

Product Summary

Symbol	Value	Unit
$I_{T(RMS)}$	25	A
$V_{DRM} V_{RRM}$	600 / 800	V
V_{TM}	1.55	V

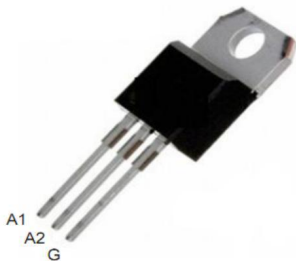
Feature

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

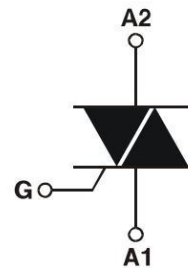
Washing machine, vacuums, massager, solid state relay, AC Motor speed regulation and so on.

Package

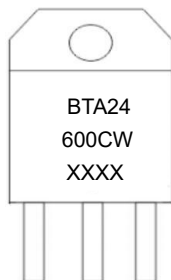


TO-220A Insulated

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 _{RPM}	600 / 800	V
RMS on-state current	I _{T(RMS)}	25	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I _{TSM}	260	A
I ² t value for fusing (tp=10ms)	I ² t	340	A ² s
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	°C
Storage Temperature	T _{STG}	-40 ~ +150	°C

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	≤ 35	≤ 50	mA	
Gate trigger voltage	V _{GT}	T _J = 25 °C	≤ 1.3			
Gate non-trigger voltage	V _{GD}	V _D = V _{DRM} T _J = 125 °C	≥ 0.2		V	
latching current	I _L	I _G = 1.2I _{GT}	I - III	≤ 60	≤ 80	mA
			II	≤ 80	≤ 90	
Holding current	I _H	I _T = 500mA	≤ 50	≤ 75	mA	
Critical-rate of rise of commutation voltage	dV _D /dt	V _D = 2/3V _{DRM} Gate Open T _J = 125 °C	≥ 500	≥ 1000	V/μs	

STATIC CHARACTERISTICS

Forward "on" voltage	V _{TM}	I _{TM} = 35A tp = 380μs	≤ 1.55		V
Repetitive Peak Off-State Current	I _{DRM}	V _D = V _{DRM} V _R = V _{RPM}	T _J = 25 °C	≤ 5	
Repetitive Peak Reverse Current	I _{RPM}		T _J = 125 °C	≤ 5	

THERMAL RESISTANCES

Thermal resistance	R _{th(j-c)}	Junction to case(AC)	1.7	°C/W
	R _{th(j-a)}	Junction to ambient	60	°C/W

Typical Characteristics

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

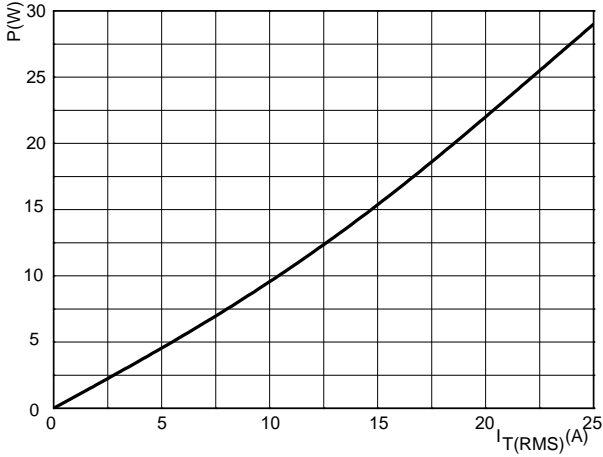


FIG.2: RMS on-state current versus case temperature (full cycle)

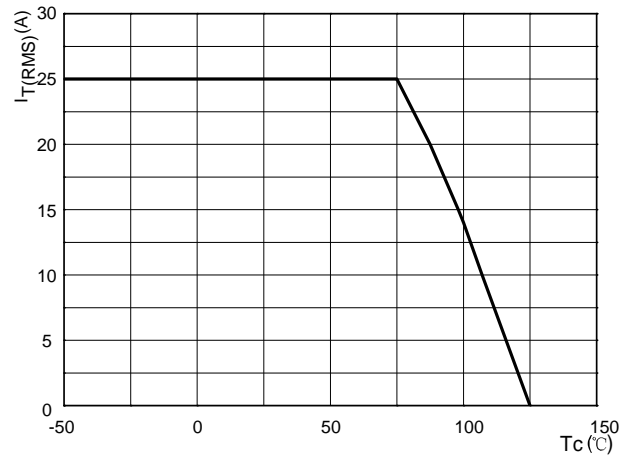


FIG.3: Surge peak on-state current versus number of cycles

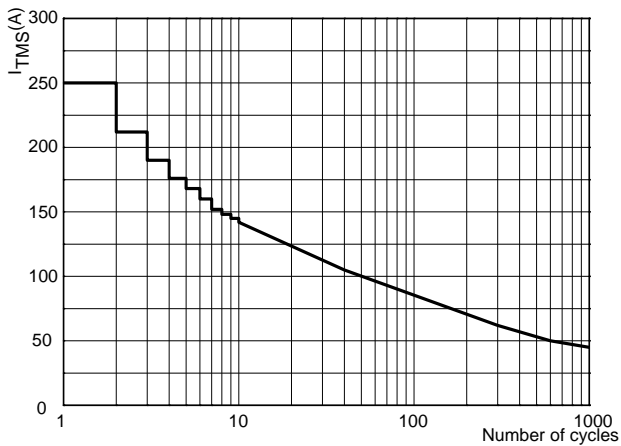


FIG.4: On-state characteristics (maximum values)

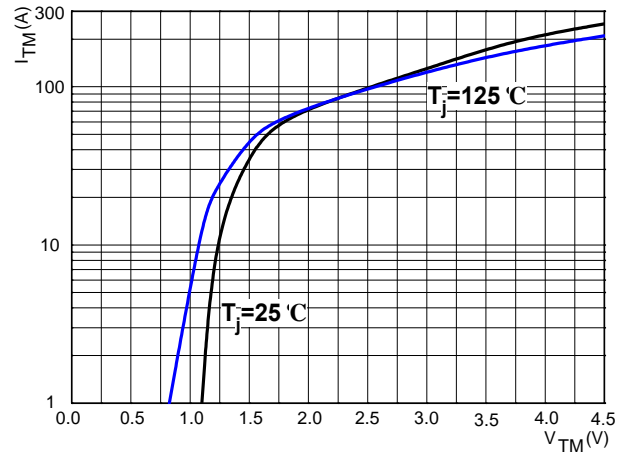


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$

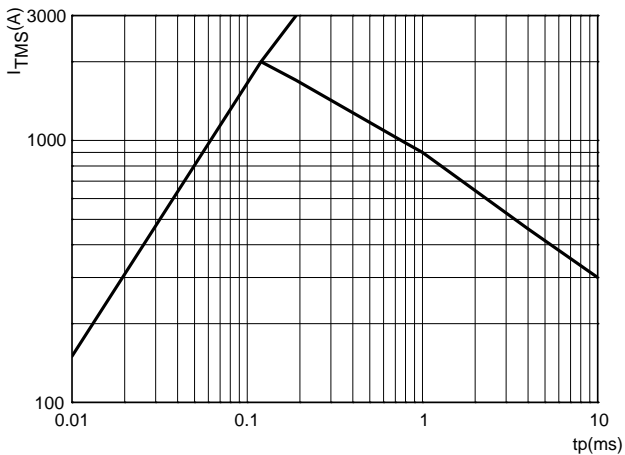
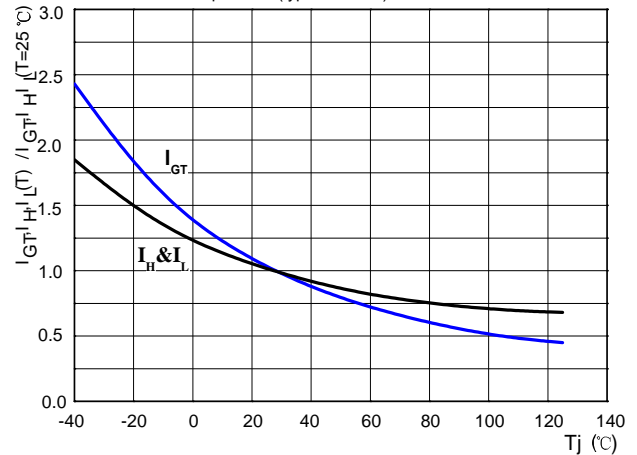
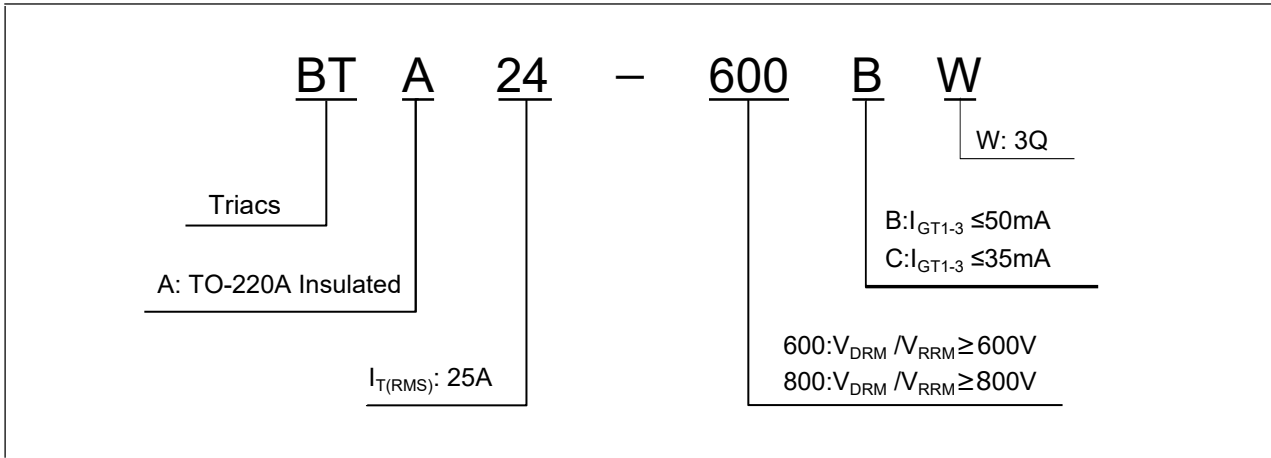


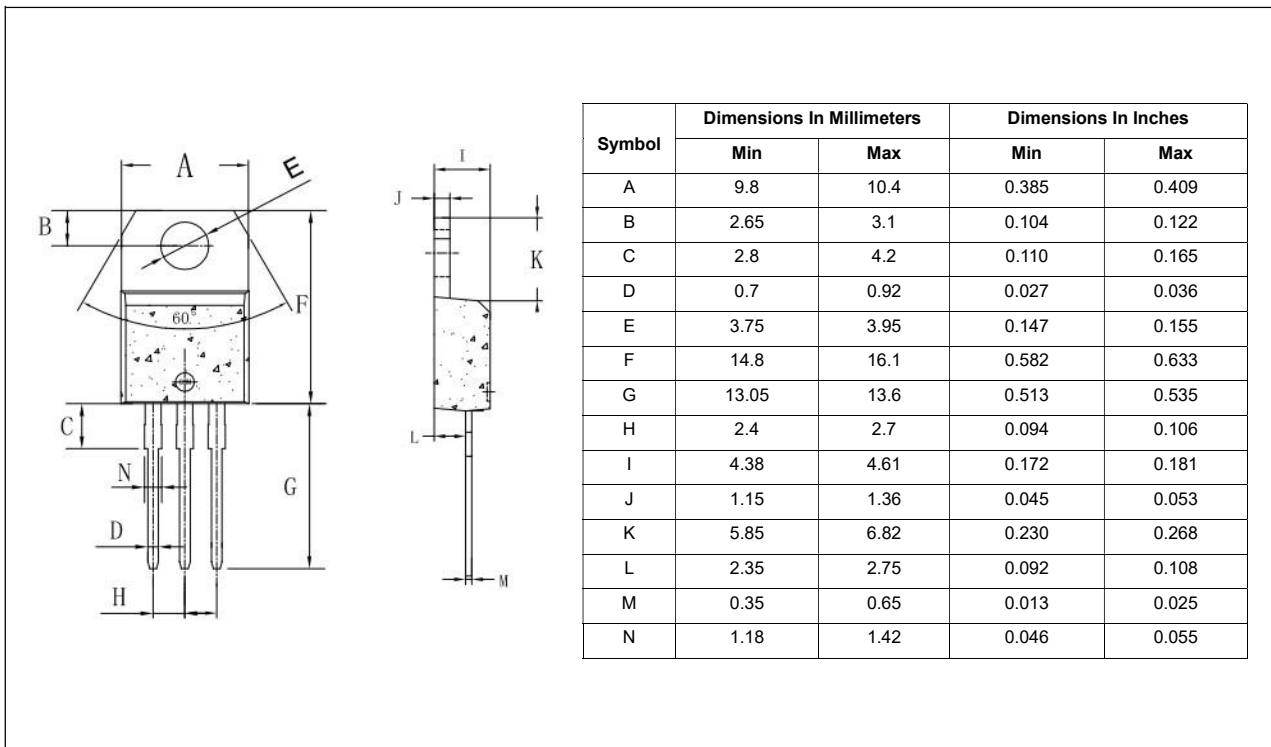
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Ordering Information



TO-220A Insulated Package Information



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