

**16A 3Quadrants TRIACs**

**Product Summary**

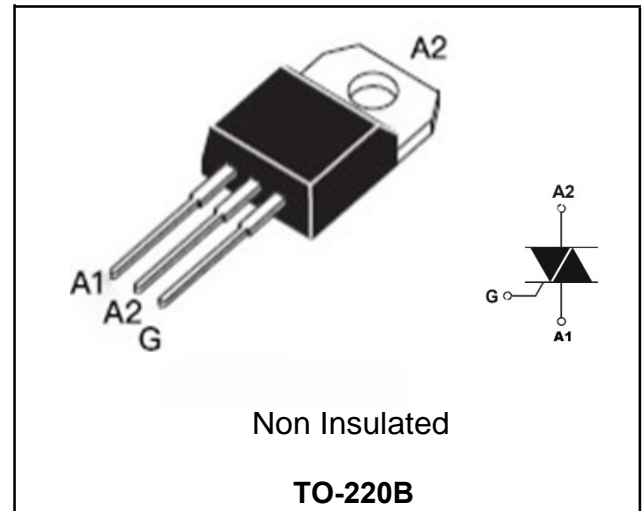
Symbol	Value	Unit
$I_{T(RMS)}$	16	A
$V_{DRM} V_{RRM}$	600/800	V
$V_{TM}$	1.55	V

**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.



**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	$I_{T(RMS)}$	16	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	$I_{TSM}$	160	A
$I^2t$ value for fusing (tp=10ms)	$I^2t$	140	A <sup>2</sup> s
Critical rate of rise of on-state current ( $I_G = 2 \times I_{GT}$ )	$di/dt$	I - II - III   100	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	
			SW	CW	BW		
Gate trigger current	I <sub>GT</sub>	V <sub>D</sub> =12V, R <sub>L</sub> =33Ω T <sub>j</sub> =25°C, Fig.6	I - II - III	≤10	≤35	≤50	mA
Gate trigger voltage	V <sub>GT</sub>		I - II - III	≤1.3			V
Non-triggering gate voltage	V <sub>GD</sub>	V <sub>D</sub> =V <sub>DRM</sub> T <sub>j</sub> =125°C		≤0.2			V
Holding current	I <sub>H</sub>	I <sub>T</sub> =500mA, Fig.6		≤15	≤30	≤60	mA
Latching current	I <sub>L</sub>	I <sub>G</sub> =1.2I <sub>GT</sub> , Fig.6	I - III	≤2.5	≤50	≤70	mA
			II	≤30	≤60	≤80	
Critical-rate of rise of commutation voltage	dV <sub>D</sub> /dt	V <sub>D</sub> =67%V <sub>DRM</sub> , T <sub>j</sub> =125°C		≤50	≤500	≤1000	V/μs

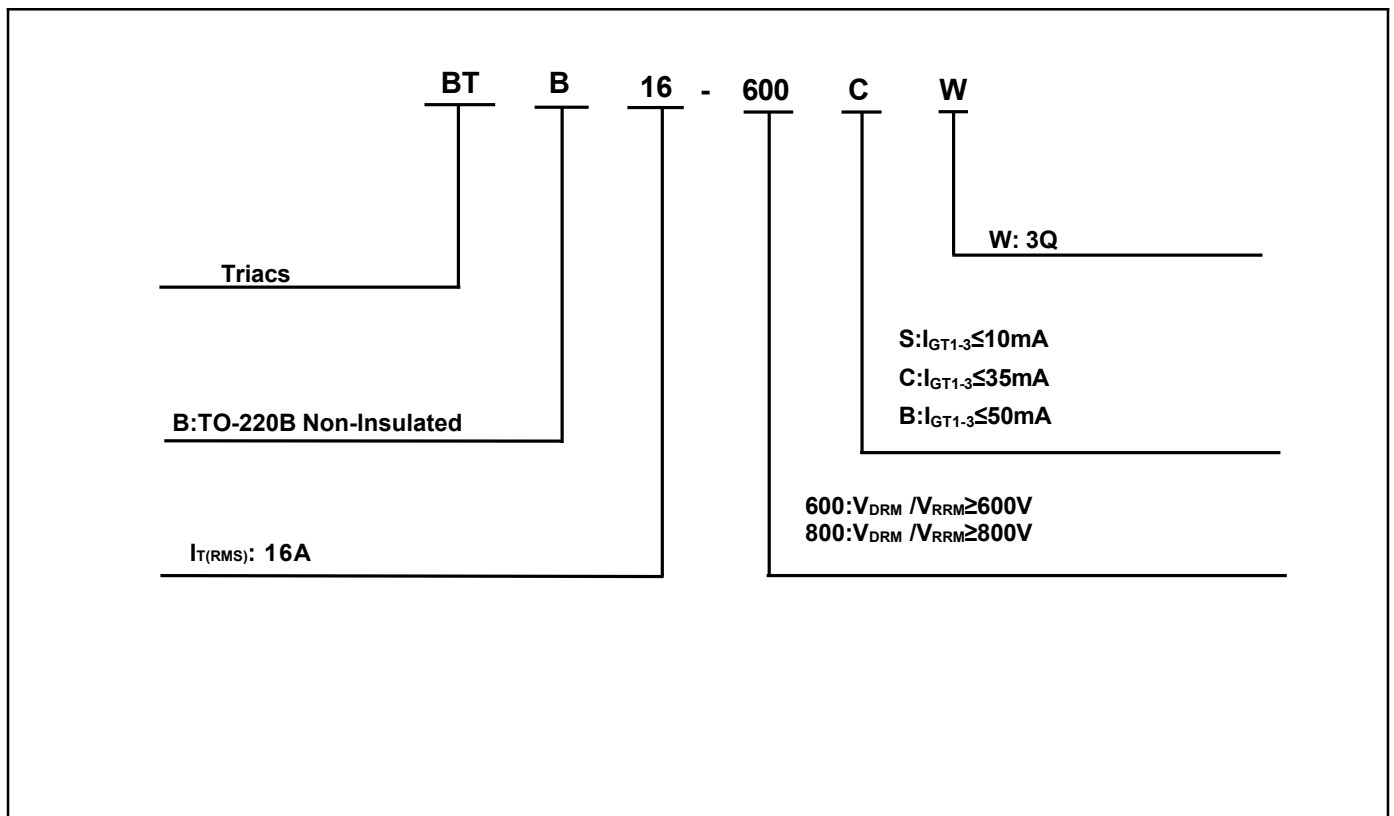
**STATIC CHARACTERISTICS**

On-state Voltage	V <sub>TM</sub>	I <sub>TM</sub> =23A, t <sub>p</sub> =380μs, Fig.4		≤1.55			V
Repetitive Peak Off-State Current	I <sub>DRM</sub>	V <sub>D</sub> =V <sub>DRM</sub> = V <sub>RRM</sub>	T <sub>j</sub> =25°C	≤5	≤5	≤5	μA
Repetitive Peak Reverse Current	I <sub>RRM</sub>		T <sub>j</sub> =125°C	≤1	≤1	≤1	mA

**THERMAL RESISTANCES**

Thermal resistance	R <sub>th(j-c)</sub>	Junction to case	TYP.	1.2	°C/W
	R <sub>th(j-a)</sub>	Junction to ambient	TYP.	60	°C/W

**Ordering Information**



**Typical Characteristics**

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

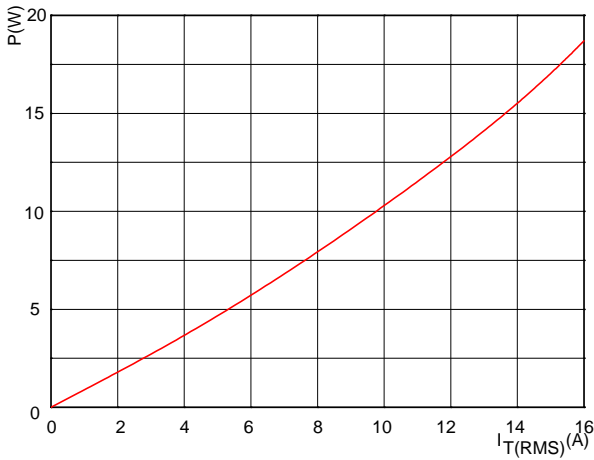


FIG.2: RMS on-state current versus case temperature (full cycle)

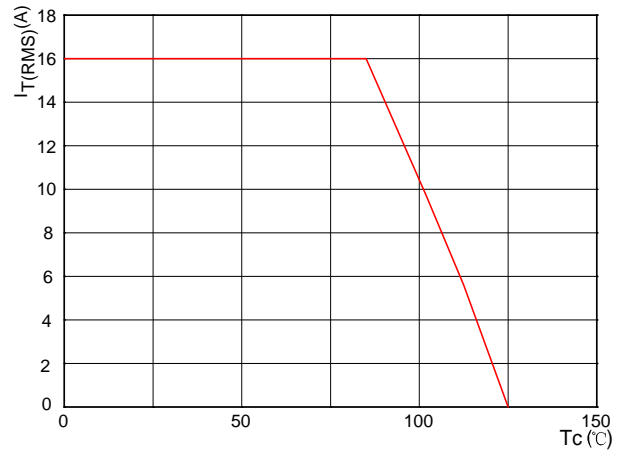


FIG.3: Surge peak on-state current versus number of cycles

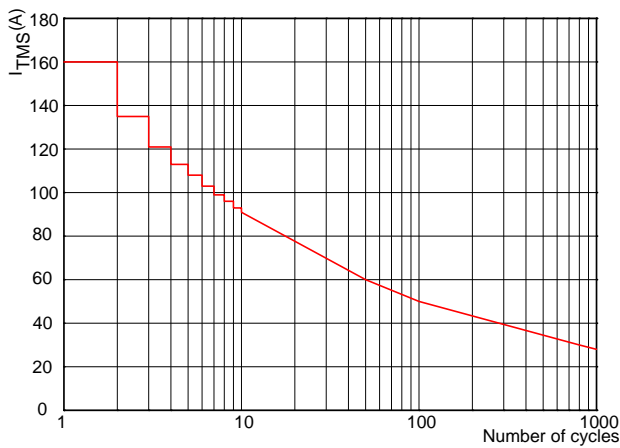


FIG.4: On-state characteristics (maximum values)

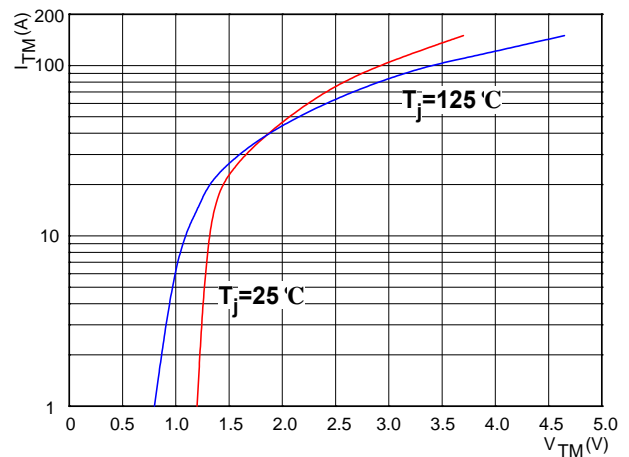


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$

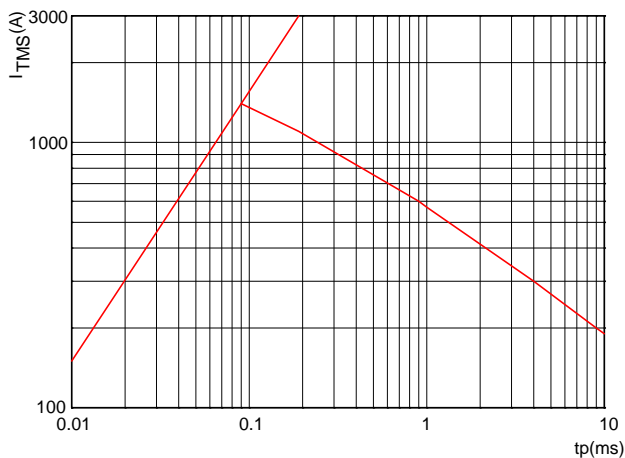
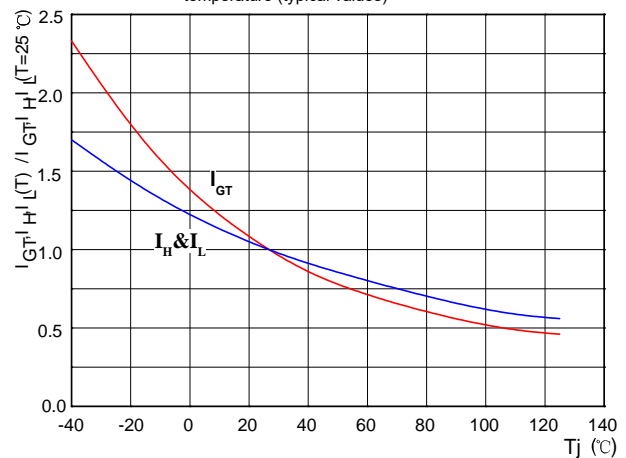
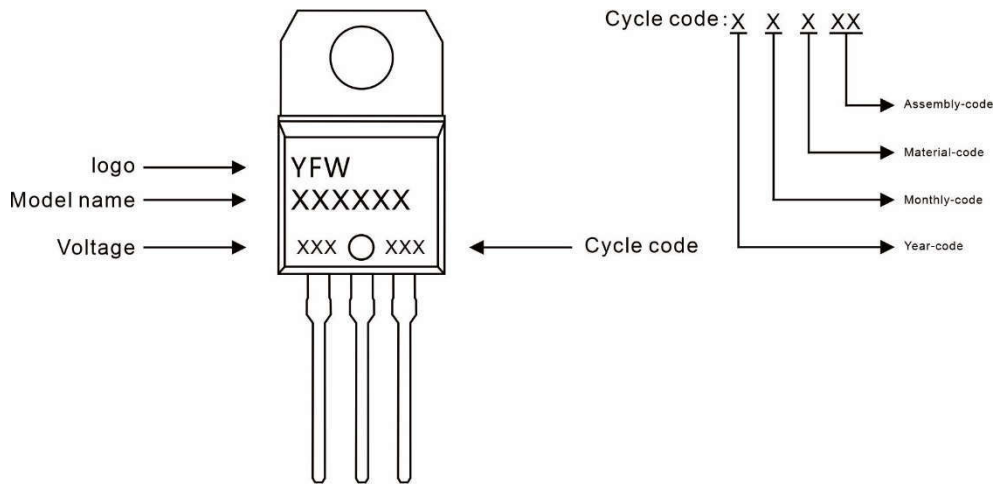


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



**Marking Diagram**



**Ordering information**

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
BTB16	TO-220B	0.07oz(1.96g)	50pcs/tube	1000PCS/Box 5000PCS/Carton

**Package Dimensions**  
TO-220B(Non Insulated)

Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	9.80	10.40	0.386	0.409
B	2.65	3.10	0.104	0.122
C	14.80	16.10	0.583	0.634
D	0.70	0.92	0.028	0.036
D1	1.18	1.42	0.047	0.056
E	2.40	2.70	0.095	0.106
L	2.80	4.20	0.11	0.17
L1	13.05	13.60	0.514	0.535
H	5.85	6.82	0.23	0.27
K	2.35	2.75	0.093	0.108
T	4.38	4.61	0.172	0.181
T1	1.15	1.36	0.045	0.054
T2	0.35	0.65	0.014	0.026
ΦR	3.75	3.95	0.148	0.156

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