

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, 3quadrants products especially recommended for use on inductive load.

Application

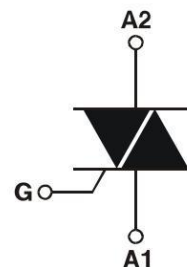
Washing machine, vacuums, massager, solid state relay, AC Motor speed regulation and so on.

Package

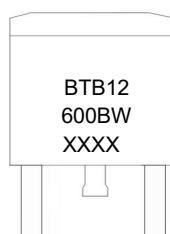


TO-263

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
				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	≤80	≤100	
Holding current	I _H	I _T =500mA		≤25	≤50	mA
Critical-rate of rise of commutation voltage	dV _D /dt	V _D =2/3V _{DRM} Gate Open T _j =125℃		≥200	≥400	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}	T _j =25℃	≤10		μA
Repetitive Peak Reverse Current	I _{RRM}	V _R =V _{RRM}	T _j =125℃	≤1		mA
THERMAL RESISTANCES						
Thermal resistance	Rth(j-c)	Junction to case(AC)		1.4		℃/W
	Rth(j-a)	Junction to ambient		45		℃/W

Typical Characteristics

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

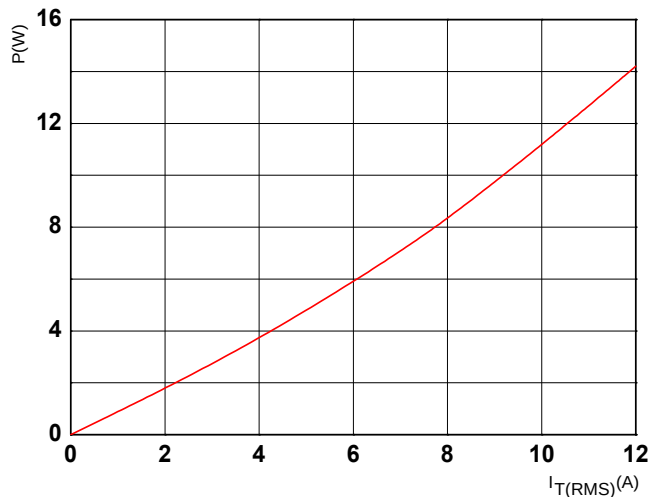


FIG.2: RMS on-state current versus case temperature (full cycle)

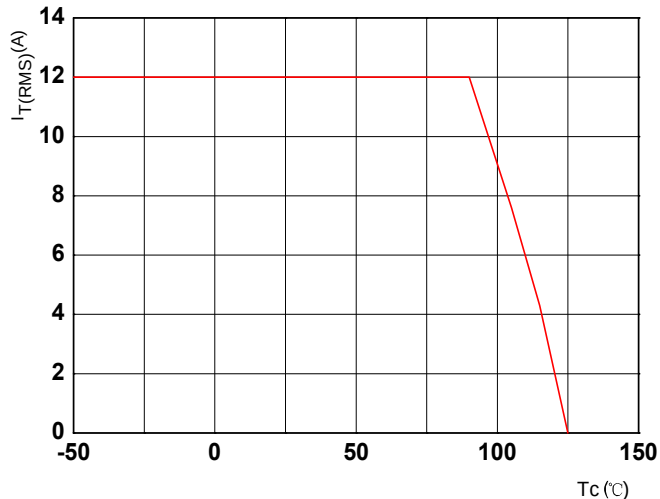


FIG.3: Surge peak on-state current versus number of cycles

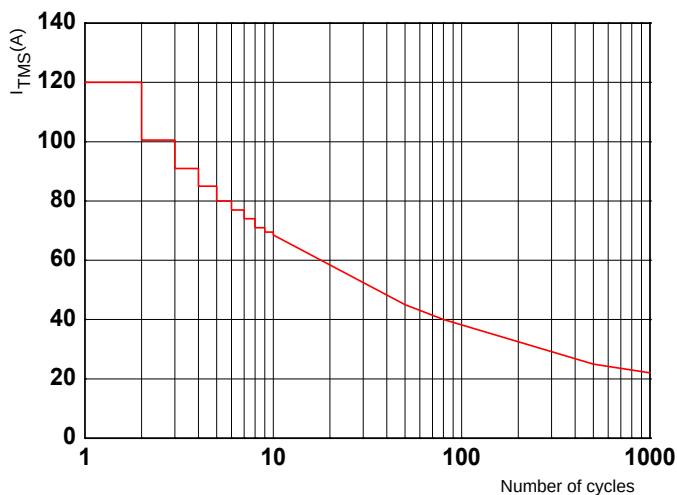


FIG.4: On-state characteristics (maximum values)

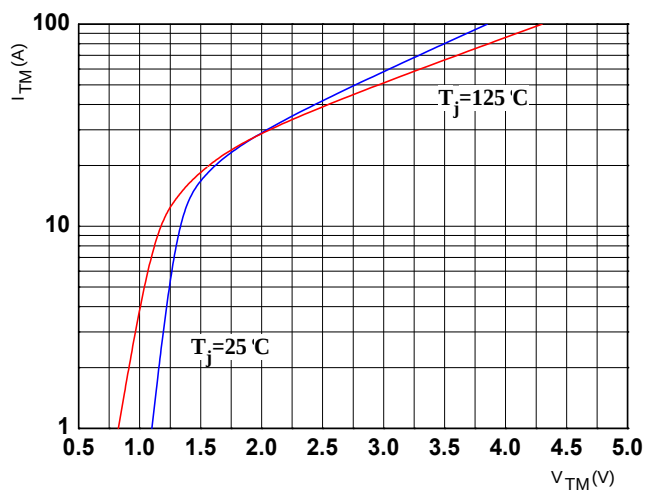


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$

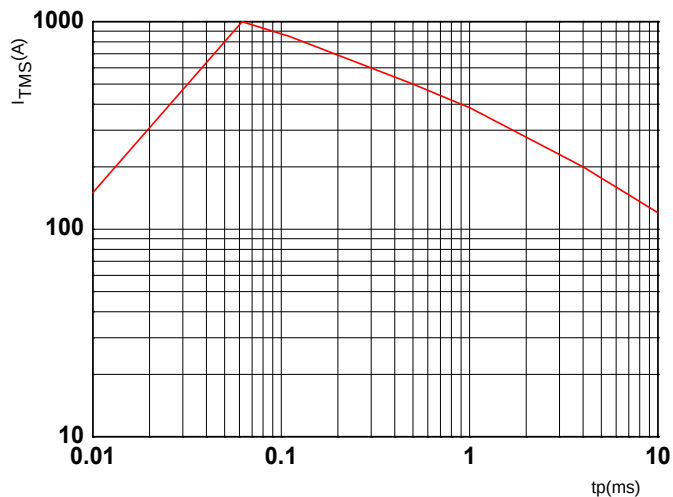
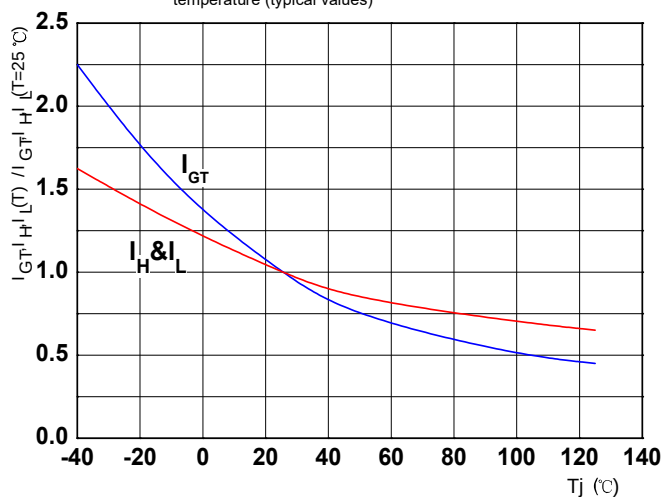
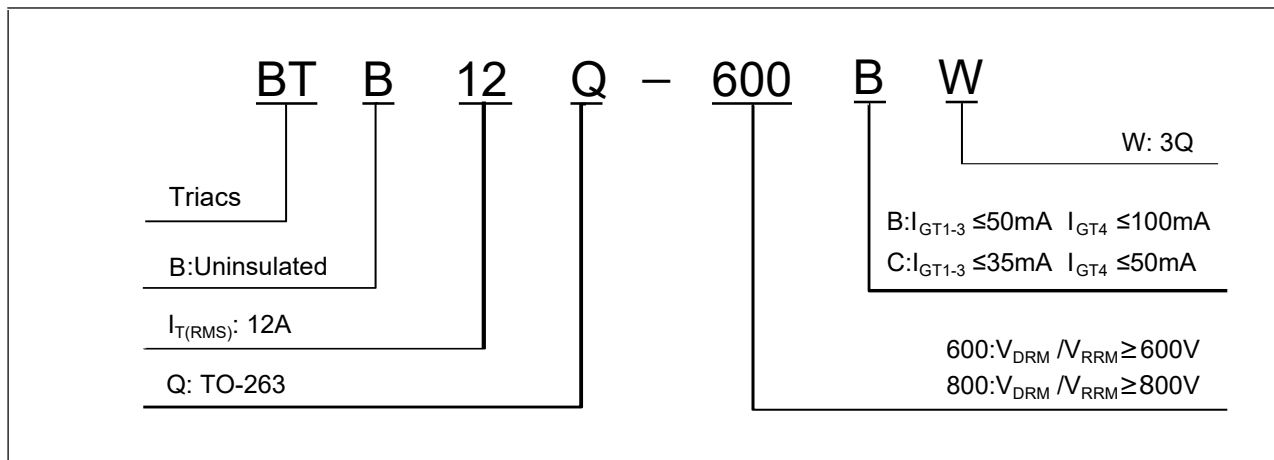


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Ordering Information



TO-263 Package Information

