

Product Summary

Symbol	Value	Unit
$I_{T(RMS)}$	40	A
V_{DRM} / V_{RRM}	800/1200/1600	V
V_{TM}	1.55	V

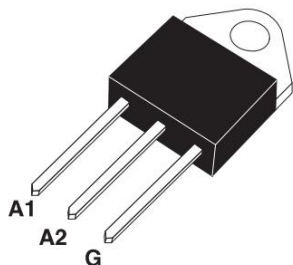
Feature

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

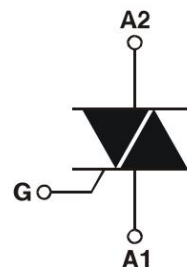
Washing machine, vacuums, massager, solid state relay, AC Motor speed regulation and so on.

Package

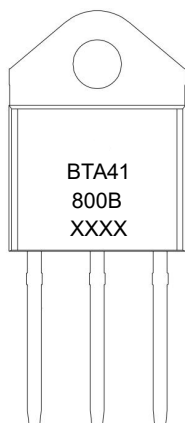


TO-3P Insulated

Circuit diagram



Marking



Absolute maximum ratings (Ta=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage	V _{DRM}	800/1200/1600	V
Repetitive peak reverse voltage	V _{RPM}	800/1200/1600	V
RMS on-state current	I _{T(RMS)}	40	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I _{TSM}	400	A
I ² t value for fusing (tp=10ms)	I ² t	880	A ² s
Critical rate of rise of on-state current (I _G = 2 × I _{GT})	di/dt	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	
Gate trigger current	I _{GT}	V _D = 12V R _L = 33Ω	I - II - III	MAX. 50	mA
Gate trigger voltage	V _{GT}		I - II - III	MAX. 1.3	V
Gate non-trigger voltage	V _{GD}	V _D = V _{DRM} T _J = 125 °C R _L = 3.3KΩ	I - II - III	MIN. 0.2	V
latching current	I _L	I _G = 1.2I _{GT}	I - III	MAX. 80	mA
			II		
Holding current	I _H	I _T = 100mA	MAX.	60	mA
Critical-rate of rise of commutation voltage	dV/dt	V _D = 2/3V _{DRM} Gate Open T _J = 125°C	MIN.	1000	V/μs
STATIC CHARACTERISTICS					
Forward "on" voltage	V _{TM}	I _{TM} = 60A tp = 380μs	MAX.	1.55	V
Repetitive Peak Off-State Current	I _{DRM}	V _D = V _{DRM} V _R = V _{RPM}	T _J = 25°C	MAX. 10	μA
Repetitive Peak Reverse Current	I _{RPM}		T _J = 125°C	MAX. 5	mA
THERMAL RESISTANCES					
Thermal resistance	R _{th(j-c)}	Junction to case(AC)	TYP.	0.9	°C/W
	R _{th(j-a)}	Junction to ambient	TYP.	50	°C/W

Typical Characteristics

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

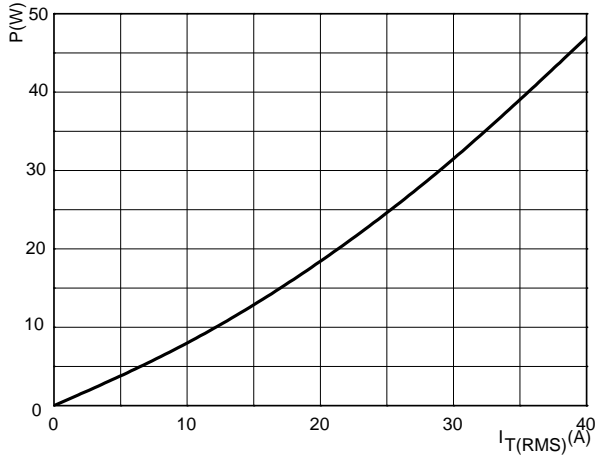


FIG.2: RMS on-state current versus case temperature (full cycle)

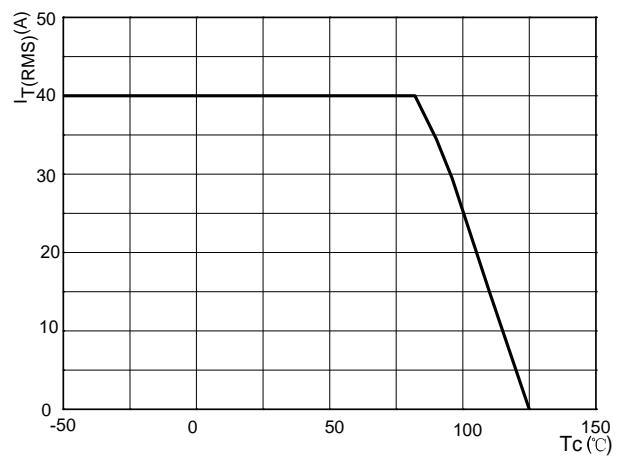


FIG.3: Surge peak on-state current versus number of cycles

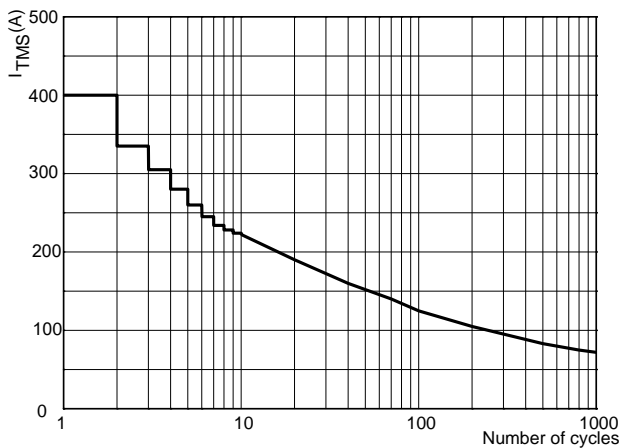


FIG.4: On-state characteristics (maximum values)

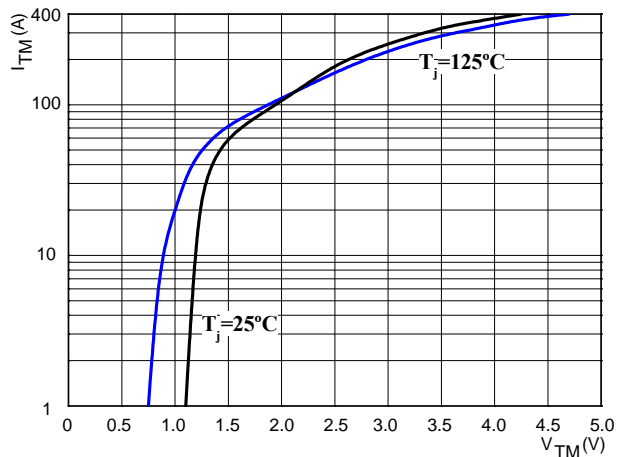


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$

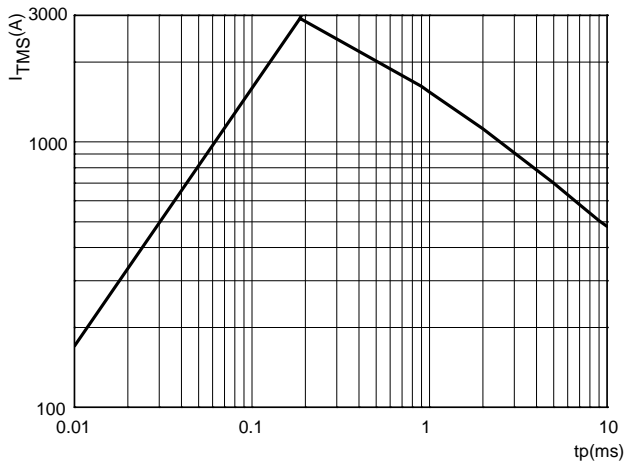
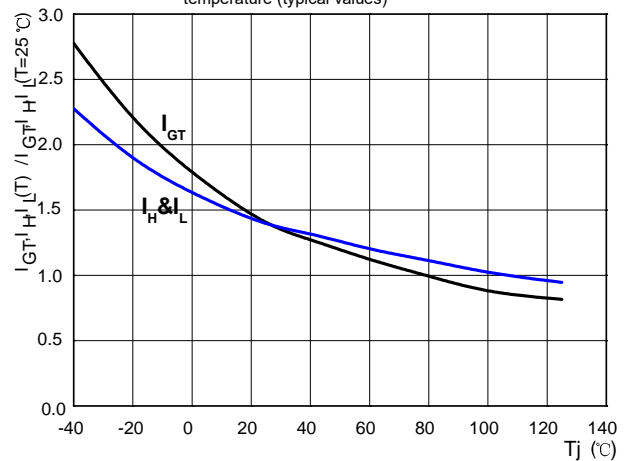
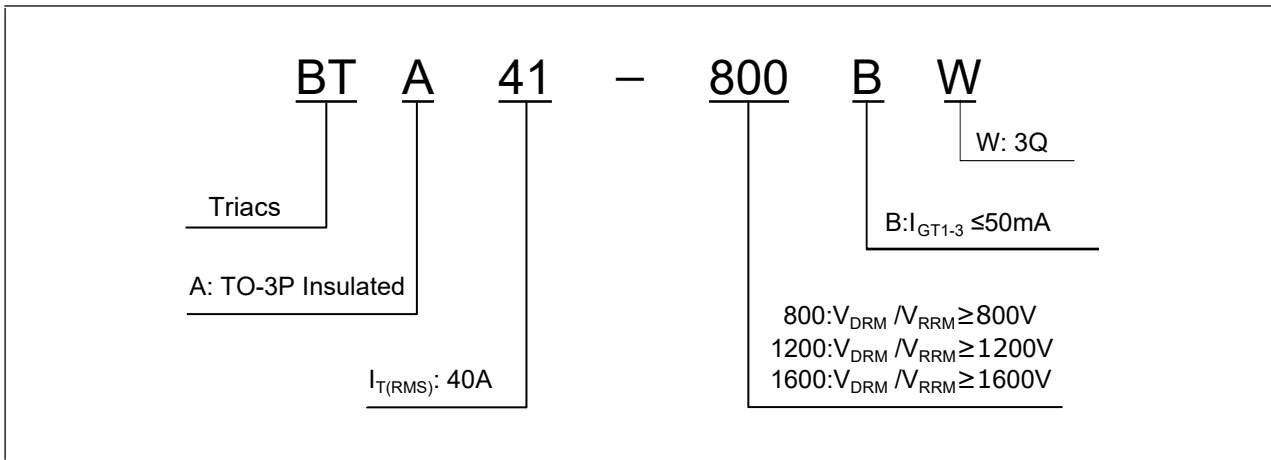


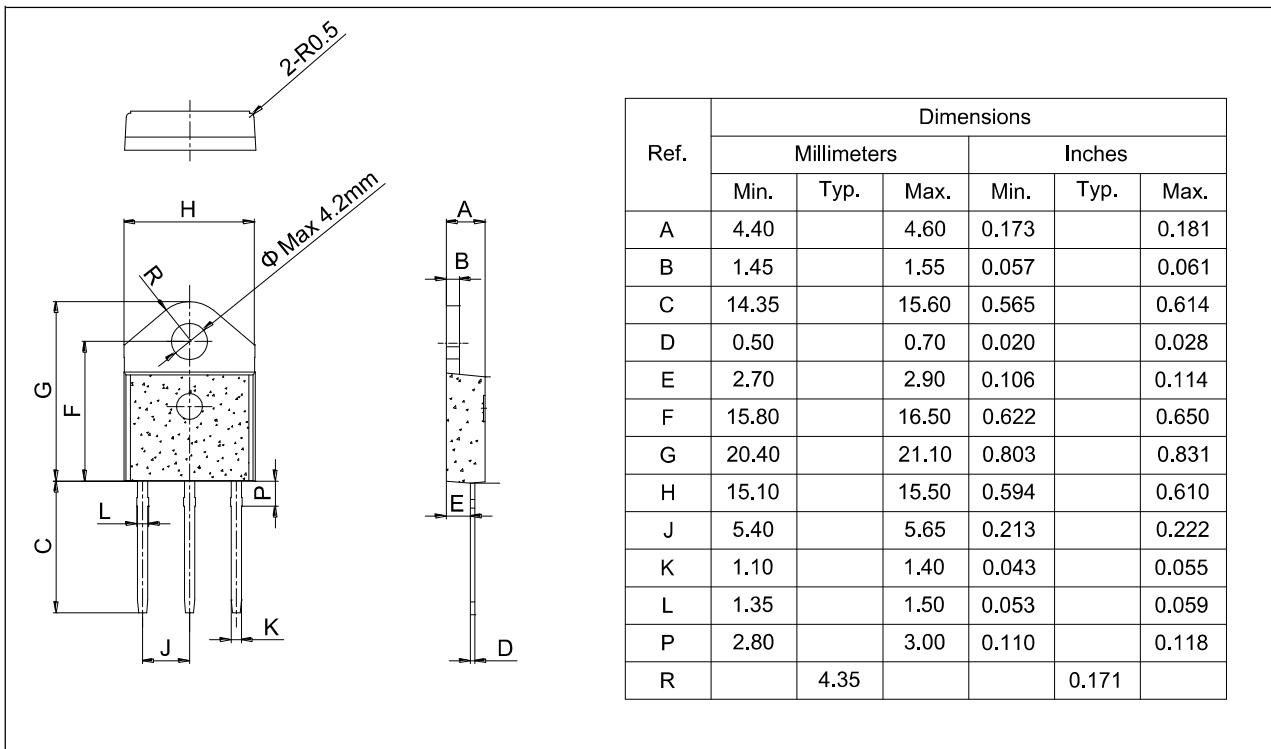
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Ordering Information



TO-3P Insulated Package Information



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