

**4A 3Quadrants TRIACs**

**Product Summary**

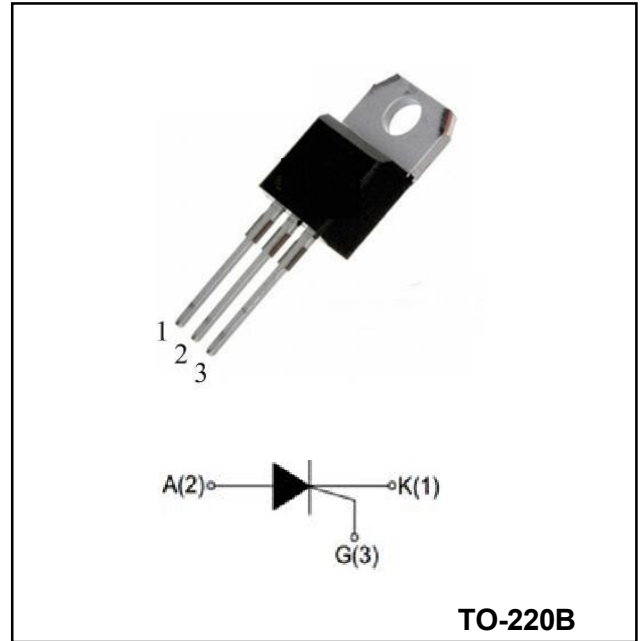
Symbol	Value	Unit
$I_{T(RMS)}$	4	A
$V_{DRM} V_{RRM}$	600/800	V
$V_{TM}$	1.55	V

**Features**

With high ability to withstand the shock loading of large current, Provide high dv/dt rate with strong resistance to electromagnetic interference.

**Application**

Power charger, T-tools, massager, solid state relay, AC Motor speed regulation and so on.



**Order Information**

Part Number	Package	Marking	packing	Delivery Quantity
BTB04	TO-220B	BTB04-600(T/S/C/B)W XXXX	BOX	1000PCS/BOX
BTB04	TO-220B	BTB04-800(T/S/C/B)W XXXX	BOX	1000PCS/BOX

**Absolute maximum ratings (Ta=25°C unless otherwise noted)**

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage	$V_{DRM}$	600/800	V
Repetitive peak reverse voltage	$V_{RRM}$	600/800	V
RMS on-state current	$I_{T(RMS)}$	4	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	$I_{TSM}$	40	A
$I^2t$ value for fusing (tp=10ms)	$I^2t$	8	A <sup>2</sup> s
Critical rate of rise of on-state current ( $I_G = 2 \times I_{GT}$ )	$di/dt$	I - II - III   50	A/ $\mu$ s
Peak gate current	$I_{GM}$	4	A
Average gate power dissipation	$P_G (AV)$	1	W
Junction Temperature	$T_J$	-40~+125	°C
Storage Temperature	$T_{STG}$	-40 ~+150	°C

**Electrical characteristics (TA=25°C, unless otherwise noted)**

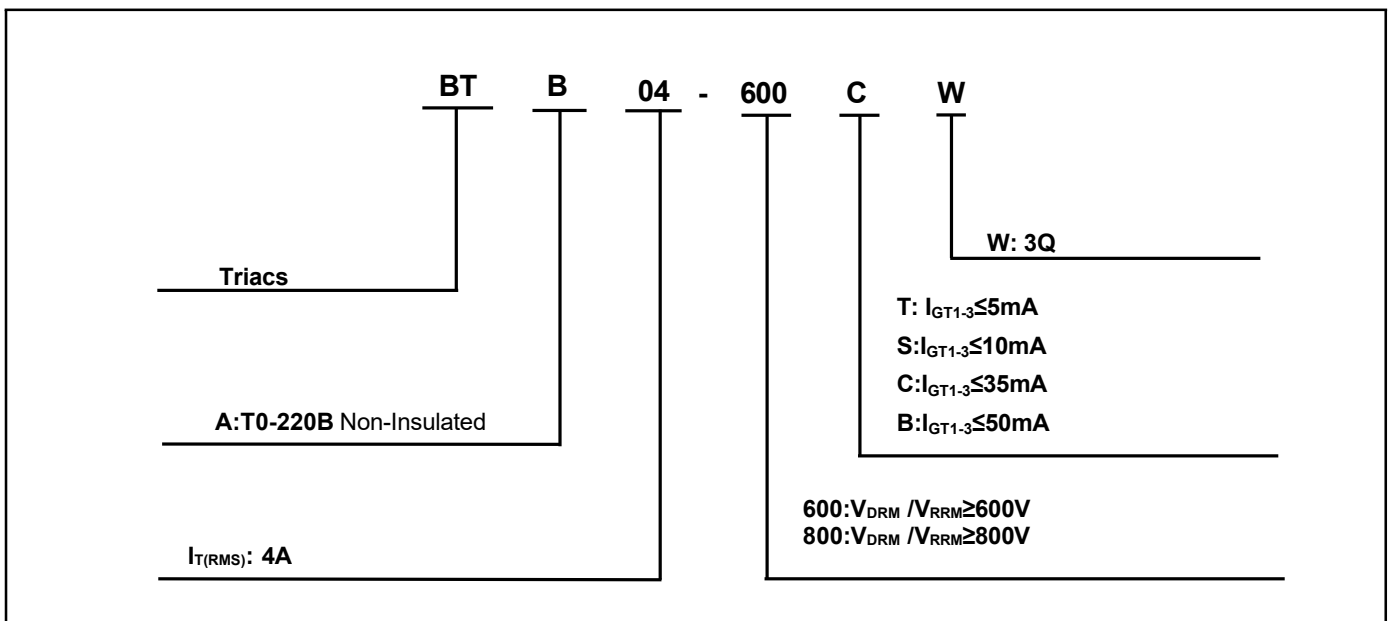
Parameter	Symbol	Test Condition	Value				Unit	
			TW	SW	CW	BW		
Gate trigger current	$I_{GT}$	$V_D=12V, R_L=30\Omega$ $T_j=25^\circ C$ , Fig.6	I - II - III	$\leq 5$	$\leq 10$	$\leq 35$	$\leq 50$	mA
Gate trigger voltage	$V_{GT}$		I - II - III	$\leq 1.3$				V
Non-triggering gate voltage	$V_{GD}$	$V_D=V_{DRM}$ $T_j=125^\circ C$	$\leq 0.2$				V	
Holding current	$I_H$	$I_T=100mA$ , Fig.6	$\leq 6$	$\leq 10$	$\leq 35$	$\leq 60$	mA	
Latching current	$I_L$	$I_G=1.2I_{GT}$ , Fig.6	I - III	$\leq 10$	$\leq 15$	$\leq 50$	$\leq 70$	mA
			II	$\leq 15$	$\leq 25$	$\leq 60$	$\leq 80$	
Critical-rate of rise of commutation voltage	$dV_D/dt$	$V_D=2/3V_{DRM}$ , $T_j=125^\circ C$	$\leq 50$	$\leq 100$	$\leq 500$	$\leq 1000$	V/ $\mu s$	

**STATIC CHARACTERISTICS**

On-state Voltage	$V_{TM}$	$I_{TM}=6A, t_p=380\mu s$ , Fig.4	$\leq 1.55$				V	
Repetitive Peak Off-State Current	$I_{DRM}$	$V_D=V_{DRM}=V_{RRM}$	$T_j=25^\circ C$	$\leq 5$	$\leq 5$	$\leq 5$	$\leq 5$	$\mu A$
Repetitive Peak Reverse Current	$I_{RRM}$		$T_j=125^\circ C$	$\leq 0.5$	$\leq 0.5$	$\leq 0.5$	$\leq 0.5$	mA

**THERMAL RESISTANCES**

Thermal resistance	$R_{th(j-c)}$	Junction to case	TYP.	2.4	$^\circ C/W$
	$R_{th(j-a)}$	Junction to ambient	TYP.	60	$^\circ C/W$

**Ordering Information**


**Typical Characteristics**

FIG1 Maximum power dissipation versus RMS on-state current

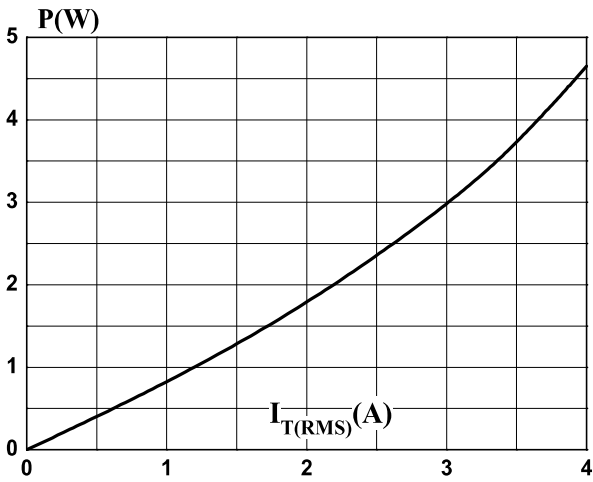


FIG2 RMS on-state current versus case temperature

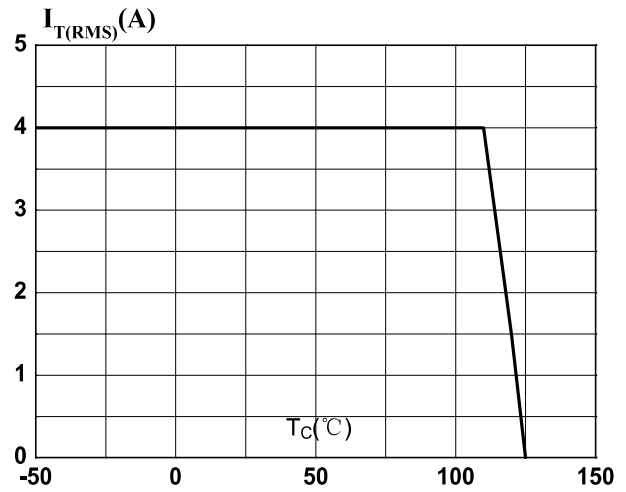


FIG3 Surge peak on-state current versus number of cycles

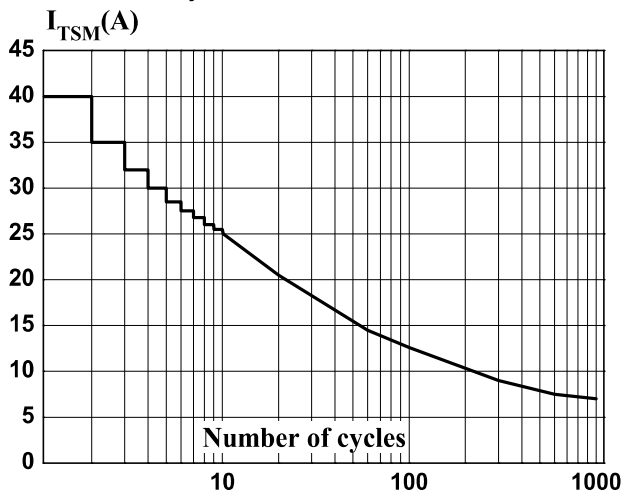


FIG4 On-state characteristics (maximum values)

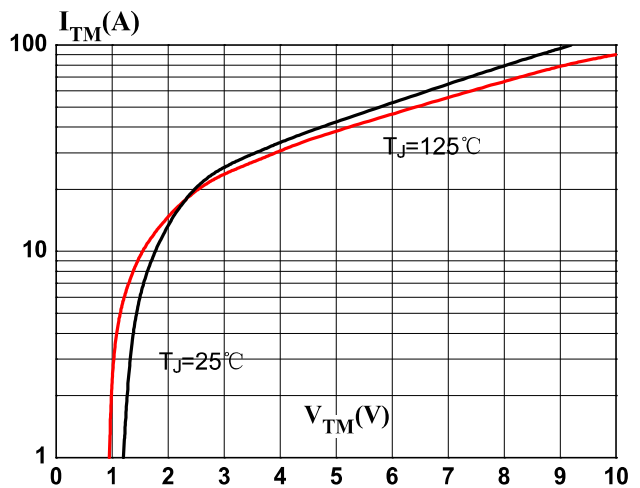


FIG5 Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 20\text{ms}$ , and corresponding value of  $I^2t$  ( $dI/dt < 100\text{A}/\mu\text{s}$ )

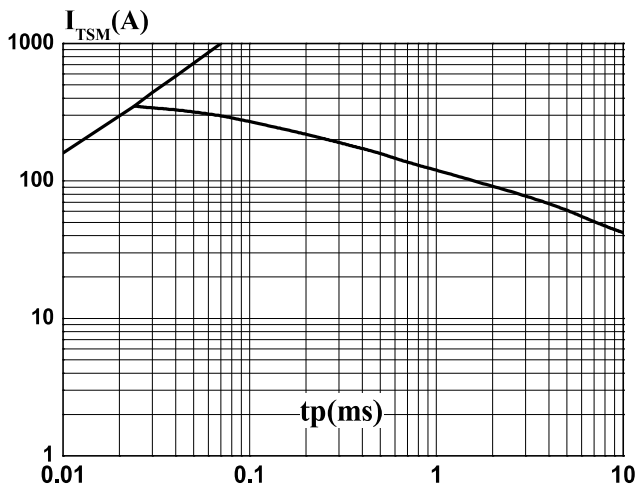
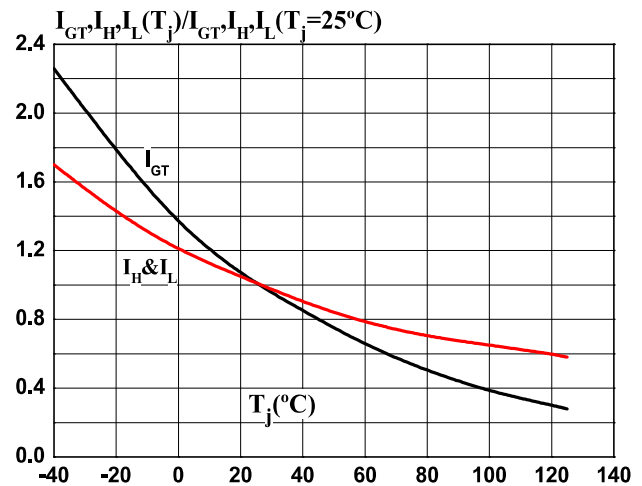
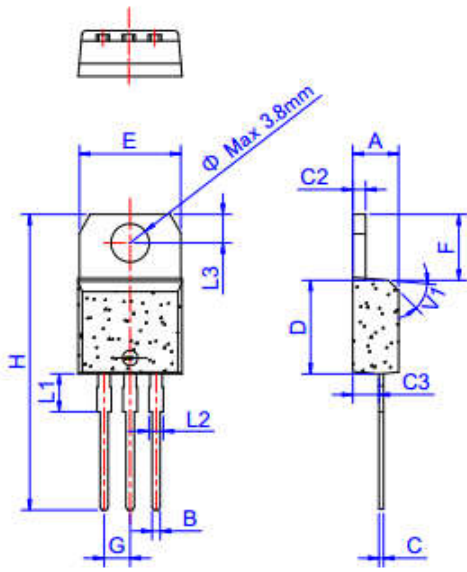


FIG6 Relative variations of gate trigger current, holding current and latching current versus junction temperature



Package Information

TO-220B



TO-220B

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°	

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