

Product Summary

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

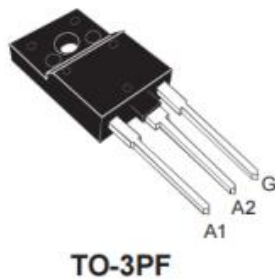
Feature

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.

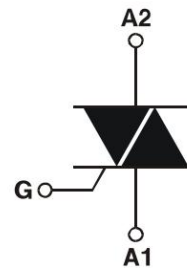
Application

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

Package



Circuit diagram



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_{RRM}	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^2t value for fusing (tp=10ms)	I^2t	800	A ² s
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	di/dt	50	A/ μ s
Peak gate current	I_{GM}	8	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
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.	100	mA
			II		160	
Holding current	I _H	I _T =500mA		MAX.	80	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 _R RM	T _j =25°C	MAX.	10	μA
Repetitive Peak Reverse Current	I _{RRM}		T _j =125°C	MAX.	6	mA
THERMAL RESISTANCES						
Thermal resistance	Rth(j-c)	Junction to case(AC)		TYP.	1.2	°C/W
	Rth(j-a)	Junction to ambient		TYP.	50	°C/W

Typical Characteristics

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

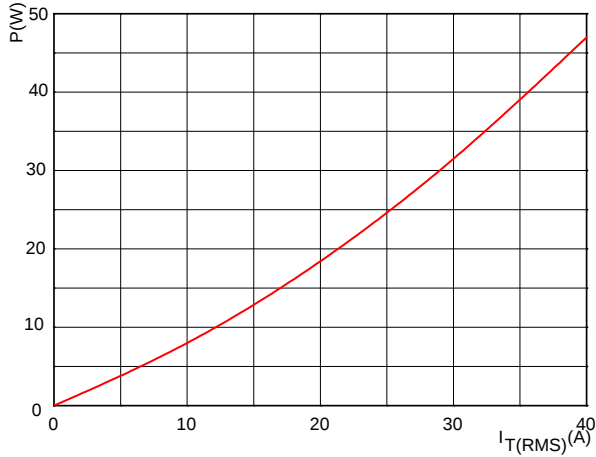


FIG.2: RMS on-state current versus case temperature (full cycle)

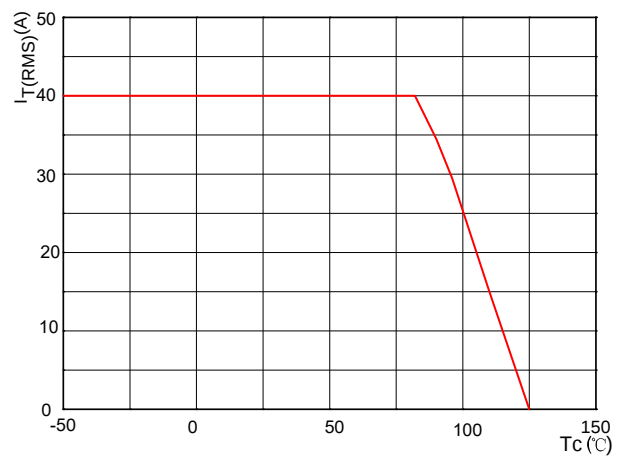


FIG.3: Surge peak on-state current versus number of cycles

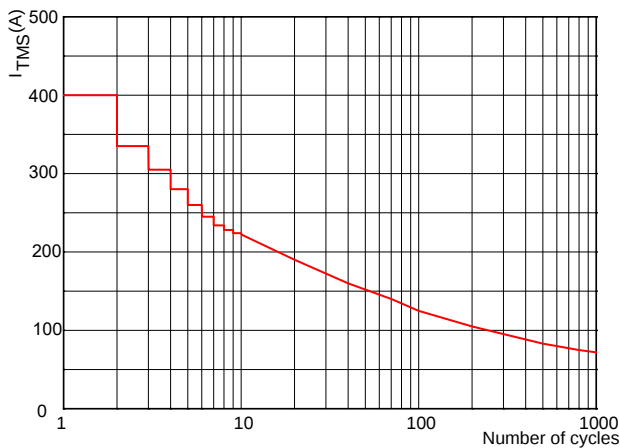


FIG.4: On-state characteristics (maximum values)

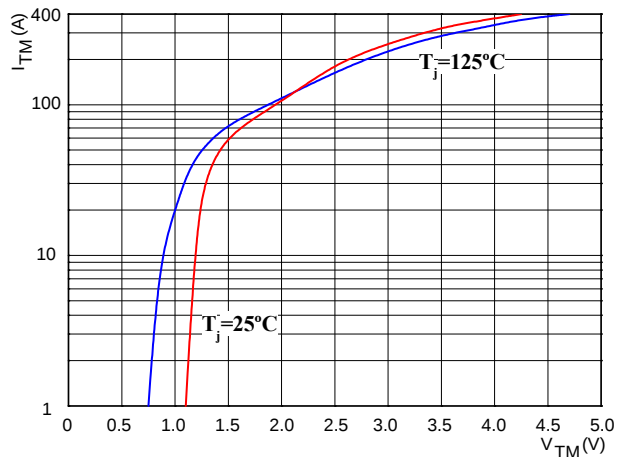


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10ms$

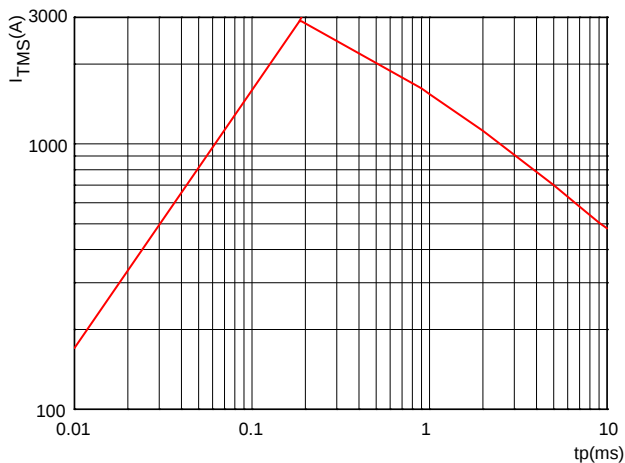
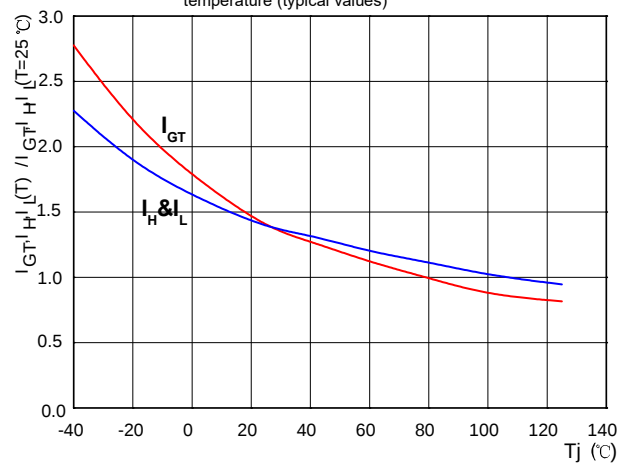
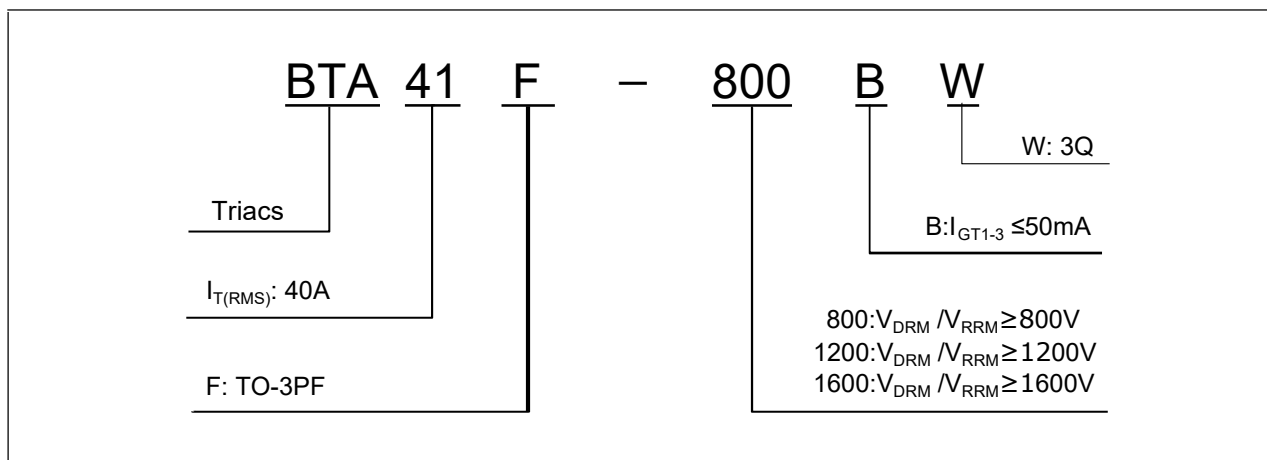


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



Ordering Information



TO-3PF Package Information

