

Product Summary

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

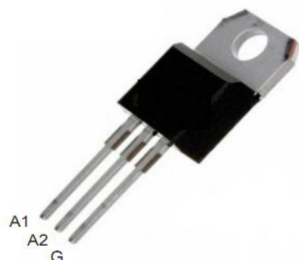
Feature

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

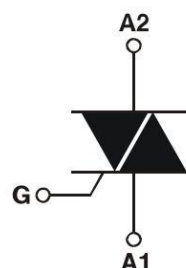
Washing machine, vacuums, massager, solid state relay, AC Motor speed regulation and so on.

Package

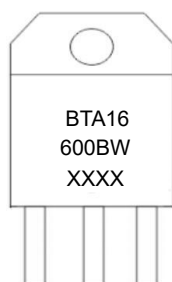


TO-220A Insulated

Circuit diagram



Marking



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 ² s
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	di_T/dt	I - II - III 50	A/ μ 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
				CW	BW	
Gate trigger current	I _{GT}	V _D =12V R _L = 33Ω T _j =25℃	I - II -III	≤35	≤50	mA
Gate trigger voltage	V _{GT}		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}	$I_{TM} = 23A$ $tp = 380\mu s$	≤ 1.55	V
Repetitive Peak Off-State Current	I_{DRM}	$V_D = V_{DRM}$ $V_R = V_{RRM}$	$T_J = 25^\circ C$ ≤ 5	μA
Repetitive Peak Reverse Current	I_{RRM}		$T_J = 125^\circ C$ ≤ 1	mA

THERMAL RESISTANCES

Thermal resistance	Rth(j-c)	Junction to case(AC)	2.1	°C/W
	Rth(j-a)	Junction to ambient	60	°C/W

Typical Characteristics

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

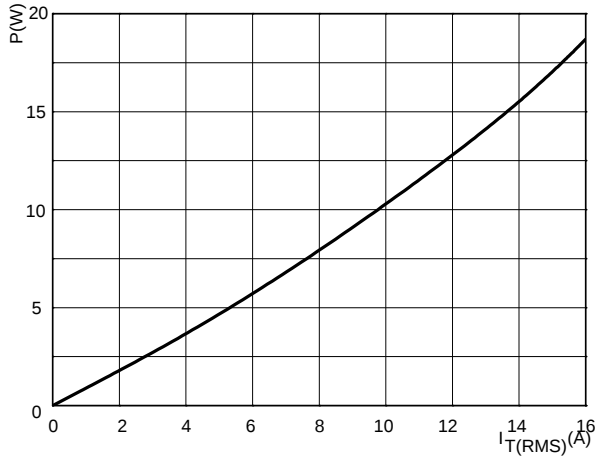


FIG.2: RMS on-state current versus case temperature (full cycle)

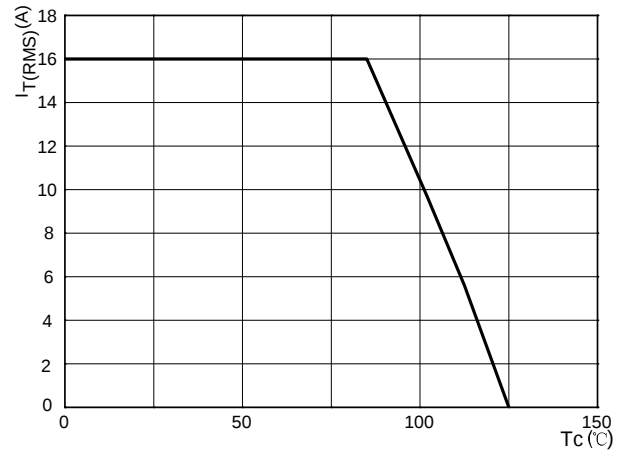


FIG.3: Surge peak on-state current versus number of cycles

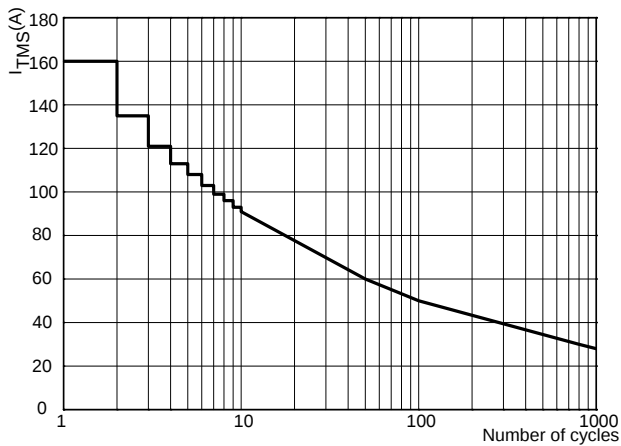


FIG.4: On-state characteristics (maximum values)

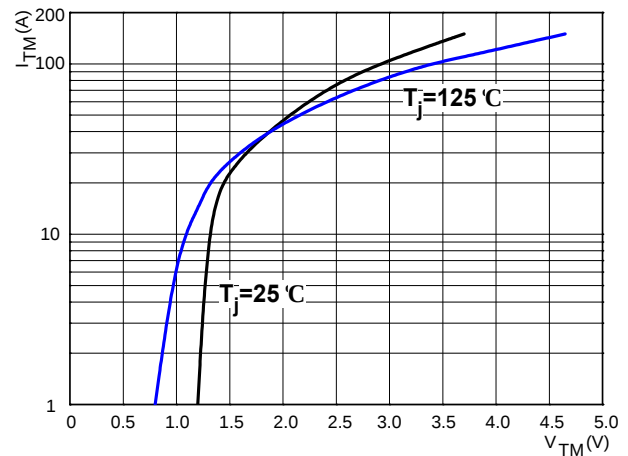


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$

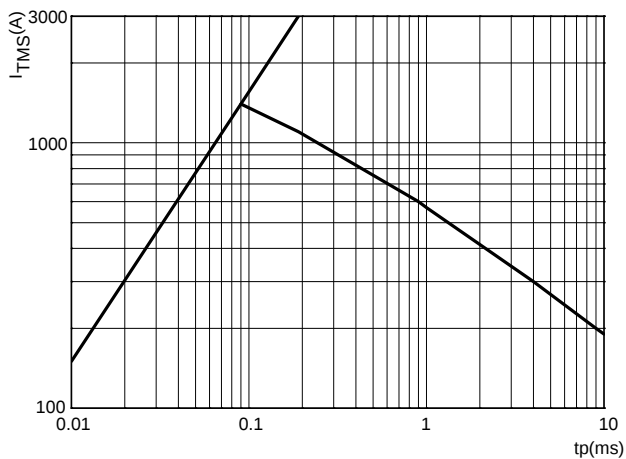
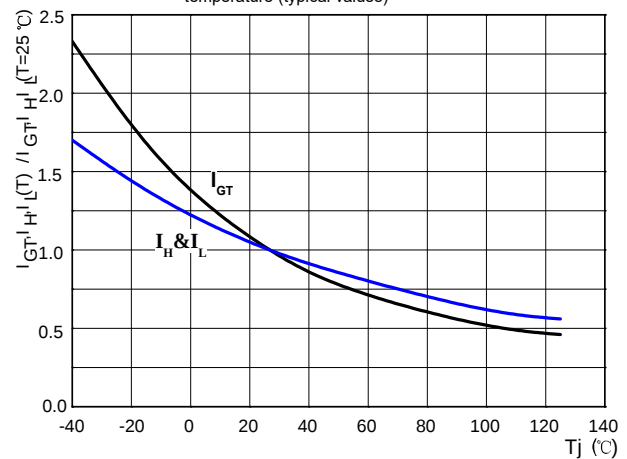
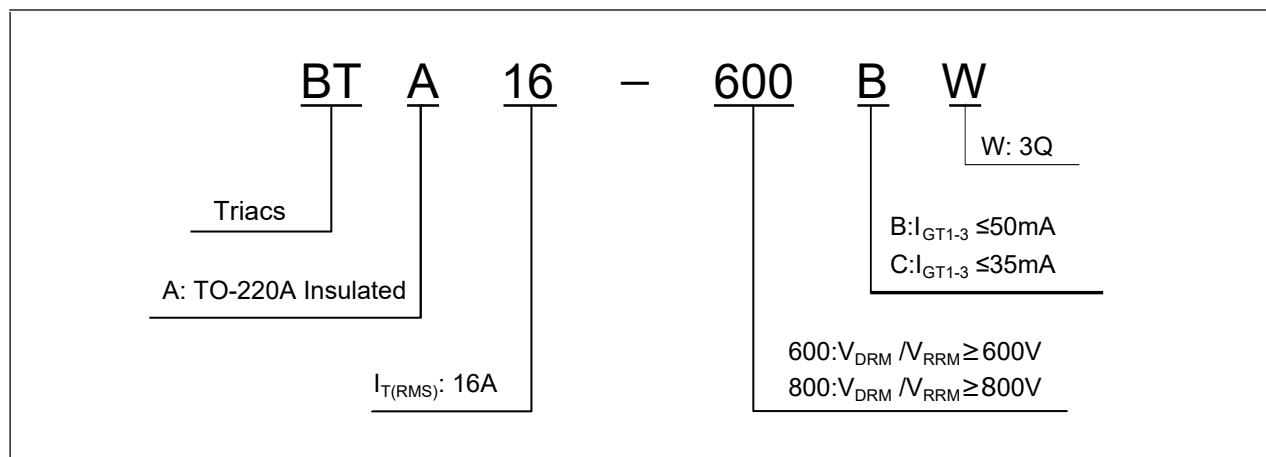


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Ordering Information



TO-220A Insulated Package Information

