

Product Summary

Symbol	Value	Unit
$I_{T(RMS)}$	100	A
$V_{DRM} V_{RRM}$	1200 / 1600	V
V_{TM}	1.55	V

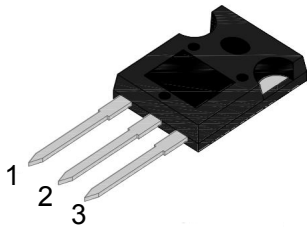
Feature

- Glass Passivated Junctions
- High voltage and surge capability
- Low Thermal Resistance and Durability
- Triggering in three quadrants

Application

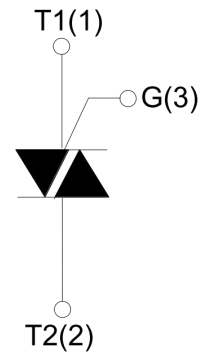
- Static relays
- Heating regulation
- In-duction motor starting circuits
- Phase control operation in light dimmers
- Motor speed controllers

Package



TO-247PULS

Circuit diagram



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

Parameter	Symbol	Value	Unit
Repetitive peak off-state voltage	V_{DRM}	1200 / 1600	V
Repetitive peak reverse voltage	V_{RRM}	1200 / 1600	V
RMS on-state current (TC=100°C)	$I_{T(RMS)}$	100	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	1000	A
I^2t value for fusing (tp=10ms)	I^2t	5000	A
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	di/dt	100	A/ μ s
Peak gate current	I_{GM}	4	A
Peak gate power dissipation	P_G	10	W
Average gate power dissipation	$P_{G(AV)}$	2	W
Junction Temperature	T_J	-40 ~ +150	°C
Storage Temperature	T_{STG}	-40 ~ +150	°C

Electrical characteristics (TA=25 °C, unless otherwise noted)

Parameter	Symbol	Test Condition	Quadrant		Value	Unit
Gate trigger current	I_{GT}	$V_D = 12V, I_T = 0.1A, T_j = 25^\circ C$	I-II-III	MAX.	50	mA
Gate trigger voltage	V_{GT}		I-II-III	MAX.	1.3	V
Gate non-trigger voltage	V_{GD}	$V_D = V_{DRM}, T_j = 125^\circ C$	I-II-III	MIN.	0.2	V
latching current	I_L	$I_G = 1.2I_{GT}$	I-II-III	MAX.	200	mA
Holding current	I_H	$I_T = 500mA$		MAX.	150	mA
Critical-rate of rise of commutation voltage	dV/dt	$V_D = 2/3V_{DRM}$ Gate Open $T_j = 125^\circ C$		MIN.	1000	V/ μ s
STATIC CHARACTERISTICS						
Forward "on" voltage	V_{TM}	$I_{TM} = 150A$ tp=380 μ s		MAX.	1.55	V
Repetitive Peak Off-State Current	I_{DRM}	$V_D = V_{DRM}, V_R = V_{RRM}$	$T_j = 25^\circ C$	MAX.	50	μ A
Repetitive Peak Reverse Current	I_{RRM}		$T_j = 125^\circ C$	MAX.	12	mA
THERMAL RESISTANCES						
Thermal resistance	$R_{th(j-c)}$	TO-247PULS		TYP.	0.45	°C/W

Typical Characteristics

FIG.1 Maximum power dissipation versus on-state current

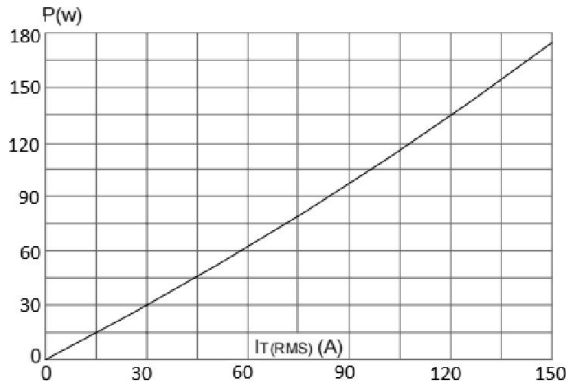


FIG.2: on-state current versus case temperature

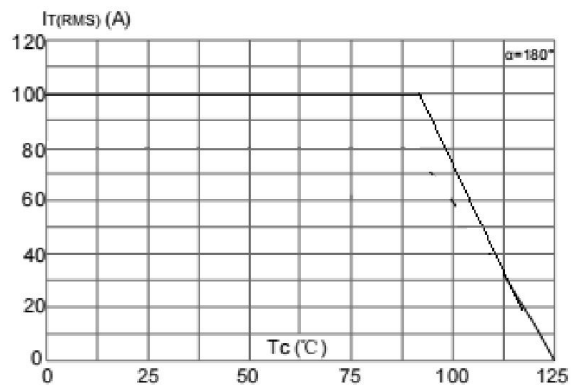


FIG.3: Surge peak on-state current versus number of cycles

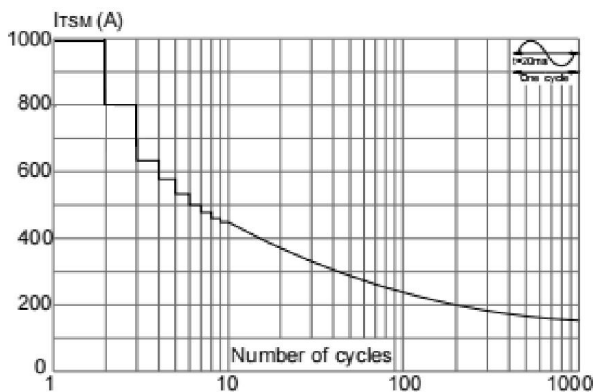


FIG.4: On-state characteristics (maximum values)

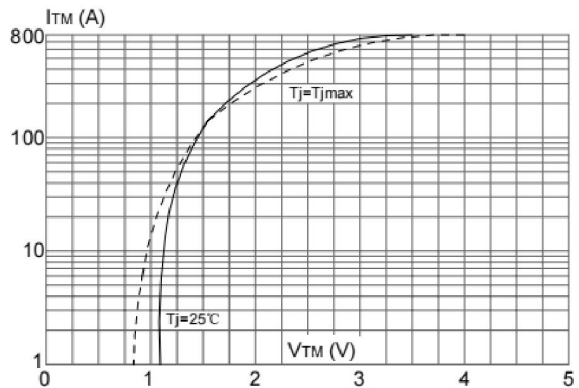


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of $I_2 t$ ($di/dt < 50\text{A}/\mu\text{s}$)

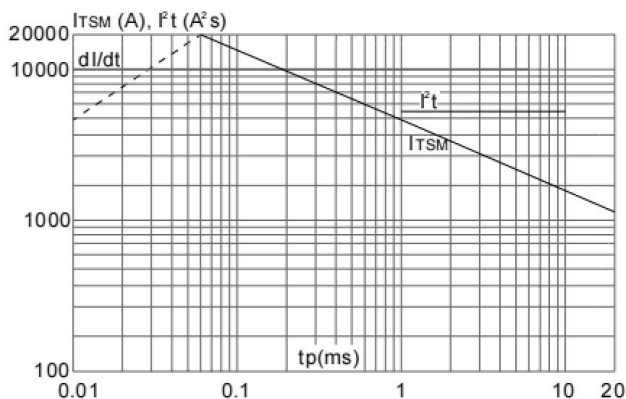
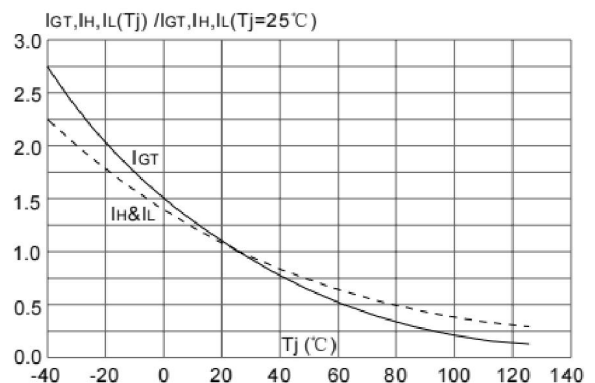
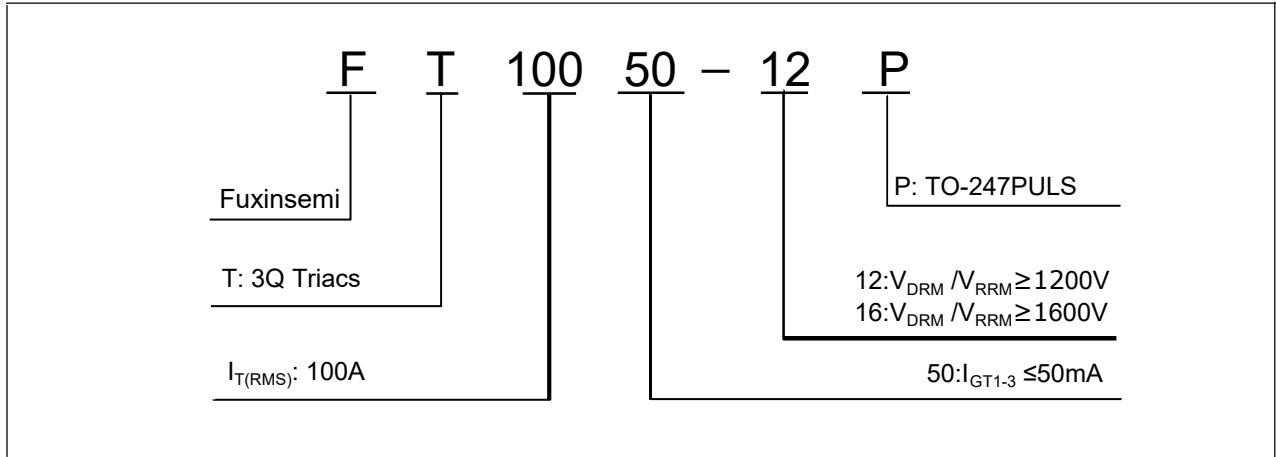


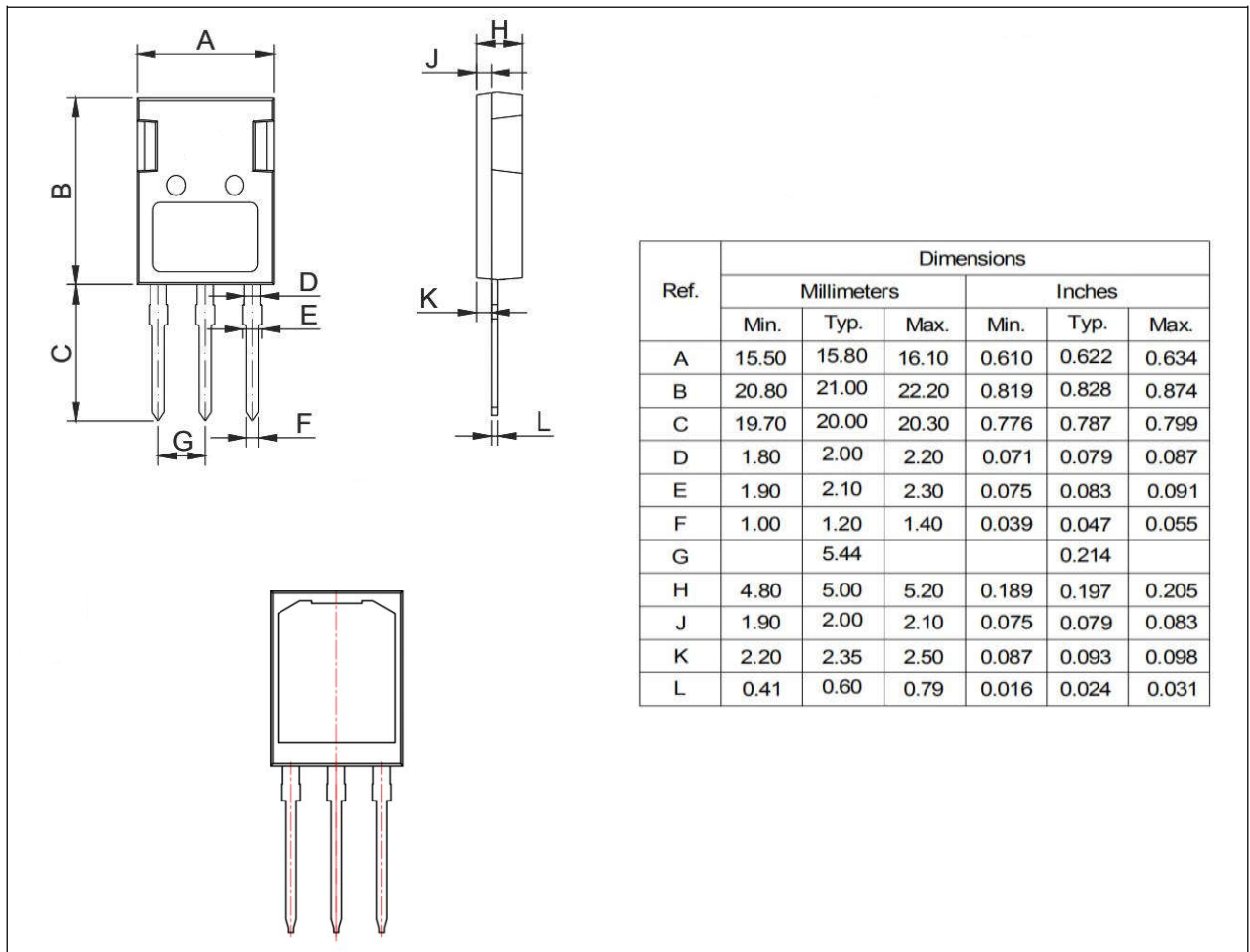
FIG.6: Relative variations of gate trigger current holding current and latching current versus junction temperature



Ordering Information



TO-247PULS Insulated Package Information



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