



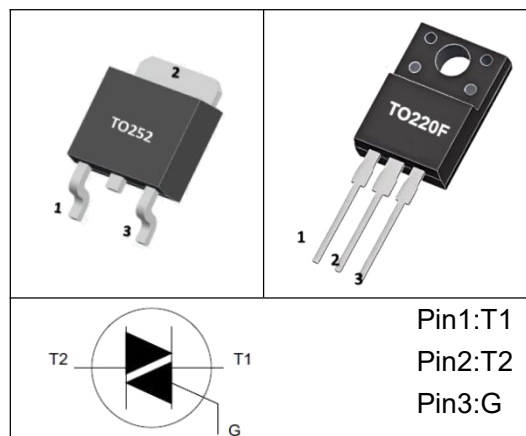
BTB06

TRIAC

GENERAL DESCRIPTION

*The BTB06 is a 6A triacs which can be operated in 3 quadrants, it uses our advanced technology to provide customers with high commutation performances.

*The BTB06 is suitable for AC switching application and phase control application such as fan speed and temperature modulation control, lighting control and static switching relay, either in through-hole or surface-mount packages.



MARKING



HY : HY LOGO

BTB06=Device Code

XXXX=Date Code

800E:V_{DRM}/V_{RRM}

Solid Dot=Green molding compound

ABSOLUTE MAXIMUM RATINGS (TC=25°C, unless otherwise specified)

SYMBOL	PARAMETER	TEST CONDITION	VALUE	UNIT
V _{DRM} /V _{RRM}	Repetitive Peak off-state/reverse voltage	BTB06-600	600	V
		BTB06-800	800	
I _{T(RMS)}	RMS On-State Current(Full Sine Wave)	T _c =110°C	6	A
I _{TSM}	Non Repetitive Surge Peak On-State Current ((Full Cycle T _J initial=25°C)	t=20ms F=50Hz	60	A
		t=16.7ms F=60Hz	63	
I _{GM}	Peak Gate Current	t _p =20μs T _J =125°C	4	A
I ² t	I ² t Value for Fusing	t _p =10ms	21	A ² S
di/dt	Critical Rate of Rise of On-State Current: I _G =2I _{GT} , t _r ≤100ns	F=120Hz T _J =125°C	50	A/μs
P _{G(AV)}	Average Gate Power Dissipation (T _J =125°C)		1	W
T _{stg}	Storage Junction Temperature		-40 to +150	°C
T _J	Operating junction temperature		125	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.



BTB06

TRIAC

THERMAL RESISTANCES

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	TO-252/TO-220F	$R_{\theta JA}$	62.5	$^{\circ}\text{C}/\text{W}$
Junction to Case	TO-220F	$R_{\theta JC}$	3.31	$^{\circ}\text{C}/\text{W}$
	TO-252		2.6	$^{\circ}\text{C}/\text{W}$

SENSITIVITY AND TYPE

PART NUMBER	VOLTAGE		SENSITIVITY	TYPE
	600V	800V		
B	⊙	⊙	50mA	STANDARD
C	⊙	⊙	25mA	STANDARD

⊙ : Available

ELECTRICAL CHARACTERISTICS ($T_c=25^{\circ}\text{C}$ unless otherwise noted)

FOR STANDARD (4 QUADRANTS)

PARAMETER	SYMBOL	TEST CONDITIONS		C			B			UNIT
				MIN	TYP	MAX	MIN	TYP	MAX	
Gate Trigger Current (Note 1)	I_{GT}	$V_D=12\text{V}$, $R_L=30\Omega$	T2+, G+			25			50	mA
			T2+, G -			25			50	
			T2-, G -			25			50	
Gate Trigger Voltage	V_{GT}	$V_D=12\text{V}$, $R_L=30\Omega$	T2+, G+			1.3			1.3	V
			T2+, G -			1.3			1.3	
			T2-, G -			1.3			1.3	
Gate Non-Trigger Voltage	V_{GD}	$V_D=V_{DRM}$ $R_L=3.3\text{k}\Omega$ $T_J=125^{\circ}\text{C}$	I-II-III	0.2			0.2			V
Holding Current (Note 2)	I_H	$I_T=500\text{mA}$				25			50	mA
Latching Current	I_L	$I_G=1.2I_{GT}$	I-III			40			50	mA
			II			80			100	mA
Critical Rate of Rise of Off-State Voltage(Note 2)	dV/dt	$V_D=67\%V_{DRM}$ (Gate Open) $T_J=125^{\circ}\text{C}$		200			400			V/ μs
Critical Rate of Rise of Off-State Voltage at Commutation (Note 2)	(dV/dt) _c	(dI/dt) _c =2.7A/ms, $T_J=125^{\circ}\text{C}$		5			10			V/ μs



BTB06

TRIAC

■ STATIC CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Peak On-State Voltage (Note 2)	V_{TM}	$I_{TM}=8.5A$, $t_p=380\mu s$	$T_J=25^\circ C$			1.55	V
Threshold Voltage (Note 2)	V_{TO}		$T_J=125^\circ C$			0.85	V
Dynamic Resistance (Note 2)	R_D		$T_J=125^\circ C$			60	m Ω
Repetitive Peak Off-State Current	I_{DRM}	$V_{DRM}=V_{RRM}$	$T_J=25^\circ C$			5	μA
	I_{RRM}		$T_J=125^\circ C$			1	mA

Notes: 1. Minimum I_{GT} is guaranteed at 5% of I_{GT} max.

2. For both polarities of MT2 referenced to MT1.

■ TYPICAL CHARACTERISTICS (1)

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

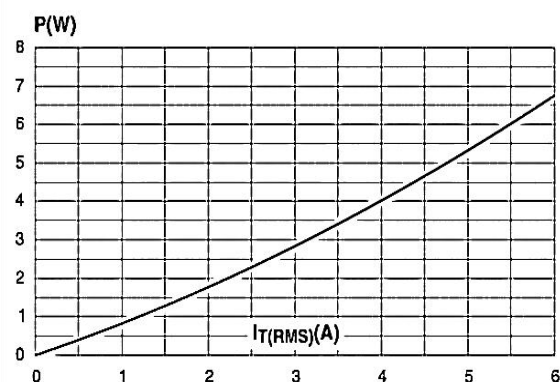


Figure 2: RMS on-state current versus case temperature (full cycle)

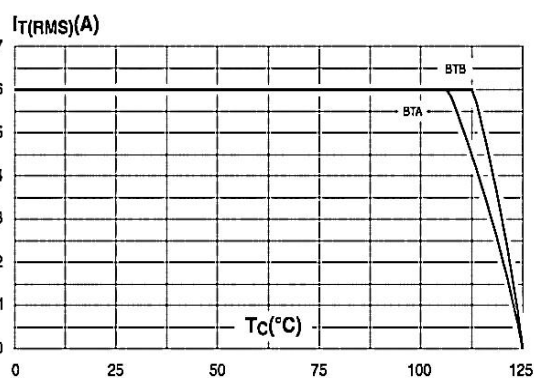


Figure 3: Relative variation of thermal impedance versus pulse duration

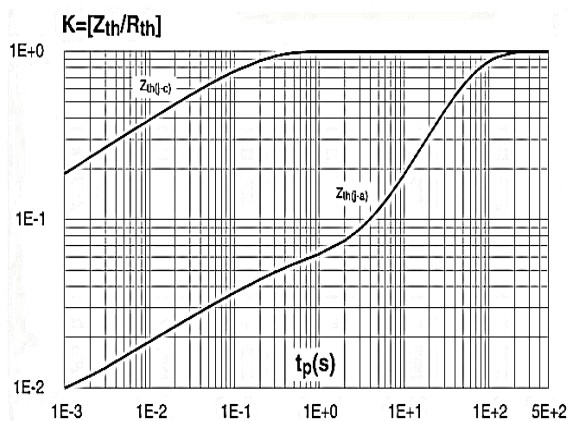
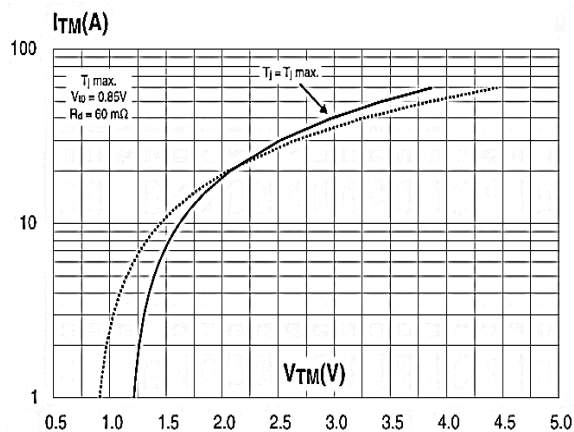


Figure 4: On-state characteristics (maximum values)





BTB06

TRIAC

■ TYPICAL CHARACTERISTICS (2)

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

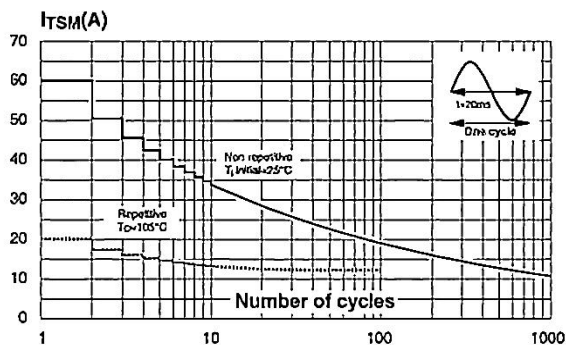


Figure 6: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10$ ms and corresponding value of I^2t

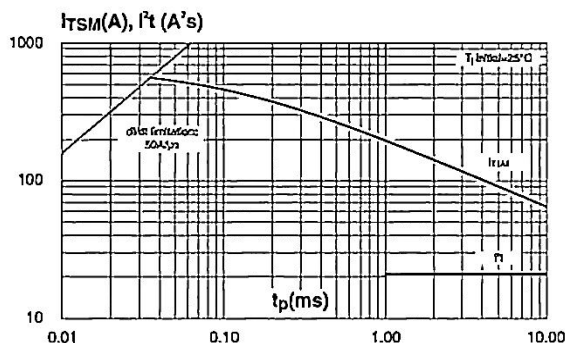


Figure 7: Relative variation of gate trigger current, holding current and latching current versus junction temperature (typical values)

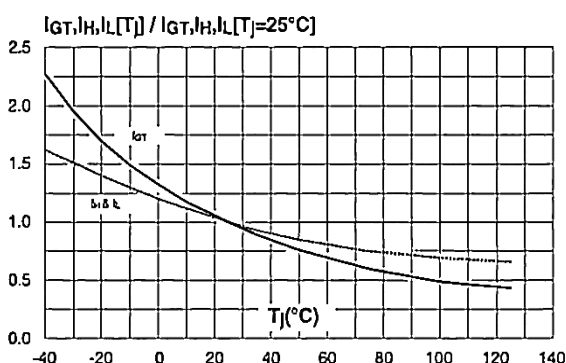


Figure 8: Relative variation of critical rate of decrease of main current versus $(dV/dt)_c$ (typical values) (Snubberless & logic level types)

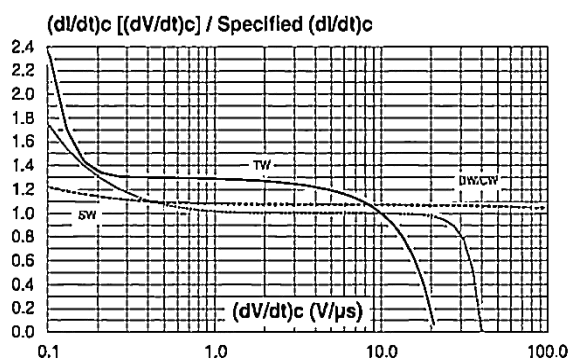


Figure 9: Relative variation of critical rate of decrease of main current versus $(dV/dt)_c$ (typical values) (Standard types)

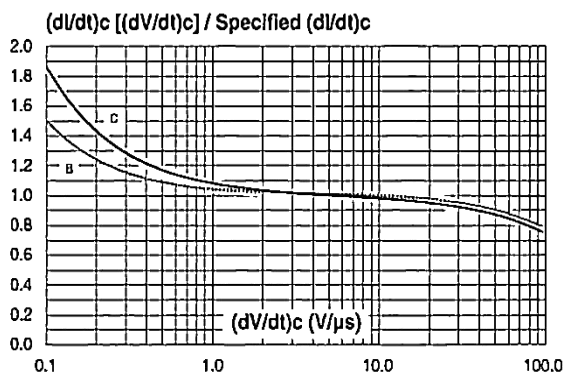
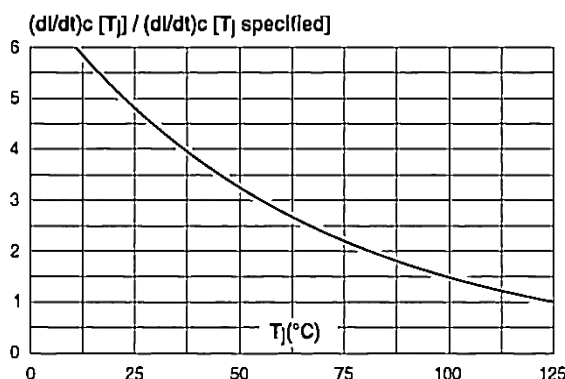


Figure 10: Relative variation of critical rate of decrease of main current versus junction temperature

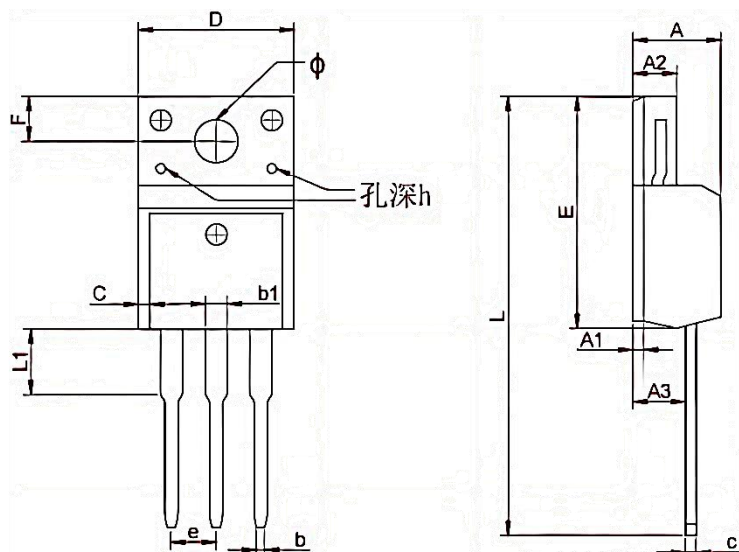




BTB06

TRIAC

TO - 220F PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max	Min	Max
A	4.300	4.750	0.169	0.185
A1	1.830 REF		0.072 REF	
A2	2.300	2.850	0.090	0.112
A3	2.500	2.900	0.098	0.114
b	0.400	0.420	0.016	0.016
b1	1.220	1.280	0.048	0.050
C	0.690	0.720	0.027	0.028
c	0.490	0.510	0.019	0.020
D	9.960	10.200	0.392	0.400
E	15.000	15.950	0.588	0.625
e	2.574 TYP		0.101TYP	
F	3.470 REF		0.136 REF	
y	3.200 REF		0.125 REF	
h	0.000	0.300	0.000	0.012
L	28.780	28.900	1.128	1.133
L1	2.990	3.100	0.117	0.122

TO - 220F PACKING INFORMATION



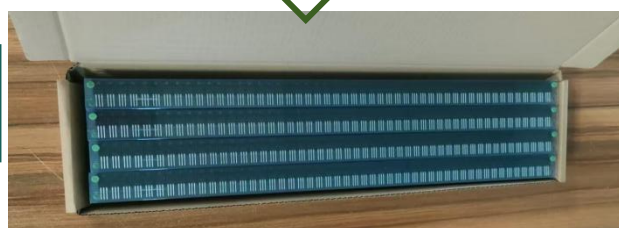
50PCS



20 Tube



5 Inner
Box



Package version	Tube dimensions LxW×H (mm)	Per Tube (pcs)	Tube per box	Inner box dimensions LxW×H (mm)	PCS/ Inner box	Outer box dimensions L×W×H(mm)	PCS/ Outer box
-----------------	----------------------------------	-------------------	--------------	---------------------------------------	-------------------	-----------------------------------	-------------------

TRIAC