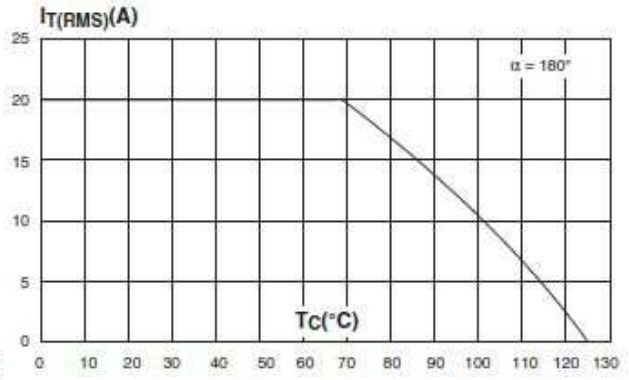


图3 通态特性
Fig.3.On-State Characteristics

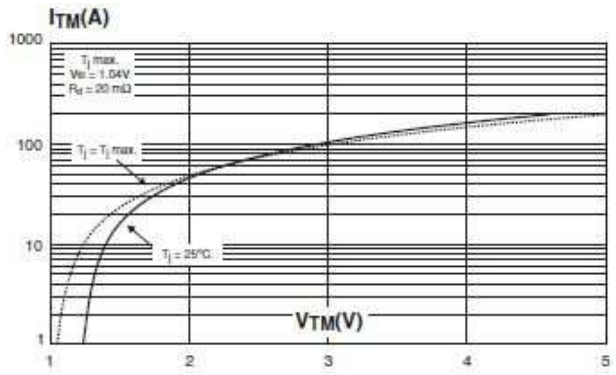


图4 通态浪涌峰值电流与周期数关系
Fig.4.Surge Peak On-state Current Versus Number Cycles

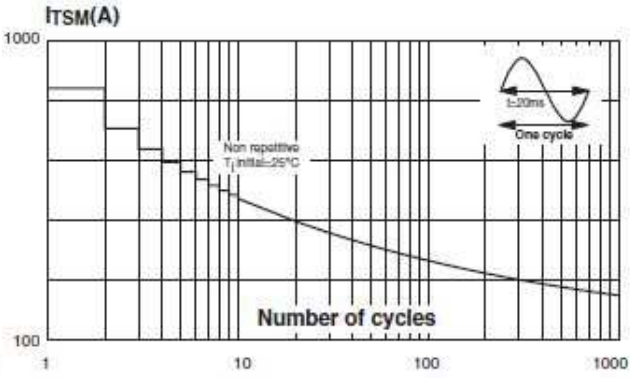
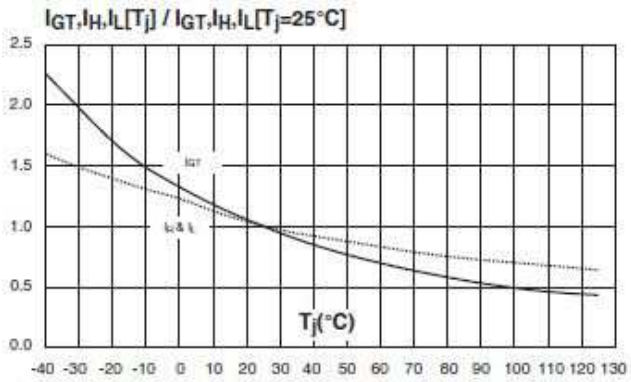
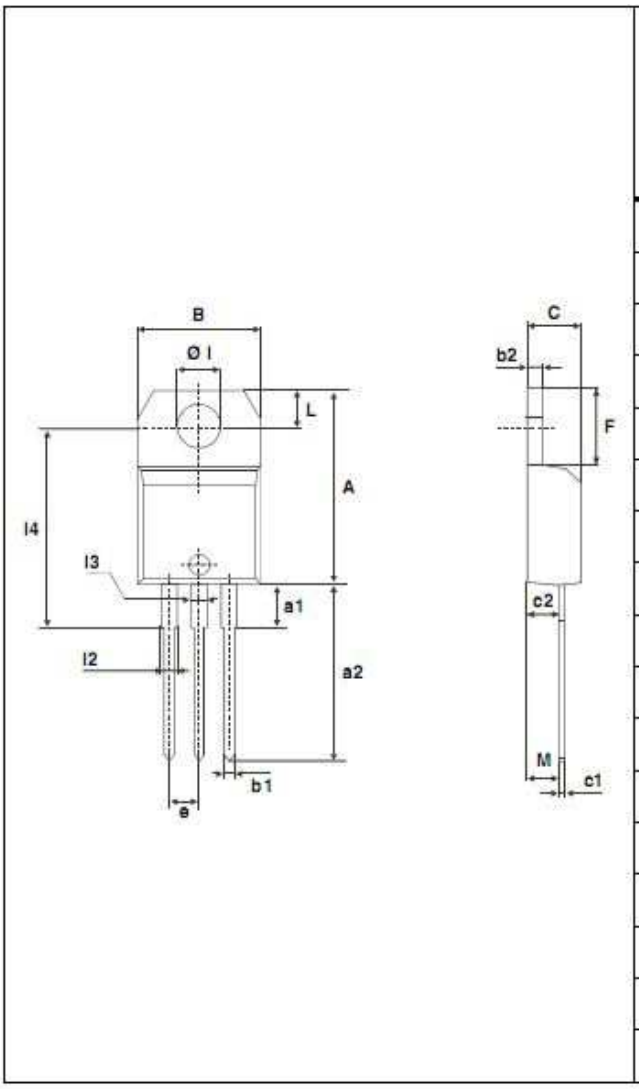


图5 IGT、IH、IL相对值（相对于25℃）与结温关系
Fig.5.Relative Variation Of Gate Trigger Current , Holding Current And Latching Current Versus Junction Temperature (Typical Value)



封装尺寸 PACKAGE MECHANICAL DATA

TO-220AB AND TO-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	0.40		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	

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