

**Product Summary**

Symbol	Value	Unit
$I_{T(RMS)}$	60	A
$V_{DRM} V_{RRM}$	1200	V
$V_{TM}$	1.65	V

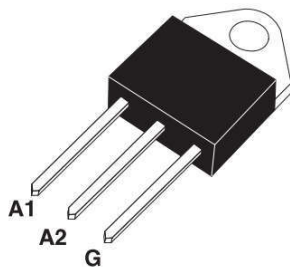
**Feature**

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**

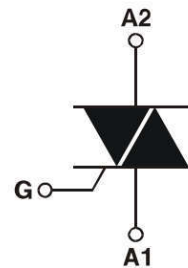
Washing machine, vacuums, massager, solid state relay, AC Motor speed regulation and so on.

**Package**

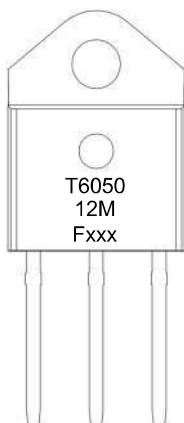


TO-3P Insulated

**Circuit diagram**



**Marking**



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

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage	V <sub>DRM</sub>	1200	V
Repetitive peak reverse voltage	V <sub>RPM</sub>	1200	V
RMS on-state current	I <sub>T(RMS)</sub>	60	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I <sub>TSM</sub>	500	A
I <sup>2</sup> t value for fusing (tp=10ms)	I <sup>2</sup> t	1250	A
Critical rate of rise of on-state current (I <sub>G</sub> = 2 × I <sub>GT</sub> )	di/dt	50	A/μs
Peak gate current	I <sub>GM</sub>	8	A
Average gate power dissipation	P <sub>G(AV)</sub>	1	W
Junction Temperature	T <sub>J</sub>	-40 ~ +125	°C
Storage Temperature	T <sub>STG</sub>	-40 ~ +150	°C

### Electrical characteristics (T<sub>A</sub>=25 °C, unless otherwise noted)

Parameter	Symbol	Test Condition		Value	Unit	
Gate trigger current	I <sub>GT</sub>	V <sub>D</sub> = 12V R <sub>L</sub> = 30Ω	I - II - III	MAX.	50	mA
Gate trigger voltage	V <sub>GT</sub>		I - II - III	MAX.	1.3	V
Gate non-trigger voltage	V <sub>GD</sub>	V <sub>D</sub> = V <sub>DRM</sub> T <sub>J</sub> = 125 °C R <sub>L</sub> = 3.3KΩ	I - II - III	MIN.	0.2	V
latching current	I <sub>L</sub>	I <sub>G</sub> = 1.2I <sub>GT</sub>	I - III	MAX.	80	mA
			II	MAX.	180	
Holding current	I <sub>H</sub>	I <sub>T</sub> = 100mA		MAX.	80	mA
Critical-rate of rise of commutation voltage	dV/dt	V <sub>D</sub> = 2/3V <sub>DRM</sub> Gate Open T <sub>J</sub> = 125°C		MIN.	800	V/μs
<b>STATIC CHARACTERISTICS</b>						
Forward "on" voltage	V <sub>TM</sub>	I <sub>TM</sub> = 11A tp = 380μs		MAX.	1.65	V
Repetitive Peak Off-State Current	I <sub>DRM</sub>	V <sub>D</sub> = V <sub>DRM</sub> V <sub>R</sub> = V <sub>RPM</sub>	T <sub>J</sub> = 25°C	MAX.	10	μA
Repetitive Peak Reverse Current	I <sub>RPM</sub>		T <sub>J</sub> = 125°C	MAX.	1	mA
<b>THERMAL RESISTANCES</b>						
Thermal resistance	R <sub>th(j-c)</sub>	Junction to case		TYP.	50	°C/W
	R <sub>th(j-a)</sub>	Junction to ambient		TYP.	0.7	°C/W

**Typical Characteristics**

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

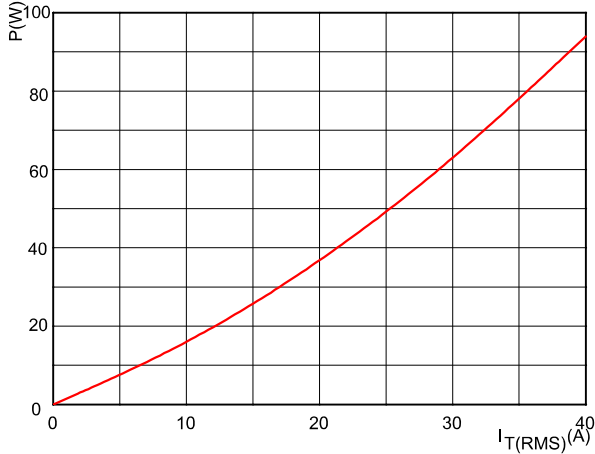


FIG.2: RMS on-state current versus case temperature (full cycle)

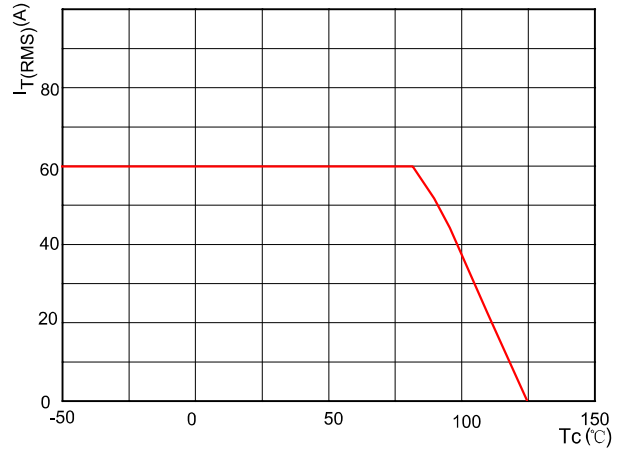


FIG.3: Surge peak on-state current versus number of cycles

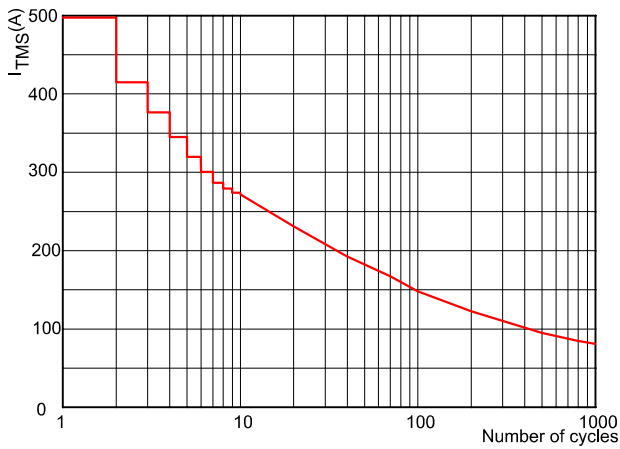


FIG.4: On-state characteristics (maximum values)

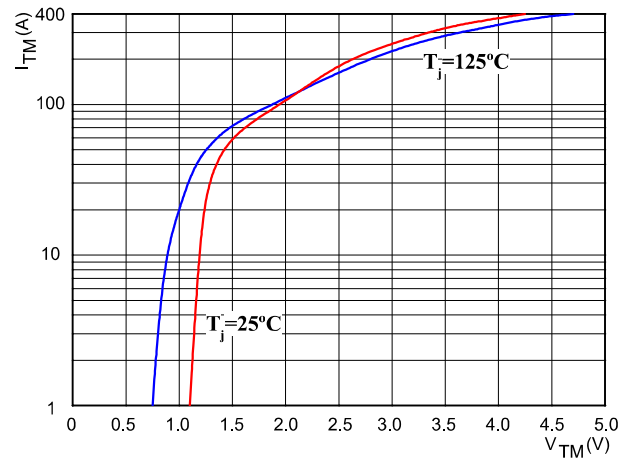


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$

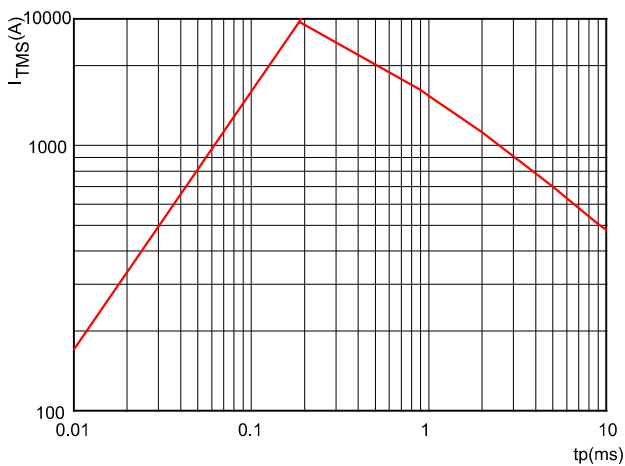
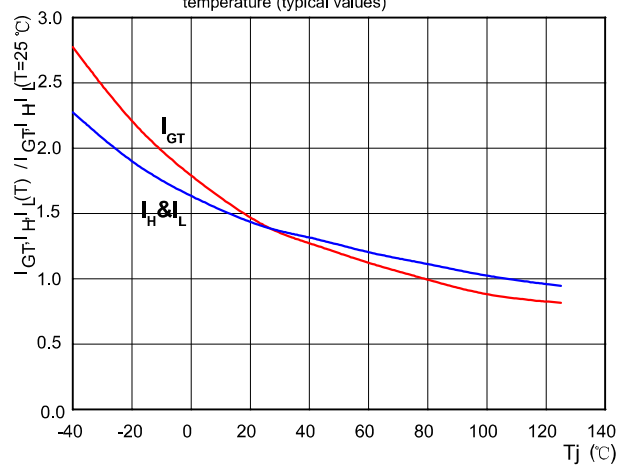


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



**TO-3P Insulated Package Information**

