BTB16 Series

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

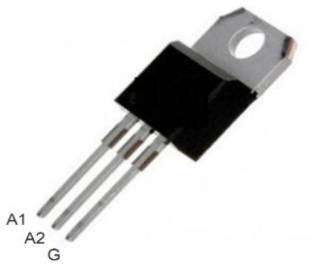
Feature

With high ability to withstand the shock loading of large current,With high commutation performances, 3 quadrants products especially recommended for use on inductive load.

Application

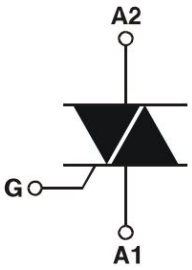
Washing machine, vacuums, massager, solid state relay, AC Motor speed regulation and so on.

Package

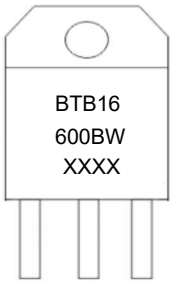


TO-220B

Circuit diagram



Marking



Absolute maximum ratings (Ta=25℃ 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^2s
Critical rate of rise of on-state current (I_G =2×I_{GT})	dI_T/dt	Ⅰ-Ⅱ-Ⅲ	100	A/μs
Peak gate current	I_{GM}	4		A
Average gate power dissipation	$P_{G(AV)}$	1		W
Junction Temperature	T_J	-40 ~ +125		℃
Storage Temperature	T_{STG}	-40 ~ +150		℃

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

Parameter	Symbol	Test Condition		Value		Unit
				CW	BW	
Gate trigger current	I_{GT}	V_D =12V R_L = 33Ω	Ⅰ-Ⅱ-Ⅲ	≤35	≤50	mA
Gate trigger voltage	V_{GT}	T_j =25℃	Ⅰ-Ⅱ-Ⅲ	≤1.3		V
Gate non-trigger voltage	V_{GD}	V_D =V_{DRM} T_j =125℃		≥0.2		V
latching current	I_L	I_G =1.2I_{GT}	Ⅰ-Ⅲ	≤50	≤70	mA
			Ⅱ	≤60	≤80	
Holding current	I_H	I_T =500mA		≤30	≤50	mA
Critical-rate of rise of commutation voltage	dV_D/dt	V_D=2/3V_{DRM} Gate Open T_j =125℃		≥500	≥1000	V/μs
STATIC CHARACTERISTICS						
Forward "on" voltage	V_{TM}	I_{TM} =23A tp=380μs		≤1.55		V
Repetitive Peak Off-State Current	I_{DRM}	V_D =V_{DRM} V_R =V_{RRM}	T_j=25℃	≤5		μA
Repetitive Peak Reverse Current	I_{RRM}		T_j=125℃	≤1		mA
THERMAL RESISTANCES						
Thermal resistance	Rth(j-c)	Junction to case(AC)		1.2		℃/W
	Rth(j-a)	Junction to ambient		60		℃/W

Typical Characteristics

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

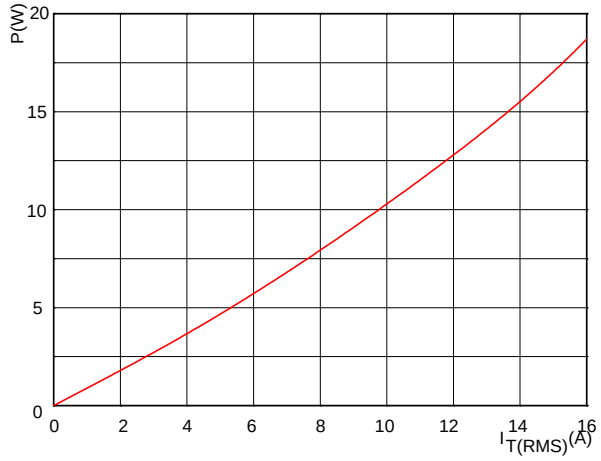


FIG.2: RMS on-state current versus case temperature (full cycle)

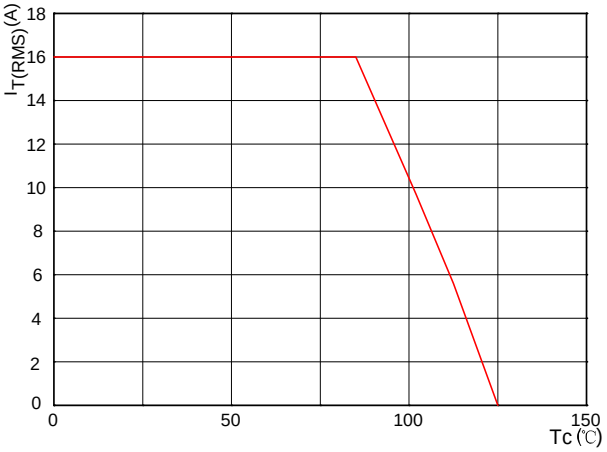


FIG.3: Surge peak on-state current versus number of cycles

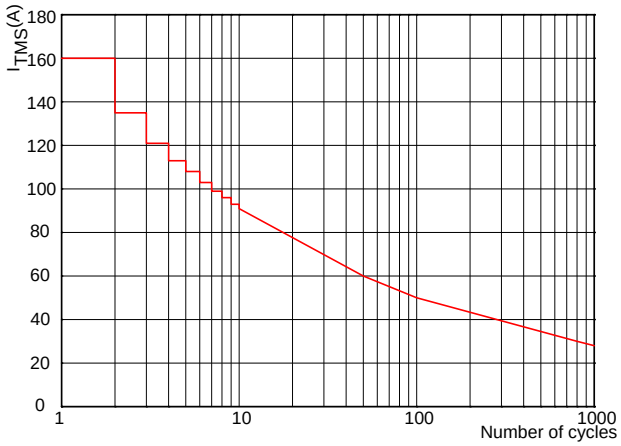


FIG.4: On-state characteristics (maximum values)

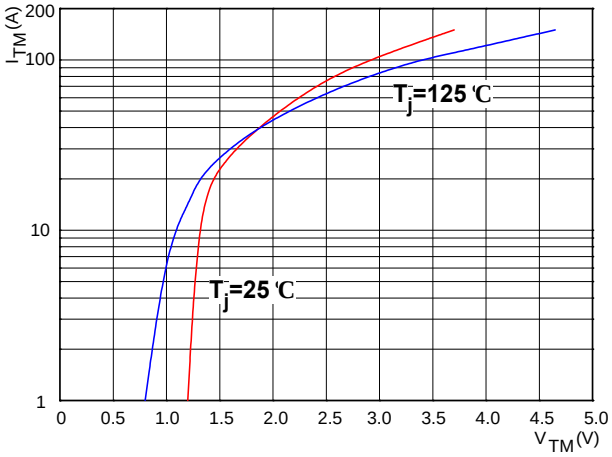


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms

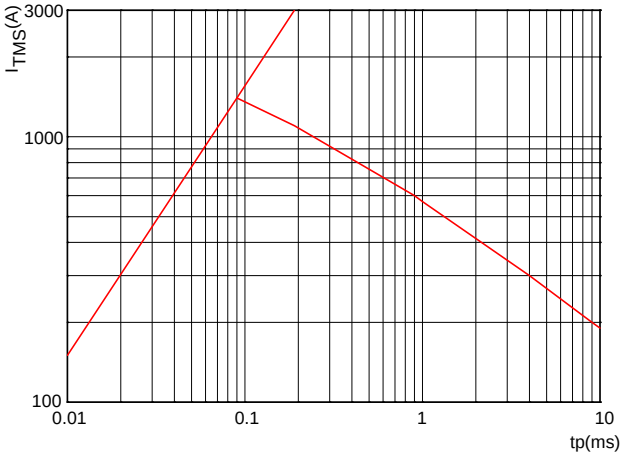
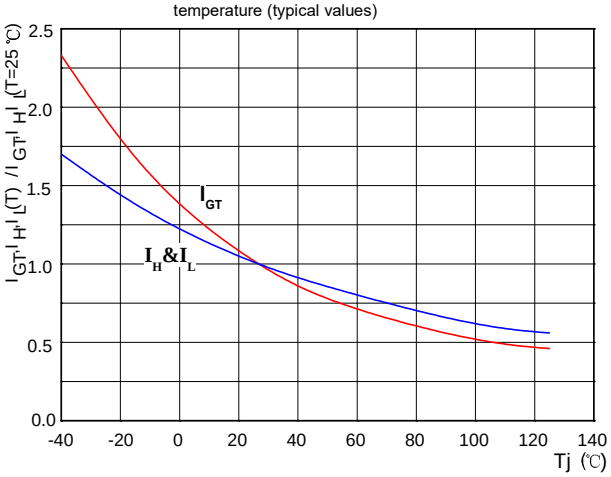
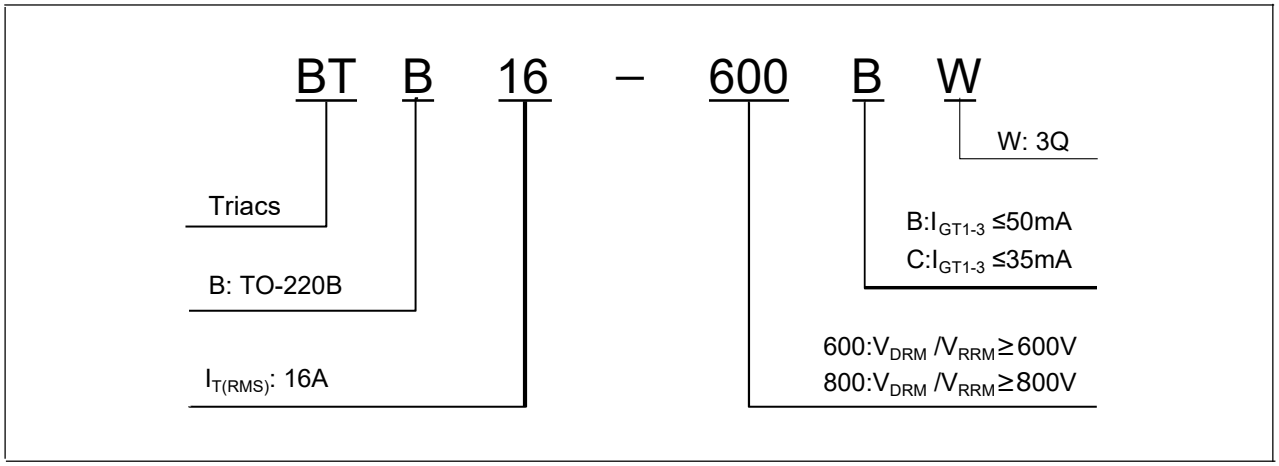


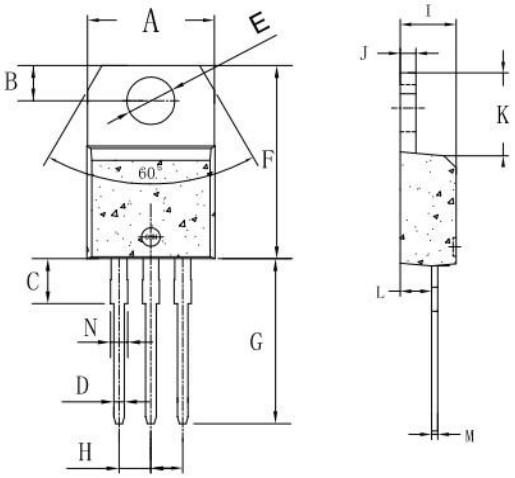
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Ordering Information



TO-220B Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	9.8	10.4	0.385	0.409
B	2.65	3.1	0.104	0.122
C	2.8	4.2	0.110	0.165
D	0.7	0.92	0.027	0.036
E	3.75	3.95	0.147	0.155
F	14.8	16.1	0.582	0.633
G	13.05	13.6	0.513	0.535
H	2.4	2.7	0.094	0.106
I	4.38	4.61	0.172	0.181
J	1.15	1.36	0.045	0.053
K	5.85	6.82	0.230	0.268
L	2.35	2.75	0.092	0.108
M	0.35	0.65	0.013	0.025
N	1.18	1.42	0.046	0.055