

Product Summary

Symbol	Value	Unit
$I_{T(RMS)}$	55	A
$V_{DRM} V_{RRM}$	1200	V
V_{TM}	1.8	V

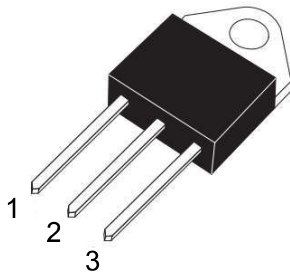
Feature

- High thermal cycling performance
- High voltage capacity
- Very high current surge capability

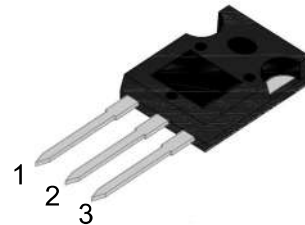
Application

- Line rectifying 50/60 Hz
- Softstart AC motor control
- DC Motor control
- Power converter
- AC power control
- Lighting and temperature control

Package

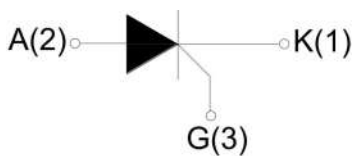


TO-3P Insulated



TO-247

Circuit diagram



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

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage	V _{DRM}	1200	V
Repetitive peak reverse voltage	V _{RRM}	1200	V
Non repetitive surge peak Off-state voltage	V _{DSM}	V _{DRM} +100	V
Non repetitive peak reverse voltage	V _{RSM}	V _{RRM} +100	V
RMS on-state current	I _{T(RMS)}	55	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I _{TSM}	550	A
Average on-state current (180° conduction angle)	I _{T(AV)}	35	A
I ² t value for fusing (tp=10ms)	I ² t	1500	A
Critical rate of rise of on-state current (I _G =2× I _{GT})	dI/dt	150	A/μs
Peak gate current	I _{GM}	5	A
Average gate power dissipation	P _{G(AV)}	2	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 = 140Ω	MAX.	60	mA	
Gate trigger voltage	V _{GT}		MAX.	1.3	V	
Gate non-trigger voltage	V _{GD}	V _D =V _{DRM} T _J =125°C	MIN.	0.2	V	
latching current	I _L	I _G =1.2I _{GT}	MAX.	250	mA	
Holding current	I _H	I _T =50mA	MAX.	200	mA	
Critical-rate of rise of commutation voltage	dV/dt	V _D =2/3V _{DRM} Gate Open T _J =125°C	MIN.	800	V/μs	
STATIC CHARACTERISTICS						
Forward "on" voltage	V _{TM}	I _{TM} =80A tp=380μs	MAX.	1.8	V	
Repetitive Peak Off-State Current	I _{IDRM}	V _D =V _{DRM} V _R =V _{RRM}	T _J =25°C	MAX.	20	μA
Repetitive Peak Reverse Current	I _{IRRM}		T _J =125°C	MAX.	8	mA
THERMAL RESISTANCES						
Thermal resistance	R _{th(j-c)}	TO-3P	TYP.	0.65	°C/W	
	R _{th(j-c)}	TO-247	TYP.	0.6	°C/W	

Typical Characteristics

FIG.1 Maximum power dissipation versus on-state current

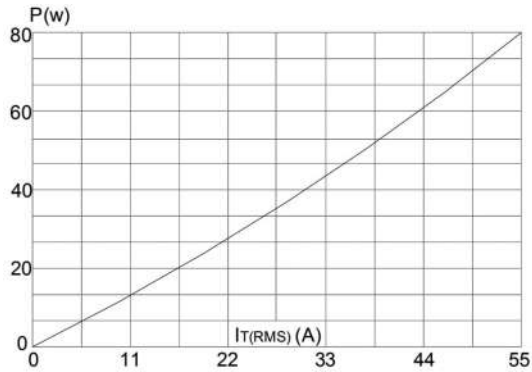


FIG.2: on-state current versus case temperature

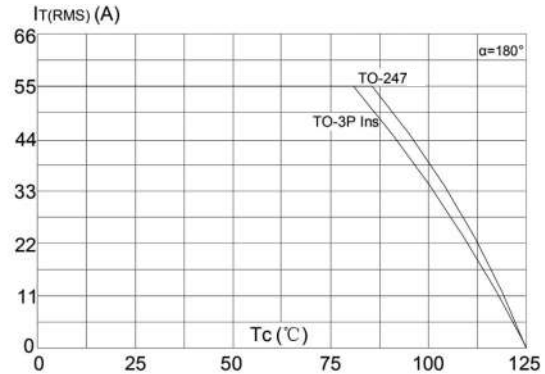


FIG.3: Surge peak on-state current versus number of cycles

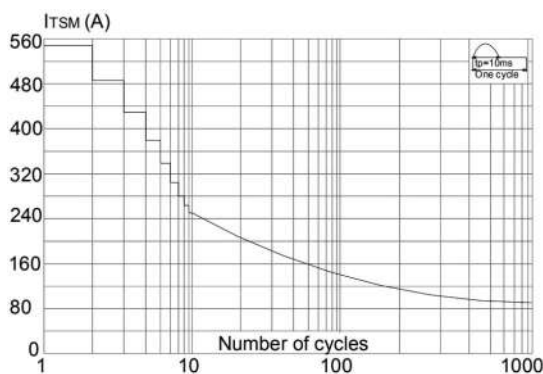


FIG.4: On-state characteristics (maximum values)

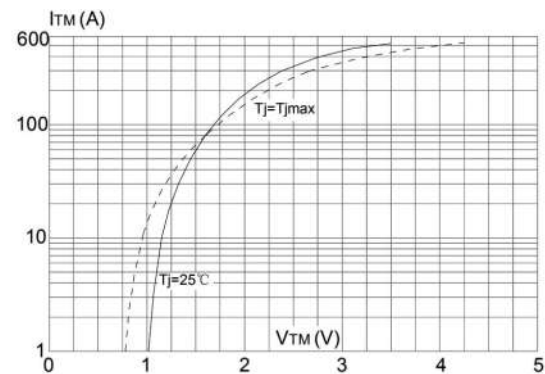


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of $I_2 t$

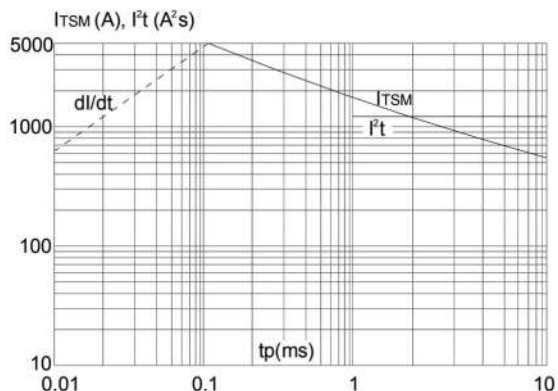
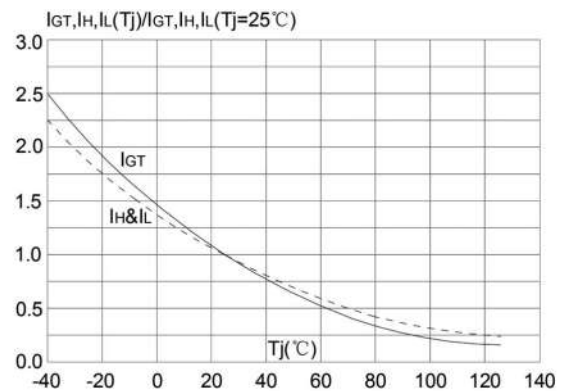
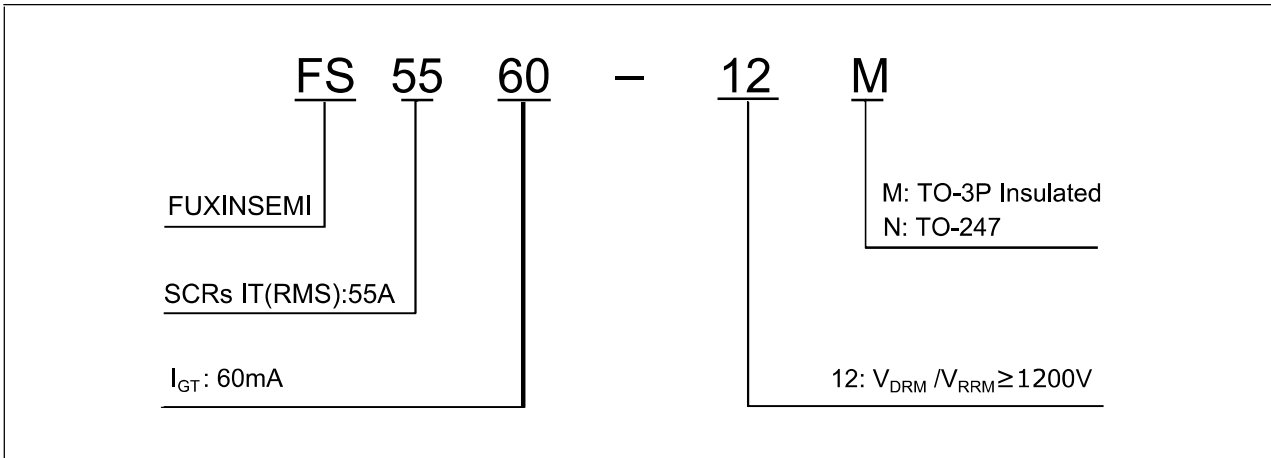


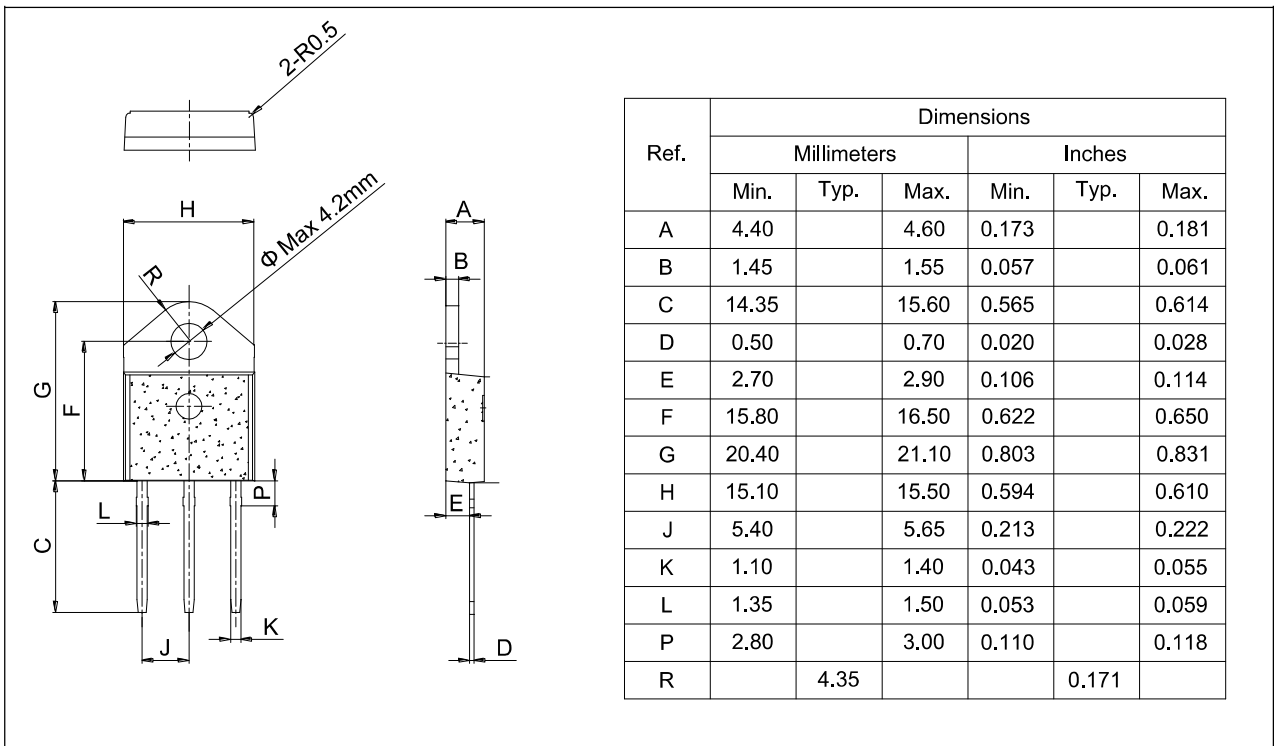
FIG.6: Relative variations of gate trigger current holding current and latching current versus junction temperature



Ordering Information



TO-3P Insulated Package Information



TO-247 Package Information

