BTB16X 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

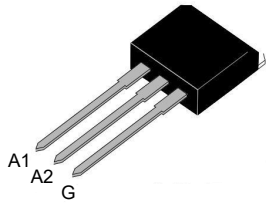
Feature

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

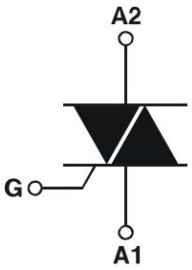
Washing machine, vacuums, massager, solid state relay, AC Motor speed regulation and so on.

Package



TO-262

Circuit diagram



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	128		A^2s
Critical rate of rise of on-state current (I_G =2×I_{GT})	dI_T/dt	Ⅰ-Ⅱ-Ⅲ	50	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	⩽80	mA
			Ⅱ	⩽60	⩽100	
Holding current	I_H	I_T =100mA		⩽40	⩽60	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} =22.5 A 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℃	⩽2		mA
THERMAL RESISTANCES						
Thermal resistance	Rth(j-c)	Junction to case(AC)		0.85		℃/W
	Rth(j-a)	Junction to ambient		60		℃/W

Typical Characteristics

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

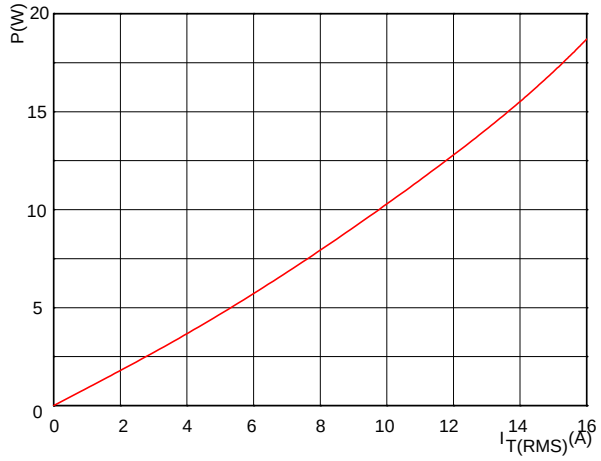


FIG.2: RMS on-state current versus case temperature (full cycle)

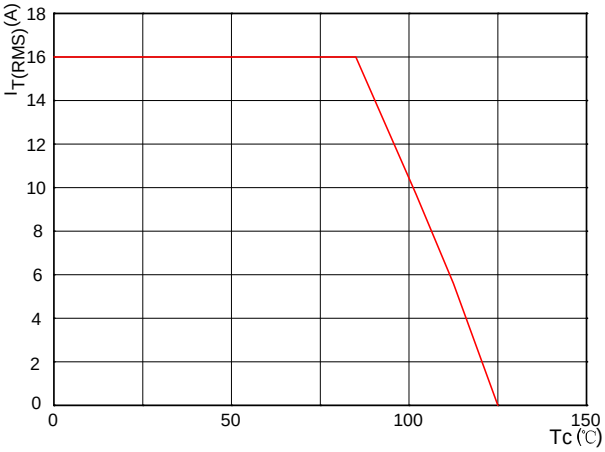


FIG.3: Surge peak on-state current versus number of cycles

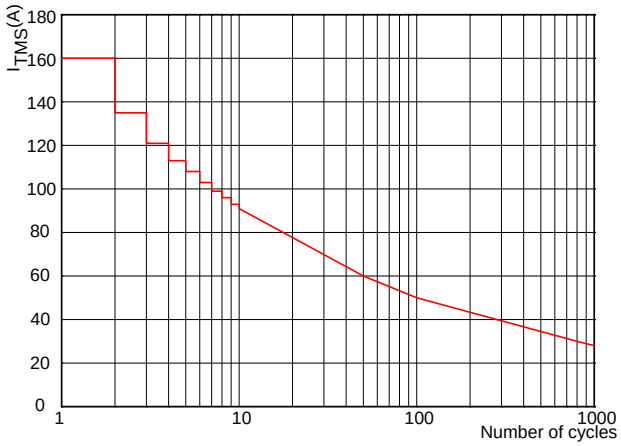


FIG.4: On-state characteristics (maximum values)

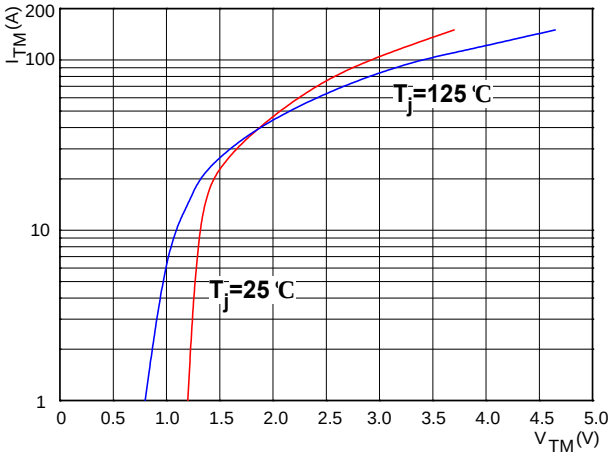


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width tp < 10ms

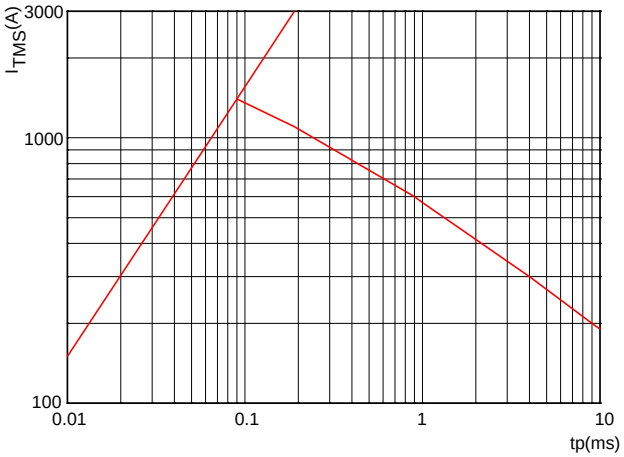
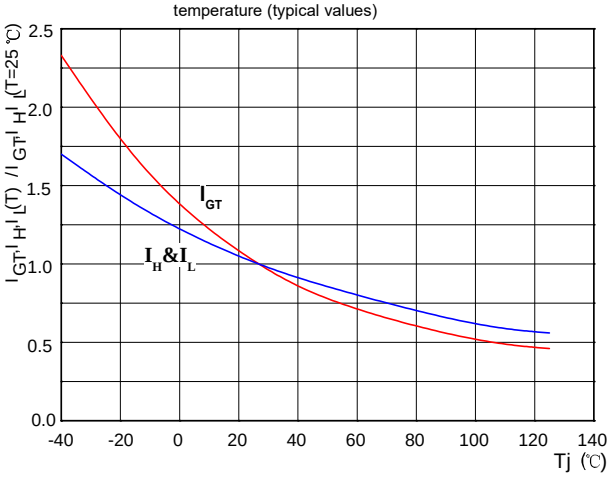
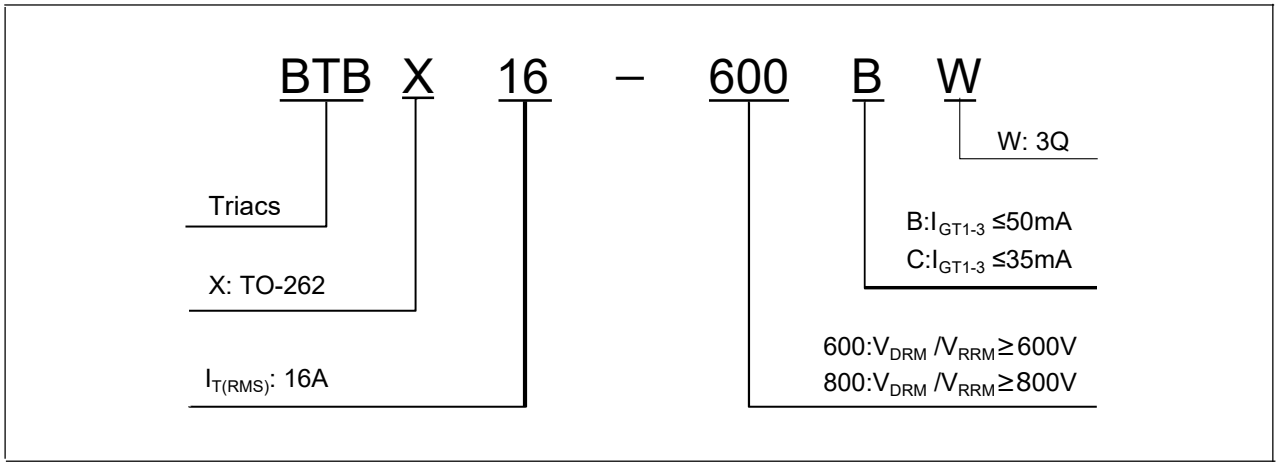


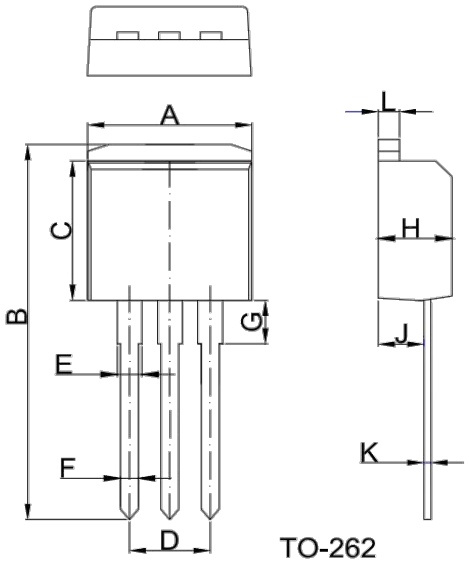
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Ordering Information



TO-262 Package Information



TO-262

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.95		10.20	0.392		0.402
B	23.25		23.45	0.915		0.923
C	8.90		9.10	0.35		0.358
D	2.50		2.60	0.098		0.102
E	1.20		1.35	0.047		0.053
F	0.80		0.85	0.031		0.033
G	3.30		3.60	0.130		0.142
H	4.45		4.55	0.175		0.179
J	2.50		2.70	0.098		0.106
K	0.38		0.42	0.015		0.017
L	1.25		1.29	0.049		0.051