

**Product Summary**

Symbol	Value	Unit
$I_{T(RMS)}$	4.0	A
$V_{DRM} V_{RRM}$	600 / 800	V
$I_{GT}$	200	$\mu A$

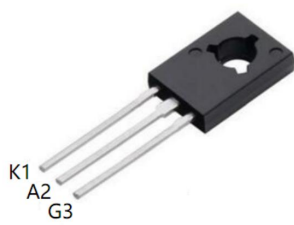
**Feature**

With high ability to withstand the shock loading of large current, Provide high dv/dt rate with strong resistance to electromagnetic interference.

**Application**

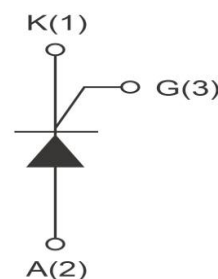
Power charger, T-tools, massager, solid state relay, AC Motor speed regulation and so on.

**Package**

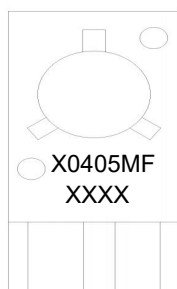


**TO-126**

**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>	600 / 800	V
Repetitive peak reverse voltage	V <sub>RPM</sub>	600 / 800	V
RMS on-state current	I <sub>T(RMS)</sub>	4	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I <sub>TSM</sub>	30	A
I <sup>2</sup> t value for fusing (tp=10ms)	I <sup>2</sup> t	4.5	A <sup>2</sup> s
Critical rate of rise of on-state current (I <sub>G</sub> = 2 × I <sub>GT</sub> )	di <sub>T</sub> /dt	50	A/μs
Peak gate current	I <sub>GM</sub>	1.2	A
Average gate power dissipation	P <sub>G(AV)</sub>	0.2	W
Junction Temperature	T <sub>J</sub>	-40 ~ +110	°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
			Min	Max	
Gate trigger current	I <sub>GT</sub>	V <sub>D</sub> = 12V R <sub>L</sub> = 140Ω T <sub>J</sub> = 25°C	10	200	μA
Gate trigger voltage	V <sub>GT</sub>		-	0.8	V
Gate non-trigger voltage	V <sub>GD</sub>	V <sub>D</sub> = V <sub>DRM</sub> R <sub>GK</sub> = 1kΩ T <sub>J</sub> = 110°C	0.2	-	V
latching current	I <sub>L</sub>	I <sub>G</sub> = 1mA R <sub>GK</sub> = 1kΩ T <sub>J</sub> = 25°C	-	6	mA
Holding current	I <sub>H</sub>	I <sub>T</sub> = 50mA R <sub>GK</sub> = 1kΩ T <sub>J</sub> = 25°C	-	5	mA
Critical-rate of rise of commutation voltage	dV <sub>D</sub> /dt	V <sub>D</sub> = 2/3V <sub>DRM</sub> R <sub>GK</sub> = 1kΩ T <sub>J</sub> = 110°C	10	-	V/μs
<b>STATIC CHARACTERISTICS</b>					
Forward "on" voltage	V <sub>TM</sub>	I <sub>TM</sub> = 8A tp = 380μs	-	1.55	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		μA
Repetitive Peak Reverse Current	I <sub>RPM</sub>		T <sub>J</sub> = 110°C		mA
<b>THERMAL RESISTANCES</b>					
Thermal resistance	R <sub>th(j-c)</sub>	Junction to case (AC)	TYP.	7.2	°C/W
	R <sub>th(j-a)</sub>	Junction to ambient	TYP.	100	°C/W

**Typical Characteristics**

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

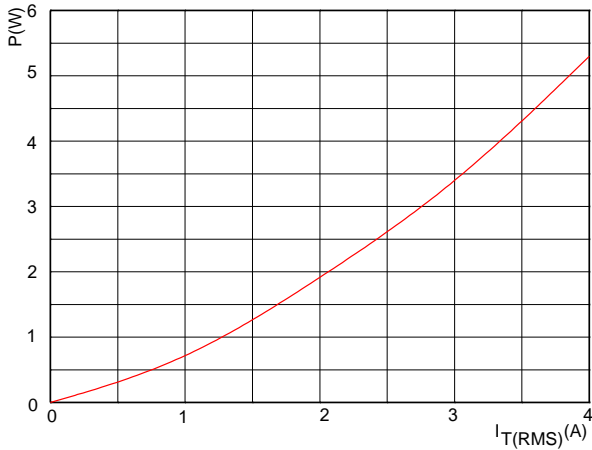


FIG.2: RMS on-state current versus case temperature (full cycle)

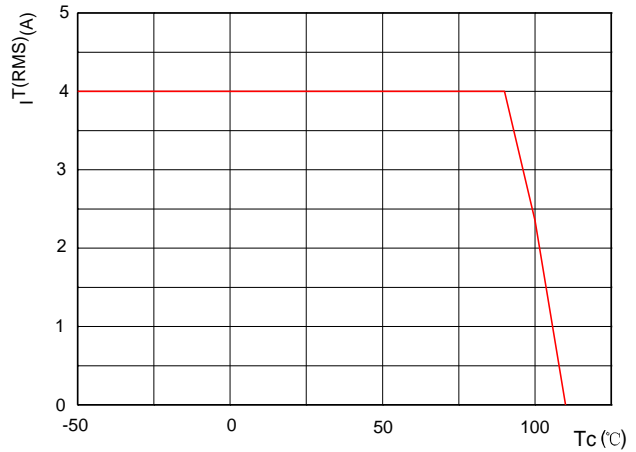


FIG.3: Surge peak on-state current versus number of cycles

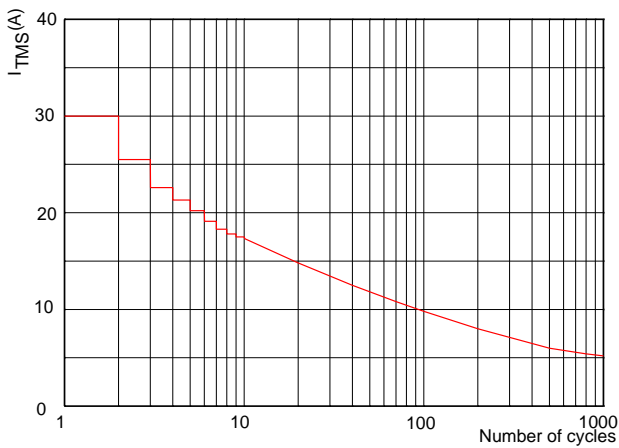


FIG.4: On-state characteristics (maximum values)

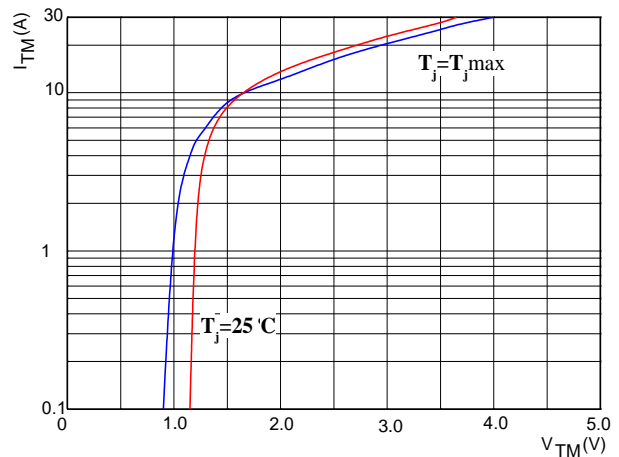


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$

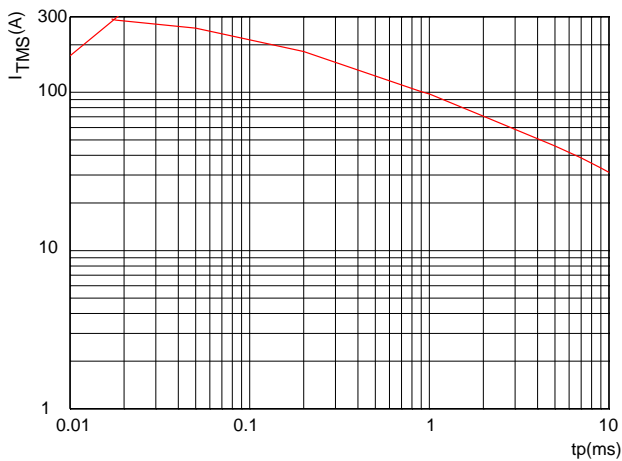
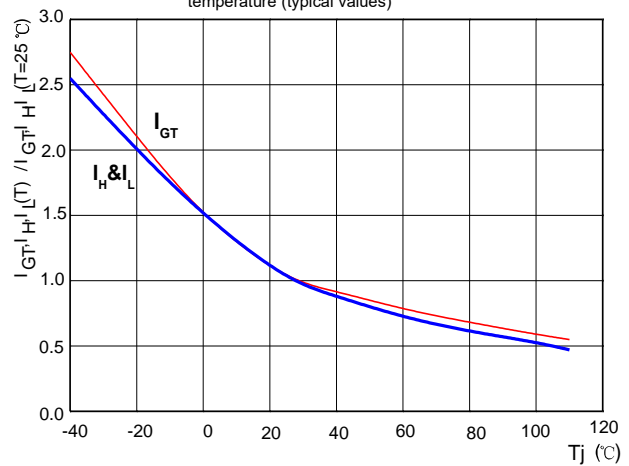
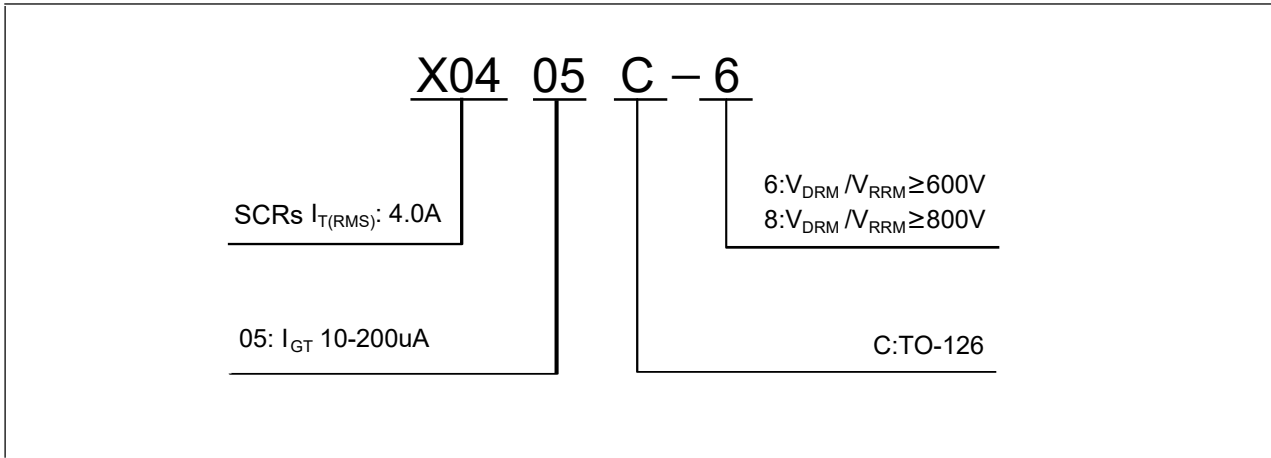


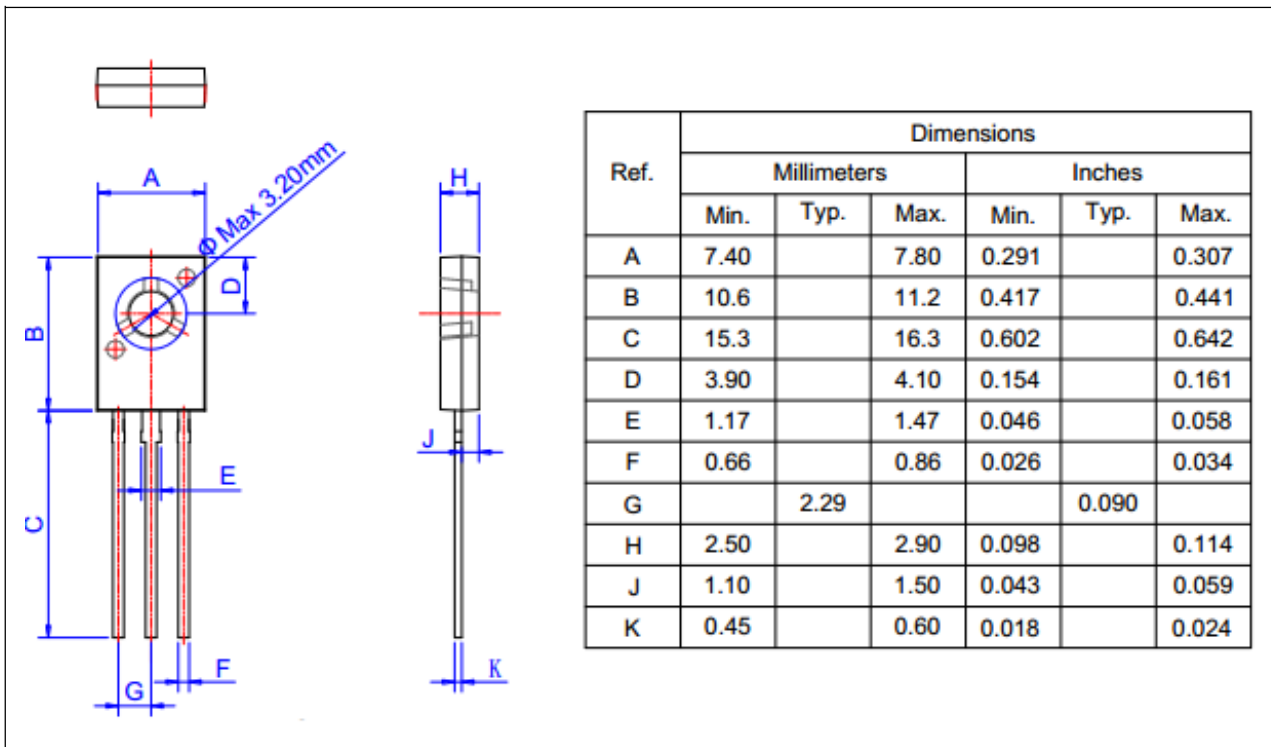
FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature (typical values)



## Ordering Information



## TO-126 Package Information



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