



# 绍兴怡华电子科技有限公司

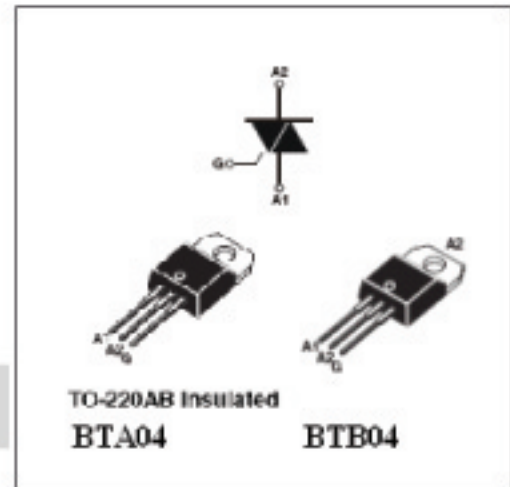
PART NAME: BTA04/B04  
ISSUE DATE: 2010-03-13  
Establishment: Carolyn

## ■ 主要特点:

符号	数值	单位
$I_T$ (RMS)	4	A
$V_{DRM}/V_{RRM}$	600&800	V
IGT (Q1)	5~50	mA

## ■ 用途:

**BTA/BTB04** 双向可控硅系列适用于一般交流开关电路,如:固态继电器,感应马达启动控制,调温控制,调光控制,调速控制...等.



## ■ 极限值:

符号	参数		数值	单位
$I_{T(RMS)}$	RMS 通态电流	$T_C=90^\circ\text{C}$	4	A
$I_{TSM}$	通态峰值浪涌电流	$F=50\text{Hz}, t=20\text{ms}$	35	A
$I^2t$	$I^2t$ 耗散值	$T_F=10\text{ms}$	8	$\text{A}^2\text{s}$
$di/dt$	通态电流上升值	$F=120\text{Hz}, T_j=125^\circ\text{C}$	50	$\text{A}/\mu\text{s}$
$I_{GM}$	门极峰值电流	$TP=20\mu\text{s}, T_j=125^\circ\text{C}$	4	A
$P_{G(AV)}$	平均门极耗散功率	$T_j=125^\circ\text{C}$	1	W
$T_{stg}$	贮存结温范围		-40~+150	$^\circ\text{C}$
$T_j$	工作结温范围		-40~+125	$^\circ\text{C}$

## ■ 电特性

### ELECTRICAL CHARACTERISTICS

Symbol	Test conditions		Quadrant		BTA / BTB04				Unit	
					T	D	S	A		
$I_{GT}$	$V_D = 12V (DC)$	$R_L = 33\Omega$	$T_j = 25^\circ C$	I - II - III	MAX.	5	5	10	10	mA
				IV	MAX.	5	10	10	25	
$V_{GT}$	$V_D = 12V (DC)$	$R_L = 33\Omega$	$T_j = 25^\circ C$	I - II - III - IV	MAX.	1.5				V
$V_{GD}$	$V_D = V_{DRM}$	$R_L = 3.3k\Omega$	$T_j = 110^\circ C$	I - II - III - IV	MIN.	0.2				V
tgt	$V_D = V_{DRM}$	$I_G = 40mA$ $di_G/dt = 0.5A/\mu s$	$T_j = 25^\circ C$	I - II - III - IV	TYP.	2				$\mu s$
$I_L$	$I_G = 1.2I_{GT}$		$T_j = 25^\circ C$	I - III - IV	TYP.	10	10	20	20	mA
				II		20	20	40	40	
$I_H^*$	$I_T = 100mA$	Gate open	$T_j = 25^\circ C$		MAX.	15	15	25	25	mA
$V_{TM}^*$	$I_{TM} = 5.5A$	$t_p = 380\mu s$	$T_j = 25^\circ C$		MAX.	1.65				V
$I_{DRM}$ $I_{RRM}$	$V_{DRM}$ rated $V_{RRM}$ rated		$T_j = 25^\circ C$		MAX.	0.01				mA
			$T_j = 110^\circ C$		MAX.	0.75				
dV/dt *	Linear slope up to $V_D = 67\% V_{DRM}$ gate open		$T_j = 110^\circ C$		TYP.	10	10	-	-	V/ $\mu s$
					MIN.	-	-	10	10	
(dI/dt)c*	(dI/dt)c = 1.8A/ms		$T_j = 110^\circ C$		TYP.	1	1	5	5	V/ $\mu s$

## ■ 热阻:

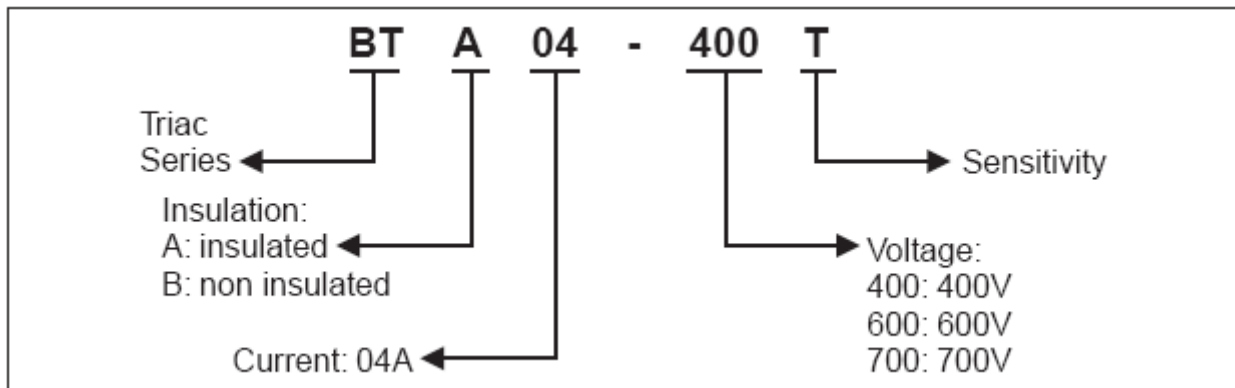
### THERMAL RESISTANCE

Symbol	Parameter		Value	Unit
$R_{th(j-a)}$	Junction to ambient		60	$^\circ C/W$
$R_{th(j-c)} DC$	Junction to case for DC	BTA	4.4	$^\circ C/W$
		BTB	3.2	
$R_{th(j-c)} AC$	Junction to case for 360° conduction angle (F = 50Hz)	BTA	3.3	$^\circ C/W$
		BTB	2.4	

### GATE CHARACTERISTICS (maximum values)

$P_{G(AV)} = 1W$   $P_{GM} = 40W$  ( $t_p = 20\mu s$ )  $I_{GM} = 4A$  ( $t_p = 20\mu s$ )  $V_{GM} = 16V$  ( $t_p = 20\mu s$ )

## ■ 命名方式:



## ■ 特性曲线:

Fig. 1: Maximum power dissipation versus RMS on-state current

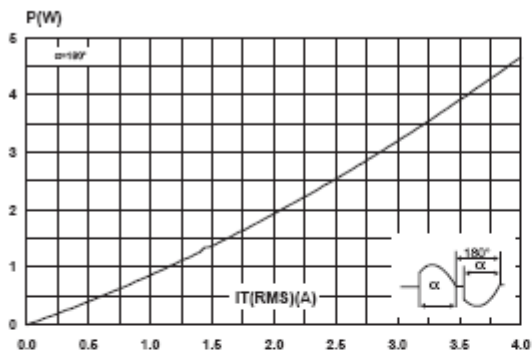


Fig. 2: RMS on-state current versus case temperature.

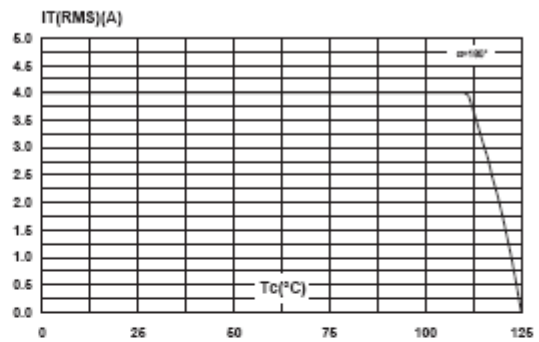


Fig. 3: Relative variation of thermal impedance versus pulse duration.

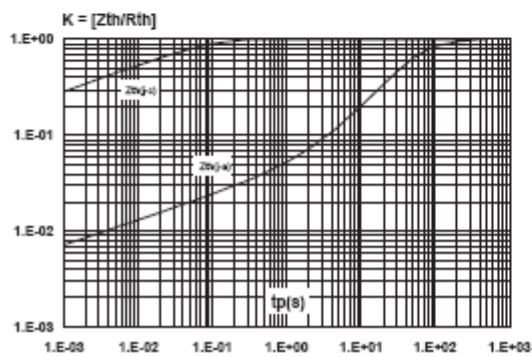
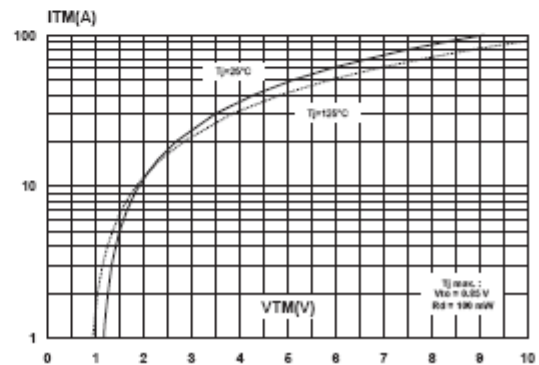


Fig. 4: On-state characteristics (maximum values)



## ■ 特性曲线:

Fig. 5: Surge peak on-state current versus number of cycles.

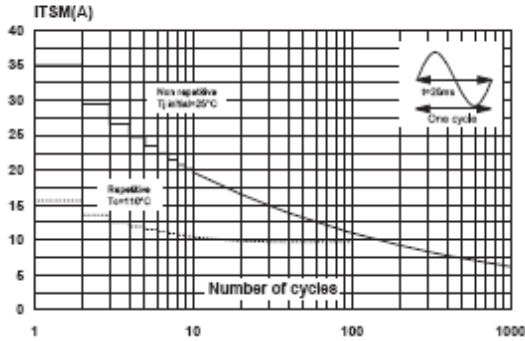


Fig. 6: Non repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I^2t$ .

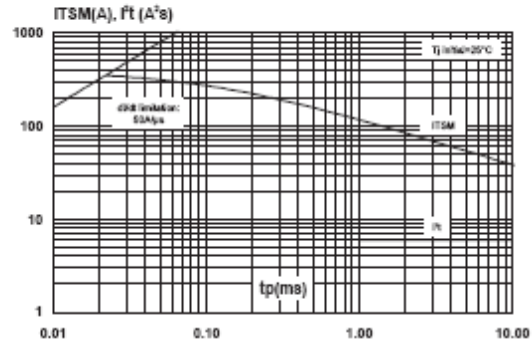


Fig. 7: Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values).

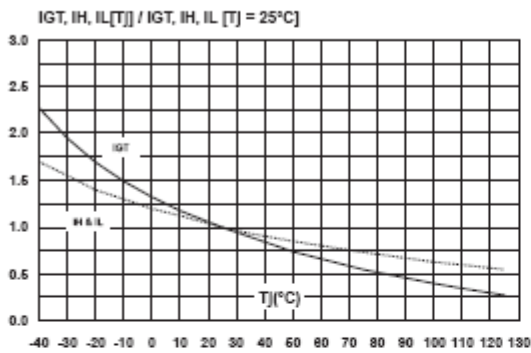


Fig. 8: Relative variation of critical rate of decrease of main current versus reapplied dV/dt (typical values).

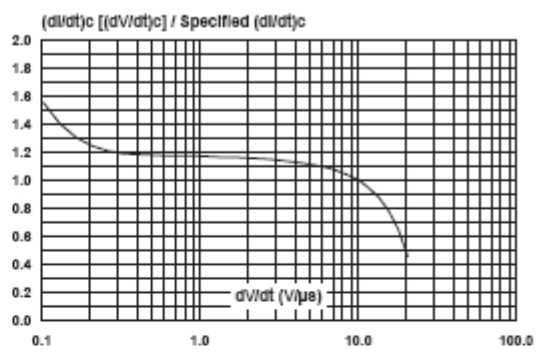


Fig. 9: Relative variation of critical rate of decrease of main current versus junction temperature.

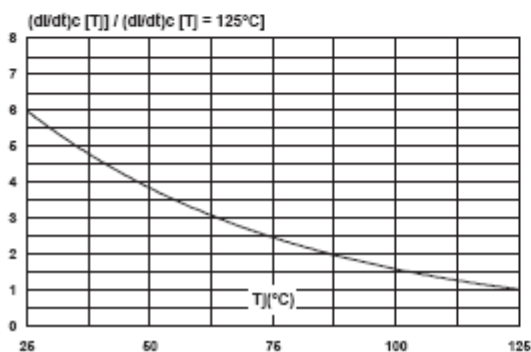
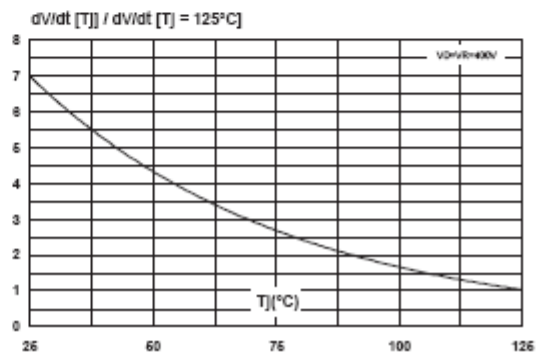


Fig. 10: Relative variation of static dV/dt immunity versus junction temperature.



## ■ TO-220AB/TO220ABInsulated 外形尺寸

