YIHUA
PART NAME: BTA/B10
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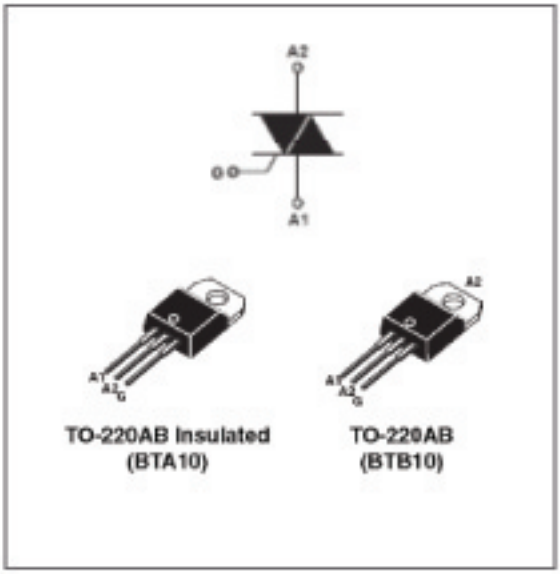
Establishment: Carolyn

绍兴怡华电子科技有限公司

■ 主要特点：

符号	数值	单位
IT（RMS）	10	A
V_{DRM}/V_{RRM}	600&800	V
IGT（Q1）	5～50	mA



■ 用途：

BTA/BTB10 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℃	10	A
I_{TSM}	通态峰值浪涌电流	F=50H_Z,t=20ms	100	A
I^2t	I^2t 耗散值	T_P=10ms	55	A^2s
di/dt	通态电流上升值	F=120H_Z,Tj=125℃	50	A/μs
I_{GM}	门极峰值电流	TP=20μs,Tj=125℃	4	A
$P_{G(AV)}$	平均门极耗散功率	Tj=125℃	1	W
Tstg	贮存结温范围		-40~+150	℃
Tj	工作结温范围		-40~+125	℃

■ 电特性

■ SNUBBERLESS (3 quadrants)

Symbol	Test Conditions	Quadrant		BTA10 / BTB10		Unit
				CW	BW	
I_{GT} (1)	V_D = 12 V R_L = 33 Ω	I - II - III	MAX.	35	50	mA
V_{GT}		I - II - III	MAX.	1.3		V
V_{GD}	$V_D = V_{DRM}$ R_L = 3.3 kΩ T_j = 125°C	I - II - III	MIN.	0.2		V
I_H (2)	I_T = 500 mA		MAX.	35	50	mA
I_L	I_G = 1.2 I_{GT}	I - III	MAX.	50	70	mA
		II		60	80	
dV/dt (2)	V_D = 67 %V_{DRM} gate open T_j = 125°C		MIN.	500	1000	V/µs
(dI/dt)c (2)	Without snubber T_j = 125°C		MIN.	5.5	9.0	A/ms

■ Standard (4 quadrants)

Symbol	Test Conditions	Quadrant		BTA10 / BTB10		Unit
				C	B	
I_{GT} (1)	V_D = 12 V R_L = 33 Ω	I - II - III IV	MAX.	25 50	50 100	mA
V_{GT}		ALL	MAX.	1.3		V
V_{GD}	$V_D = V_{DRM}$ R_L = 3.3 kΩ T_j = 125°C	ALL	MIN.	0.2		V
I_H (2)	I_T = 500 mA		MAX.	25	50	mA
I_L	I_G = 1.2 I_{GT}	I - III - IV	MAX.	40	50	mA
		II		80	100	
dV/dt (2)	V_D = 67 %V_{DRM} gate open T_j = 125°C		MIN.	200	400	V/µs
(dV/dt)c (2)	(dI/dt)c = 4.4 A/ms T_j = 125°C		MIN.	5	10	V/µs

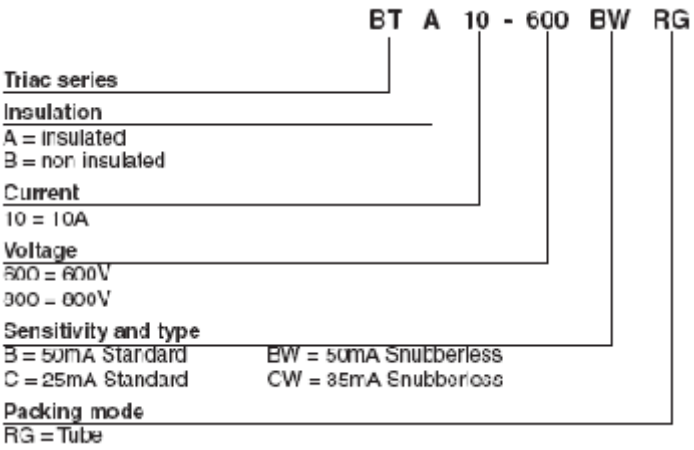
■ 静态特性：

符号	测试条件			数值	单位
V_{TM}	**I_{TM}=11A，T_P=380 ms**	Tj=25℃	**MAX**	**1.55**	**V**
V_{TO}	开启电压	Tj=125℃	**MAX**	**0.85**	**V**
Rd	动态电阻	Tj=125℃	**MAX**	**40**	mΩ
I_{DRM} **I_{RRM}**	**V_{DRM}=V_{RRM}**	Tj=25℃	**MAX**	**5**	μA

■ 热阻：

符号	参数		数值	单位
Rth(j-c)	Junction to case (AC)	**TO220AB**	**1.5**	℃/W
		TO220ABInsulated	**2.4**	
Rth(j-a)	Junction to ambient	**TO220**	**60**	℃/W
		TO220ABInsulated		

■ 命名方式：



■ 特性曲线：

Figure 1: Maximum power dissipation versus RMS on-state current (full cycle)

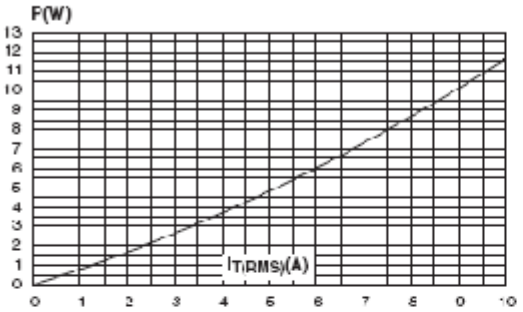


Figure 2: RMS on-state current versus case temperature (full cycle)

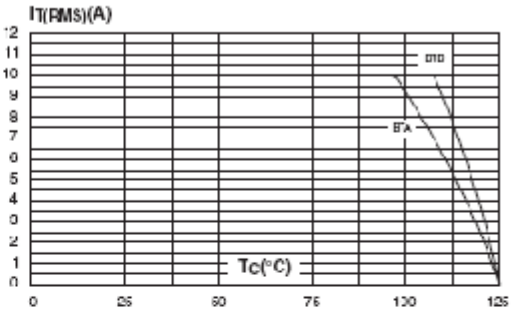


Figure 3: Relative variation of thermal impedance versus pulse duration

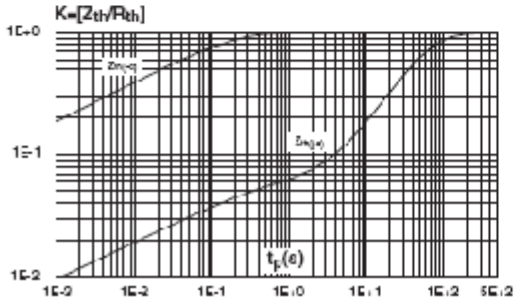


Figure 4: On-state characteristics (maximum values)

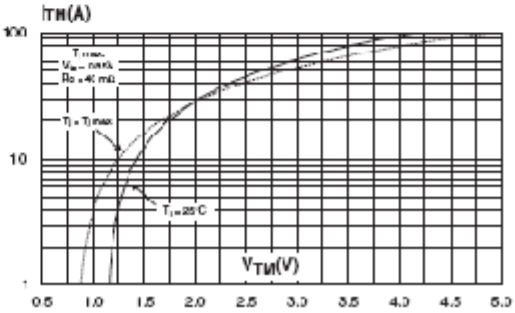


Figure 5: Surge peak on-state current versus number of cycles

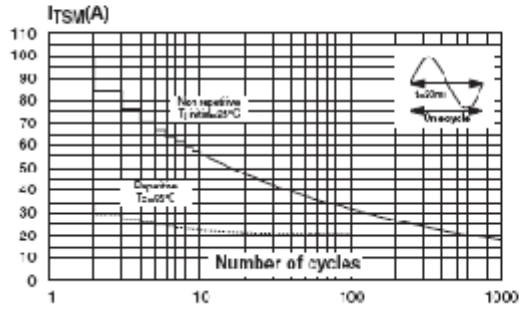
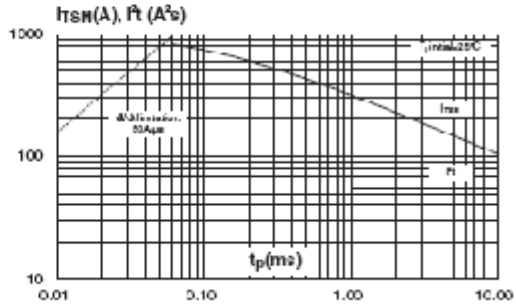


Figure 6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10$ ms and corresponding value of I^2t



■ 特性曲线：

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

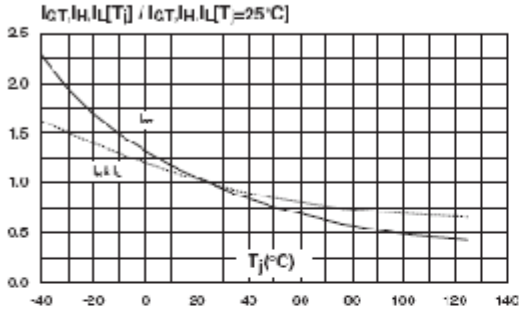


Figure 8: Relative variation of critical rate of decrease of main current versus (dV/dt)c (typical values)

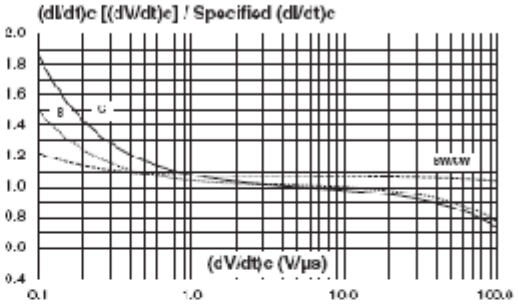
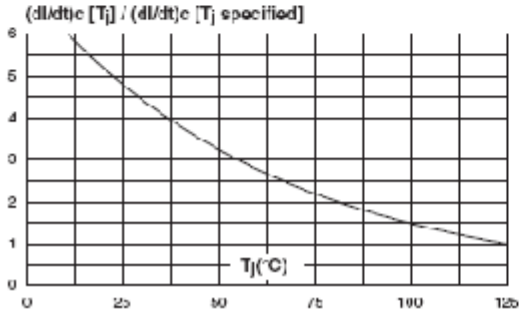
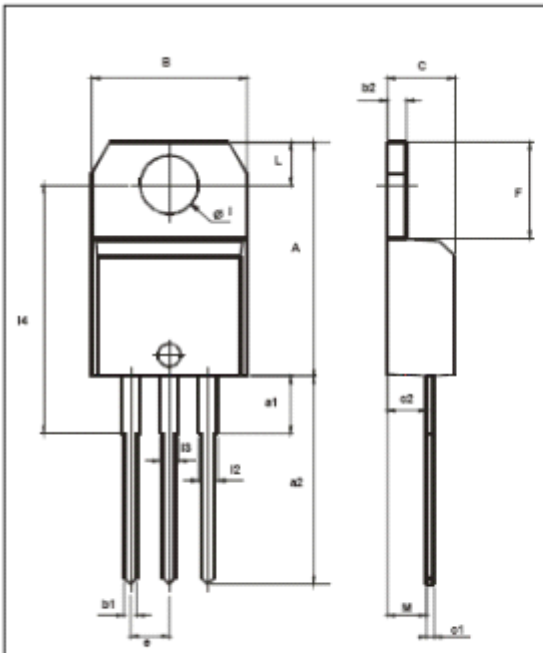


Figure 9: Relative variation of critical rate of decrease of main current versus junction temperature



■ TO-220AB/TO220ABInsulated 外形尺寸



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	0.49		0.70	0.019		0.027
c2	2.40		2.72	0.094		0.107
e	2.40		2.70	0.094		0.106
F	6.20		6.60	0.244		0.259
I	3.75		3.85	0.147		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	