

BTA12 Series

12A 3Quadrants TRIACs

Product Summary

Symbol	Value	Unit
$I_{T(RMS)}$	12	A
$V_{DRM} V_{RRM}$	600 / 800	V
V_{TM}	1.55	V

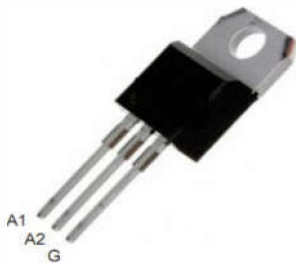
Feature

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

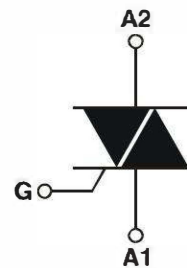
Washing machine, vacuums, massager, solid state relay, AC Motor speed regulation and so on.

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	$I_{T(RMS)}$	12	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	120	A
I^2t value for fusing (tp=10ms)	I^2t	78	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
				SW	CW	
Gate trigger current	I _{GT}	V _D =12V R _L = 33Ω	I - II -III	≤10	≤35	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	≤25	≤50	mA
			II	≤30	≤60	
Holding current	I _H	I _T =100mA		≤15	≤35	mA
Critical-rate of rise of commutation voltage	dV _D /dt	V _D =2/3V _{DRM} Gate Open T _j =125℃		≥40	≥500	V/μs
STATIC CHARACTERISTICS						
Forward "on" voltage	V _{TM}	I _{TM} =17A 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)		2.3		℃/W
	Rth(j-a)	Junction to ambient		60		℃/W

Typical Characteristics

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

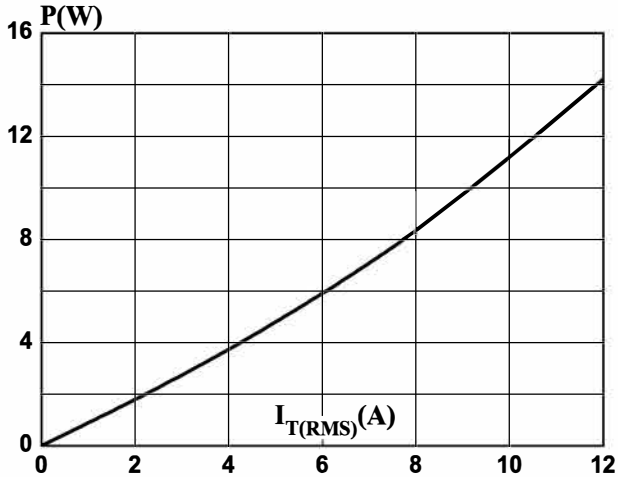


FIG.2: RMS on-state current versus case temperature (full cycle)

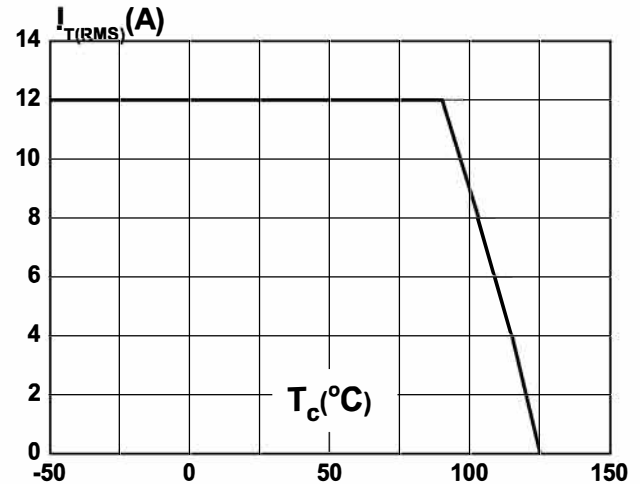


FIG.3: Surge peak on-state current versus number of cycles

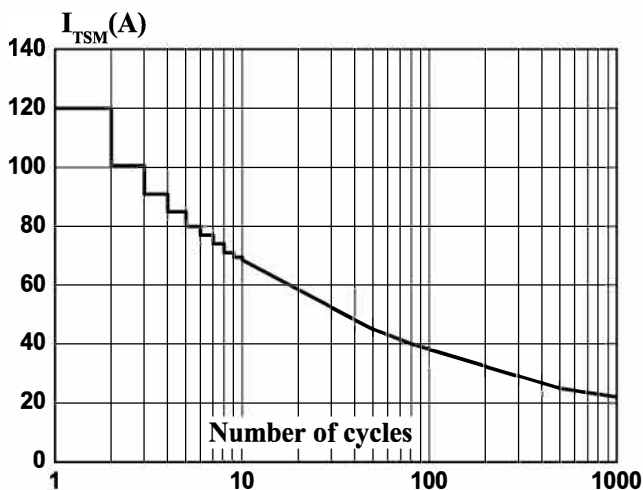


FIG.4: On-state characteristics (maximum values)

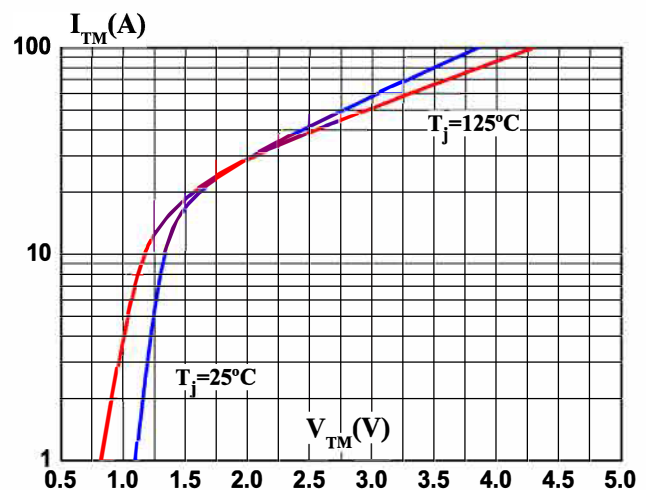


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$

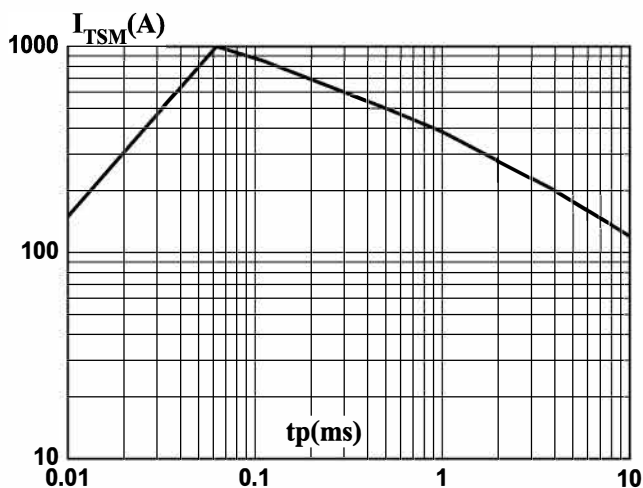
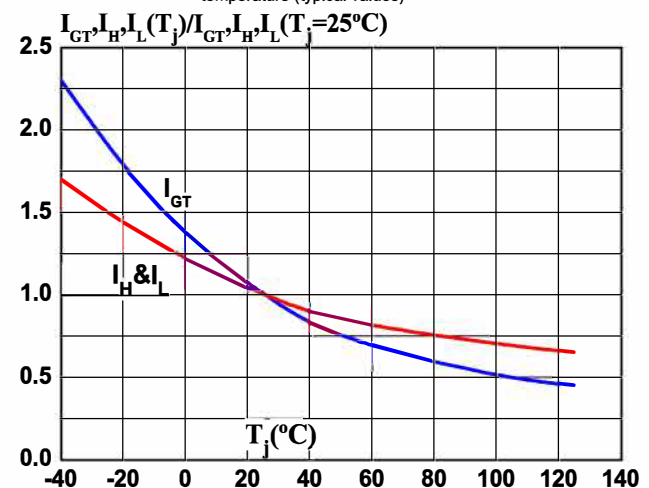


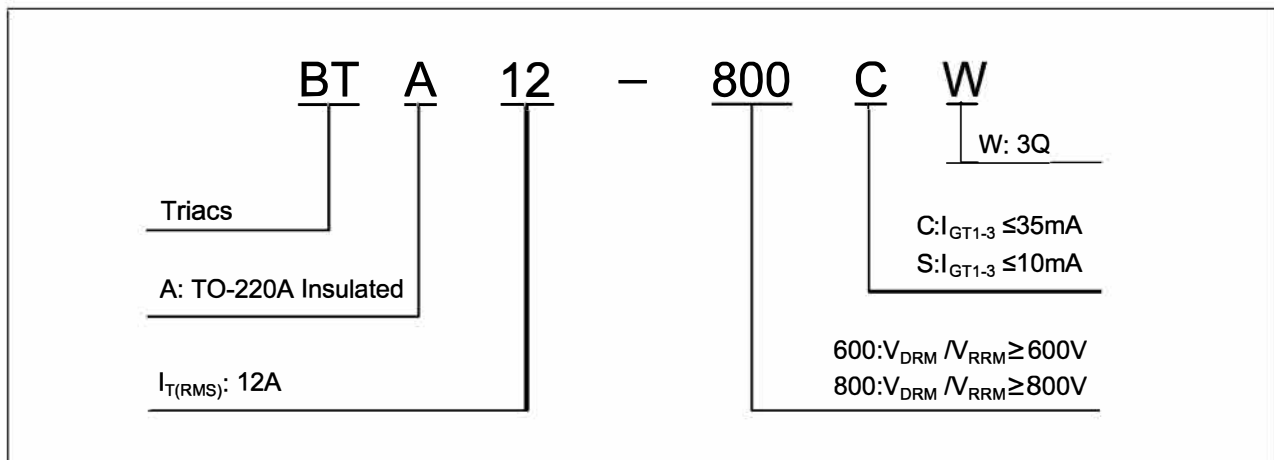
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



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Ordering Information



TO-220A Insulated Package Information

