

## 阅读申明

- 1.本站收集的数据手册和产品资料都来自互联网，版权归原作者所有。如读者和版权方有任何异议请及时告之，我们将妥善解决。
- 2.本站提供的中文数据手册是英文数据手册的中文翻译，其目的是协助用户阅读，该译文无法自动跟随原稿更新，同时也可能存在翻译上的不当。建议读者以英文原稿为参考以便获得更精准的信息。
- 3.本站提供的产品资料，来自厂商的技术支持或者使用者的心得体会等，其内容可能存在描述上的差异，建议读者做出适当判断。
- 4.如需与我们联系，请发邮件到marketing@iczoom.com，主题请标有“数据手册”字样。

## Read Statement

1. The datasheets and other product information on the site are all from network reference or other public materials, and the copyright belongs to the original author and original published source. If readers and copyright owners have any objections, please contact us and we will deal with it in a timely manner.
2. The Chinese datasheets provided on the website is a Chinese translation of the English datasheets. Its purpose is for reader's learning exchange only and do not involve commercial purposes. The translation cannot be automatically updated with the original manuscript, and there may also be improper translations. Readers are advised to use the English manuscript as a reference for more accurate information.
3. All product information provided on the website refer to solutions from manufacturers' technical support or users the contents may have differences in description, and readers are advised to take the original article as the standard.
4. If you have any questions, please contact us at marketing@iczoom.com and mark the subject with "Datasheets" .



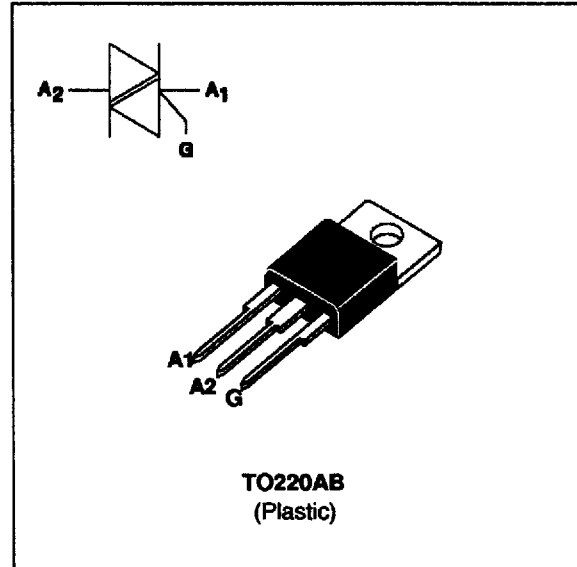
STANDARD TRIACS

**FEATURES**

- HIGH SURGE CURRENT CAPABILITY
- COMMUTATION :  $(dV/dt)_c > 5 \text{ V}/\mu\text{s}$
- BTA Family :  
INSULATING VOLTAGE = 2500V(RMS)  
(UL RECOGNIZED : E81734)

**DESCRIPTION**

The BTA/BTB10 B/C triac family are high performance glass passivated PNP devices. These parts are suitable for general purpose applications where high surge current capability is required. Application such as phase control and static switching on inductive or resistive load.



**ABSOLUTE RATINGS** (limiting values)

Symbol	Parameter		Value	Unit	
$I_T(\text{RMS})$	RMS on-state current (360° conduction angle)	BTA	$T_c = 90 \text{ }^\circ\text{C}$	10	A
		BTB	$T_c = 95 \text{ }^\circ\text{C}$		
$I_{TSM}$	Non repetitive surge peak on-state current ( $T_j$ initial = 25°C )		$t_p = 8.3 \text{ ms}$	105	A
			$t_p = 10 \text{ ms}$	100	
$I^2t$	$I^2t$ value		$t_p = 10 \text{ ms}$	50	A <sup>2</sup> s
$di/dt$	Critical rate of rise of on-state current Gate supply : $I_G = 500\text{mA}$ $di_G/dt = 1\text{A}/\mu\text{s}$		Repetitive $F = 50 \text{ Hz}$	10	A/ $\mu\text{s}$
			Non Repetitive	50	
$T_{stg}$ $T_j$	Storage and operating junction temperature range			- 40 to + 150 - 40 to + 125	$^\circ\text{C}$ $^\circ\text{C}$
$T_l$	Maximum lead temperature for soldering during 10 s at 4.5 mm from case			260	$^\circ\text{C}$

Symbol	Parameter	BTA / BTB10-... B/C				Unit
		400	600	700	800	
$V_{DRM}$ $V_{RRM}$	Repetitive peak off-state voltage $T_j = 125 \text{ }^\circ\text{C}$	400	600	700	800	V

**THERMAL RESISTANCES**

Symbol	Parameter		Value	Unit
Rth (j-a)	Junction to ambient		60	°C/W
Rth (j-c) DC	Junction to case for DC	BTA	3.9	°C/W
		BTB	3.1	
Rth (j-c) AC	Junction to case for 360° conduction angle (F= 50 Hz)	BTA	2.9	°C/W
		BTB	2.3	

**GATE CHARACTERISTICS (maximum values)**

PG (AV) = 1W PGM = 10W (tp = 20 μs) IGM = 4A (tp = 20 μs) VGM = 16V (tp = 20 μs).

**ELECTRICAL CHARACTERISTICS**

Symbol	Test Conditions	Quadrant		Suffix		Unit
				B	C	
IGT	VD=12V (DC) RL=33Ω Tj=25°C	I-II-III	MAX	50	25	mA
		IV	MAX	100	50	
VGT	VD=12V (DC) RL=33Ω Tj=25°C	I-II-III-IV	MAX	1.5		V
VGD	VD=VDRM RL=3.3kΩ Tj=110°C	I-II-III-IV	MIN	0.2		V
tgt	VD=VDRM IG = 500mA dIG/dt = 3A/μs Tj=25°C	I-II-III-IV	TYP	2		μs
IL	IG=1.2 IGT Tj=25°C	I-III-IV	TYP	40	20	mA
		II		70	35	
IH *	IT= 500mA gate open Tj=25°C		MAX	50	25	mA
VTM *	ITM= 14A tp= 380μs Tj=25°C		MAX	1.5		V
IDRM IRRM	VDRM Rated VRRM Rated Tj=25°C		MAX	0.01		mA
			MAX	0.5		
dV/dt *	Linear slope up to VD=67%VDRM gate open Tj=110°C		MIN	250	100	V/μs
(dV/dt)c *	(dI/dt)c = 4.4A/ms Tj=110°C		MIN	10	5	V/μs

\* For either polarity of electrode A2 voltage with reference to electrode A1.

ORDERING INFORMATION

Package	$I_T(\text{RMS})$	$V_{\text{DRM}} / V_{\text{RRM}}$	Sensitivity Specification	
	A	V	B	C
BTA (Insulated)	10	400	X	X
		600	X	X
		700	X	X
		800	X	X
BTB (Uninsulated)	10	400	X	X
		600	X	X
		700	X	X
		800	X	X

Fig.1 : Maximum RMS power dissipation versus RMS on-state current ( $F=50\text{Hz}$ ).  
(Curves are cut off by  $(di/dt)_c$  limitation)

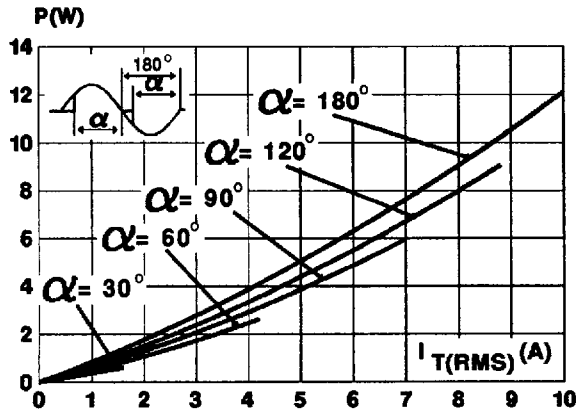


Fig.2 : Correlation between maximum RMS power dissipation and maximum allowable temperatures ( $T_{\text{amb}}$  and  $T_{\text{case}}$ ) for different thermal resistances heatsink + contact (BTA).

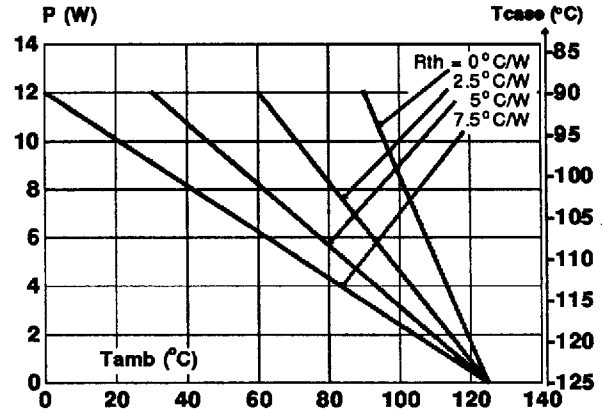
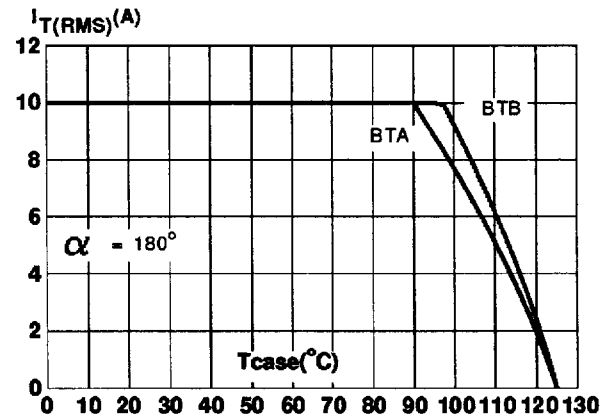
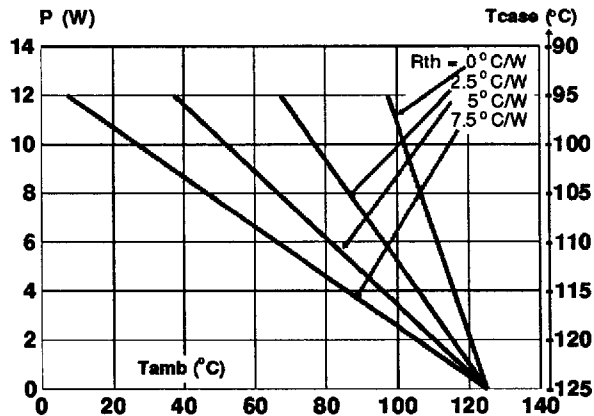


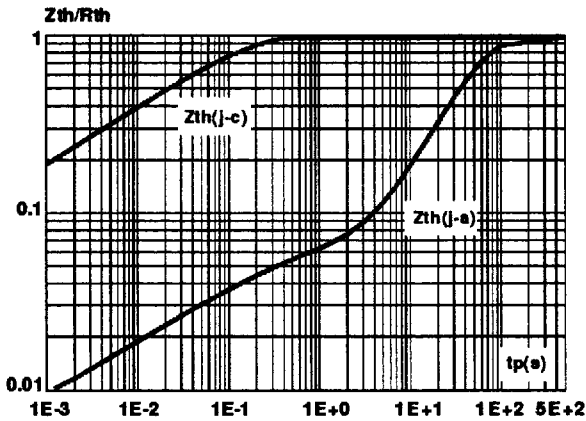
Fig.2 : Correlation between maximum RMS power dissipation and maximum allowable temperatures ( $T_{\text{amb}}$  and  $T_{\text{case}}$ ) for different thermal resistances heatsink + contact (BTB).

Fig.4 : RMS on-state current versus case temperature.

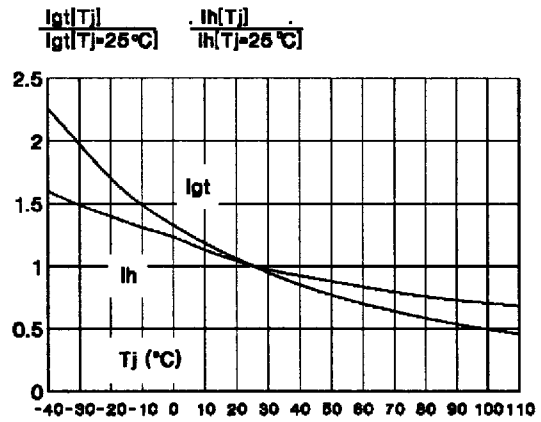


# BTA10 B/C / BTB10 B/C

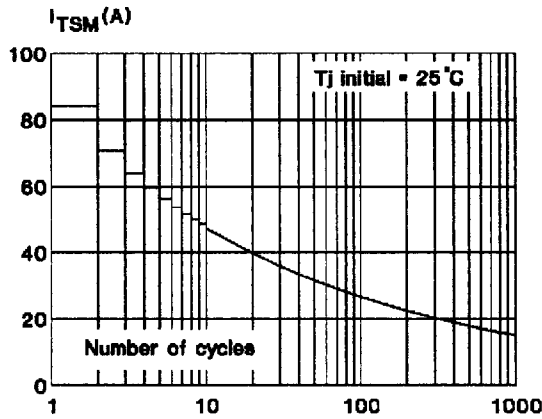
**Fig.5 :** Relative variation of thermal impedance versus pulse duration.



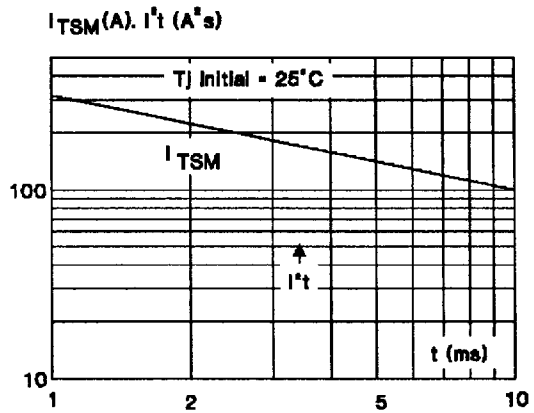
**Fig.6 :** Relative variation of gate trigger current and holding current versus junction temperature.



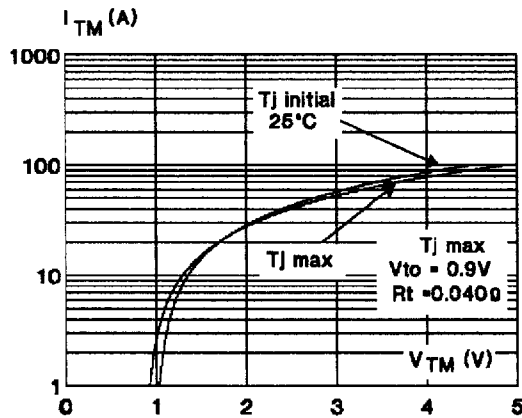
**Fig.7 :** Non Repetitive surge peak on-state current versus number of cycles.



**Fig.8 :** Non repetitive surge peak on-state current for a sinusoidal pulse with width :  $t \leq 10\text{ms}$ , and corresponding value of  $I^2t$ .

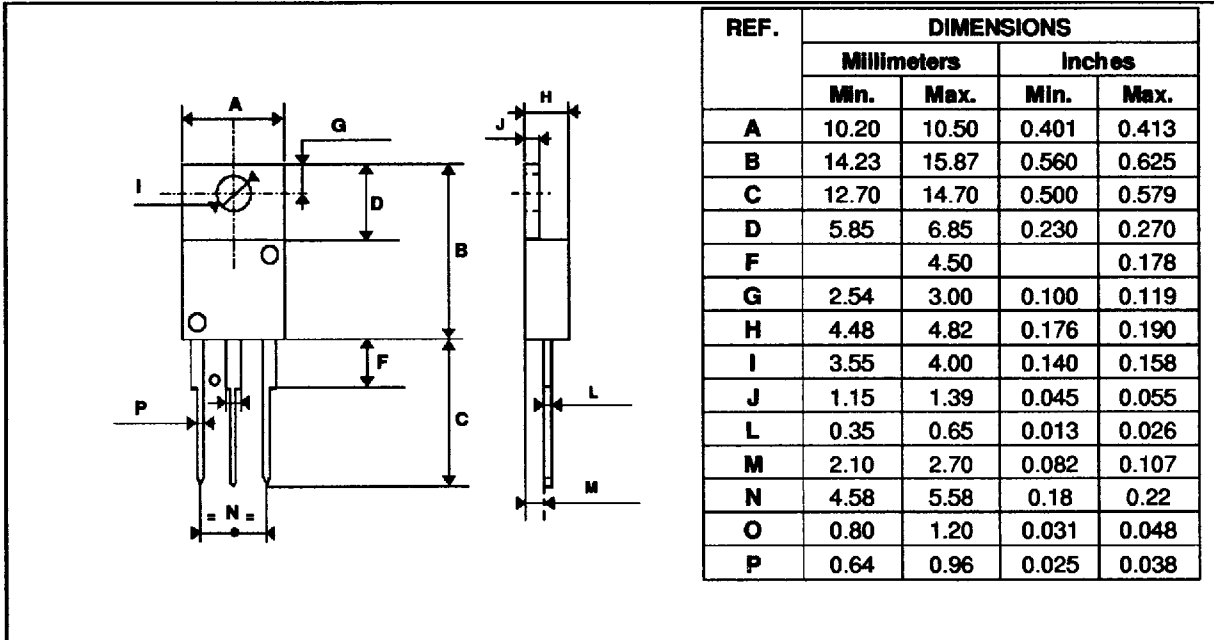


**Fig.9 :** On-state characteristics (maximum values).



**PACKAGE MECHANICAL DATA**

TO220AB Plastic



Cooling method : C  
 Marking : type number  
 Weight : 2.3 g  
 Recommended torque value : 0.8 m.N.  
 Maximum torque value : 1 m.N.

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied.

SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1995 SGS-THOMSON Microelectronics - Printed in Italy - All rights reserved.

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands - Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A.