

BTB04-600SL 4A TRIAC

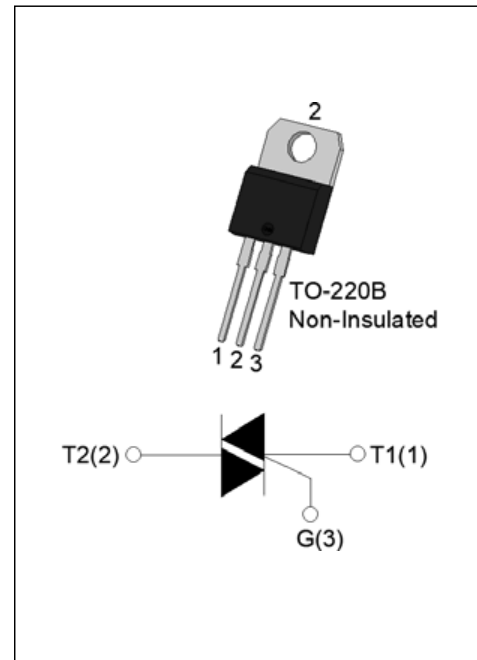
Rev.A.2.0

DESCRIPTION

The BTB04-600SL triac is suitable for general purpose AC switching. It can be used as an ON/OFF function in applications such as heating regulation, induction motor starting circuits, for phase control operation in light dimmers, motor speed controllers. Package TO-220B is RoHS compliant.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
V_{DRM}/V_{RRM}	600	V
$I_{GT\ I\ /II/III/IV}$	10/10/10/25	mA



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T _{stg}	-40~150	℃
Operating junction temperature range		T _j	-40~125	℃
Repetitive peak off-state voltage (T _j =25℃)		V _{DRM}	600	V
Repetitive peak reverse voltage (T _j =25℃)		V _{RRM}	600	V
RMS on-state current (T _c ≤90℃)		I _{T(RMS)}	4	A
Non repetitive surge peak on-state current (full cycle, t _p =20ms, T _j =25℃)		I _{TSM}	35	A
Non repetitive surge peak on-state current (full cycle, t _p =16.6ms, T _j =25℃)			38.5	A
I ² t value for fusing (t _p =10ms, T _j =25℃)		I ² t	6.1	A ² s
Critical rate of rise of on-state current (I _G =2×I _{GT} , f=100Hz, T _j =125℃)	I - II - III	di/dt	80	A/μs
	IV		40	
Peak gate current (t _p =20μs, T _j =125℃)		I _{GM}	2	A
Average gate power dissipation (T _j =125℃)		P _{G(AV)}	0.5	W
Peak gate power		P _{GM}	5	W
Peak pulse voltage (T _j =25℃, non-repetitive, off-state)		V _{PP}	3.5	kV

BTB04-600SL 4A TRIAC

Rev.A.2.0

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

Symbol	Test Condition	Quadrant	Value		Unit
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	I - II - III	MAX.	10	mA
		IV		25	
V_{GT}		ALL	MAX.	1	V
V_{GD}	$V_D=V_{DRM} \ T_j=125^{\circ}\text{C}$ $R_L=3.3\text{K}\Omega$	ALL	MIN.	0.2	V
I_L	$I_G=1.2I_{GT}$	I - III - IV	MAX.	20	mA
		II		30	
I_H	$I_T=100\text{mA}$		MAX.	25	mA
dV/dt	$V_D=400\text{V}$ Gate Open $T_j=125^{\circ}\text{C}$		MIN.	300	V/ μs
$(dV/dt)_c$	$(dI/dt)_c=1.8\text{A/ms}$, $T_j=110^{\circ}\text{C}$		MIN.	6	V/ μs
t_{on}	$I_G=40\text{mA } I_A=200\text{mA } I_R=20\text{mA}$ $T_j=25^{\circ}\text{C}$		TYP.	1.5	μs
t_{off}				15	

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_{TM}=5\text{A } t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.7	V
V_{TO}	Threshold voltage	$T_j=125^{\circ}\text{C}$	0.94	V
R_D	Dynamic resistance	$T_j=125^{\circ}\text{C}$	124	m Ω
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	0.3	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (AC)	2.1	$^{\circ}\text{C/W}$
$R_{th(j-a)}$	junction to ambient (AC)	60	$^{\circ}\text{C/W}$

BTB04-600SL 4A TRIAC

Rev.A.2.0

FIG.1 Maximum power dissipation versus RMS on-state current

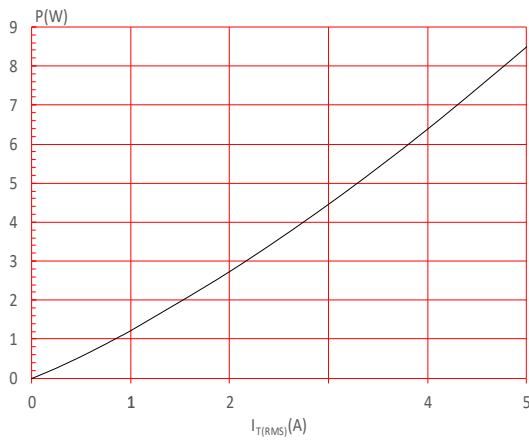


FIG.2: RMS on-state current versus case temperature

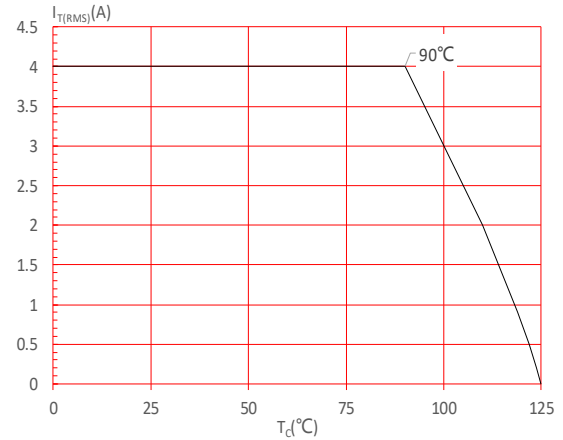


FIG.3: Surge peak on-state current versus number of cycles

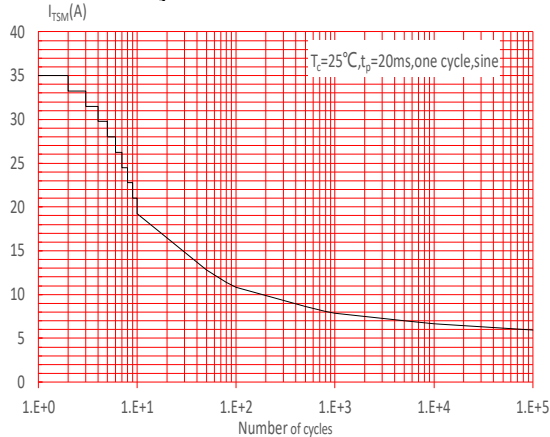


FIG.4: On-state characteristics

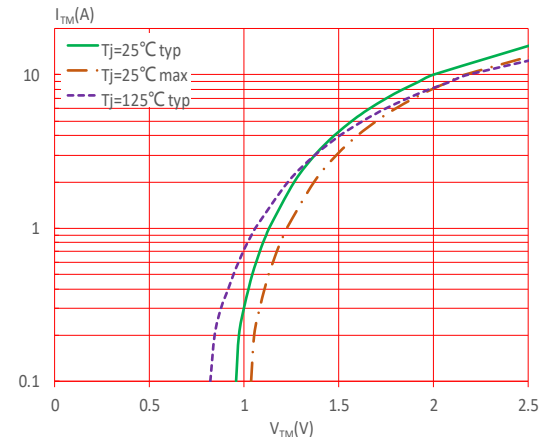


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 20ms$, and corresponding value of I^2t (I - II : $di/dt < 80A/\mu s$; III - IV : $di/dt < 40A/\mu s$)

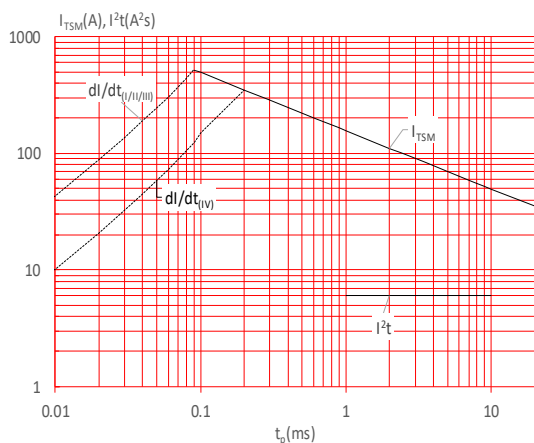
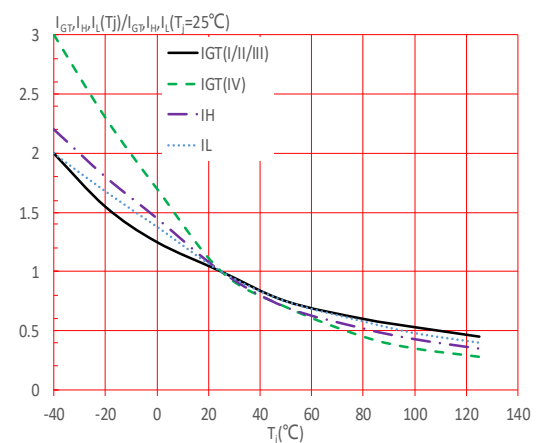


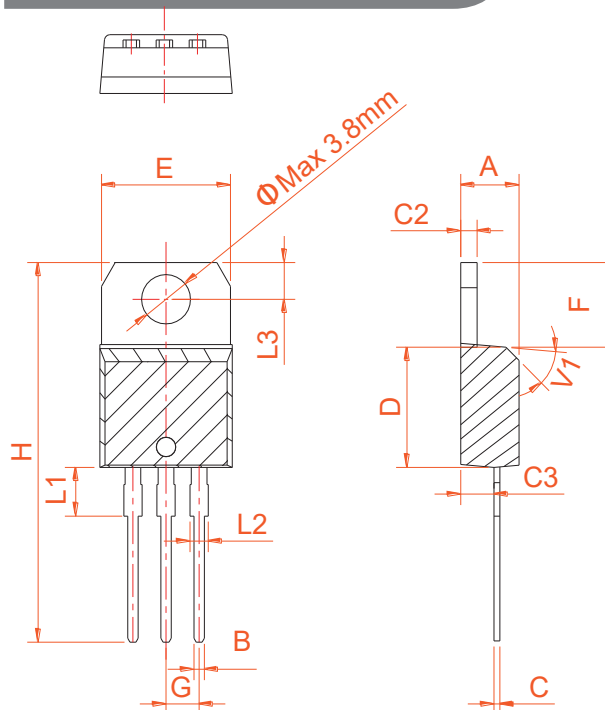
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



BTB04-600SL 4A TRIAC

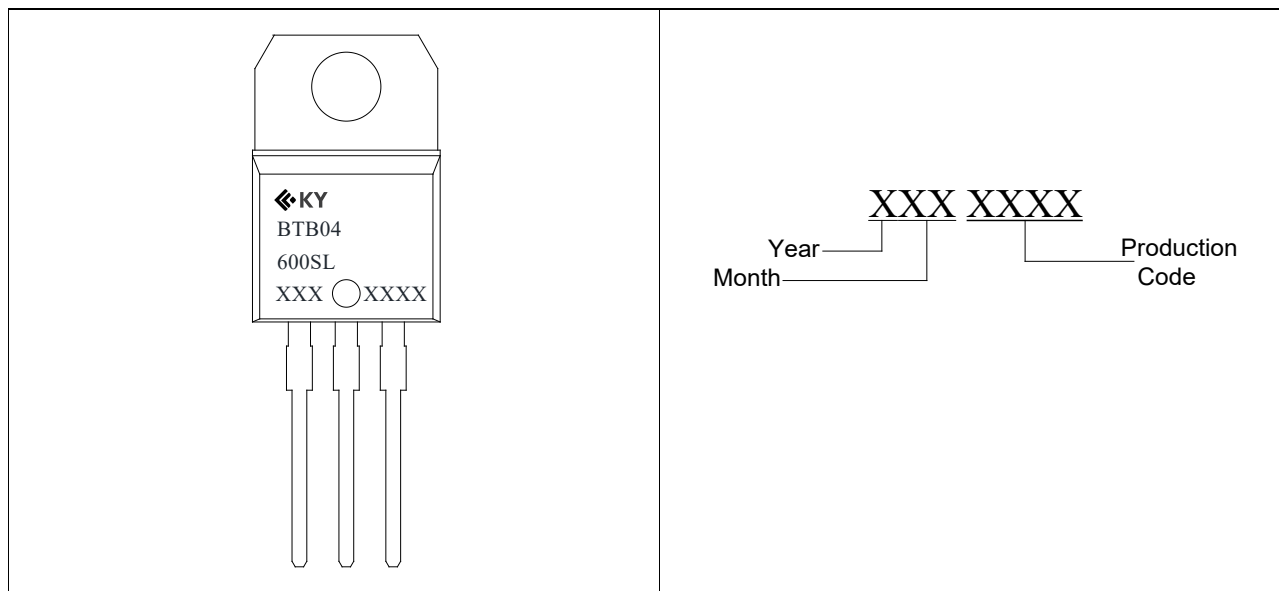
Rev.A.2.0

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

MARKING



BTB06-600SL 4A TRIAC

Rev.A.2.0

PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220B	TUBE	50	1,000	5,000

Document Revision History

Date	Revision	Changes
Jun.11, 2025	A.2.0	Last updated

Information furnished is believed to be accurate and reliable. However, ShenZhen AnKingYuan Electronic 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. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied.



is a registered trademark of ShenZhen AnKingYuan Electronic.
©2013 ShenZhen AnKingYuan Electronic - Printed in ShenZhen - All Rights Reserved.