

Product Summary

Symbol	Value	Unit
$I_{T(RMS)}$	40	A
$V_{DRM} V_{RRM}$	1200 / 1600	V
V_{TM}	1.5	V

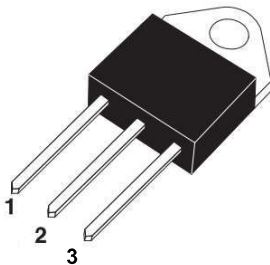
Feature

- On-state rms current, $I_{T(RMS)}$ 40A
- Repetitive peak off-state voltage, V_{DRM}/V_{RRM} 1200/1600V
- Triggering gate current, I_{GT} 40 mA

Application

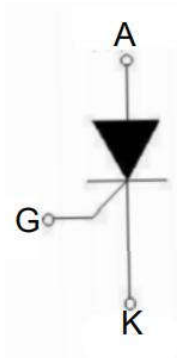
- Line rectifying 50/60 Hz
- Softstart AC motor control
- DC Motor control
- Power converter
- AC power control
- Lighting and temperature control

Package

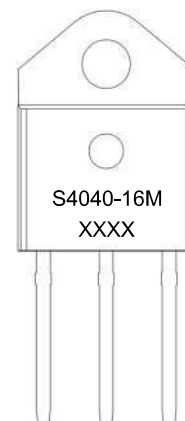


TO-3P Insulated

Circuit diagram



Marking



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	$I_{T(RMS)}$	40	A
Non repetitive surge peak on-state current (full cycle, F=50Hz)	I_{TSM}	380	A
I^2t value for fusing (tp=10ms)	I^2t	720	A
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	di/dt	150	A/ μ s
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_{G(AV)}$	5	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}	$V_D = 12V R = 140\Omega$	MAX.	35	mA
Gate trigger voltage	V_{GT}		MAX.	1.5	V
Gate non-trigger voltage	V_{GD}	$V_D = V_{DRM} T_J = 125^\circ C$	MIN.	0.2	V
latching current	I_L	$I_G = 1.2I_{GT}$	MAX.	200	mA
Holding current	I_H	$I_T = 50mA$	MAX.	100	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}	$I_{TM} = 32A$ tp=380 μ s	MAX.	1.5	V
Repetitive Peak Off-State Current	I_{DRM}	$V_D = V_{DRM} V_R = V_{RRM}$	$T_J = 25^\circ C$	MAX.	10 μ A
Repetitive Peak Reverse Current	I_{RRM}		$T_J = 125^\circ C$	MAX.	4
THERMAL RESISTANCES					
Thermal resistance	$R_{th(j-c)}$	Junction to case	TYP.	60	°C/W
	$R_{th(j-a)}$	Junction to ambient	TYP.	0.9	°C/W

Typical Characteristics

FIG.1 Maximum power dissipation versus Average on-state current

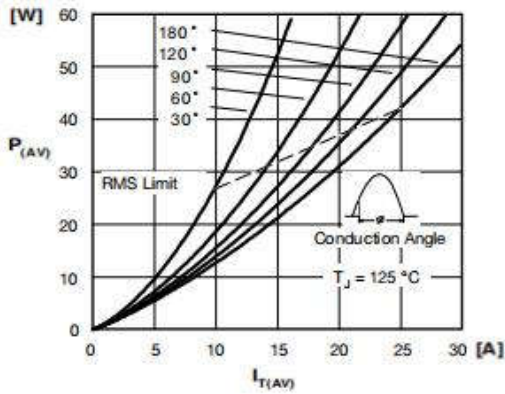


FIG.2: on-state current versus case temperature

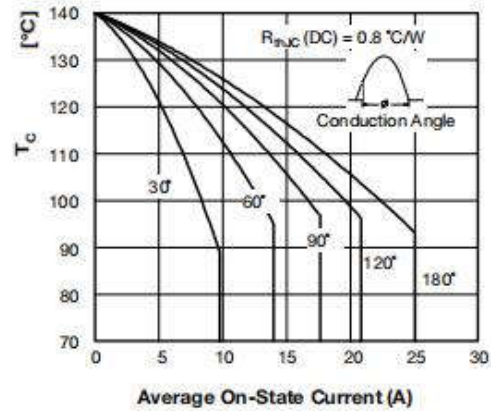


FIG.3: Surge peak on-state current versus number of cycles

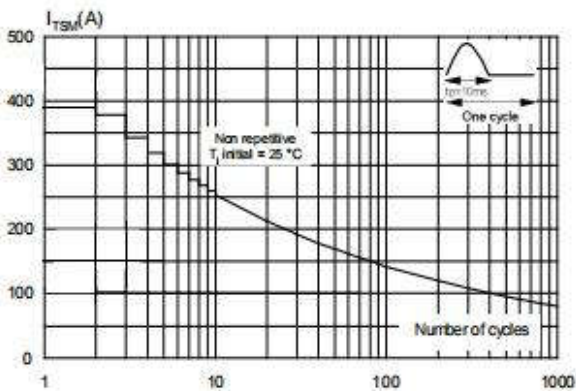


FIG.4: On-state characteristics (maximum values)

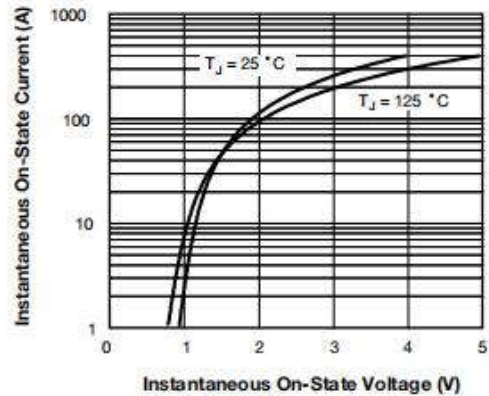


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of $I_2 t$ ($di/dt < 50\text{A}/\mu\text{s}$)

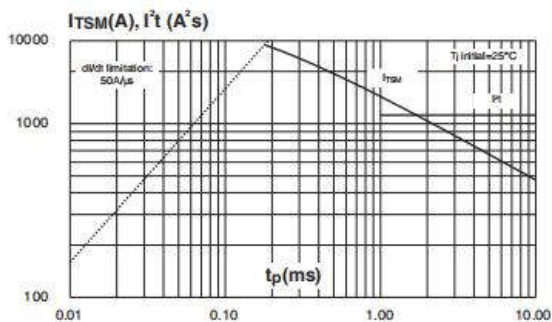
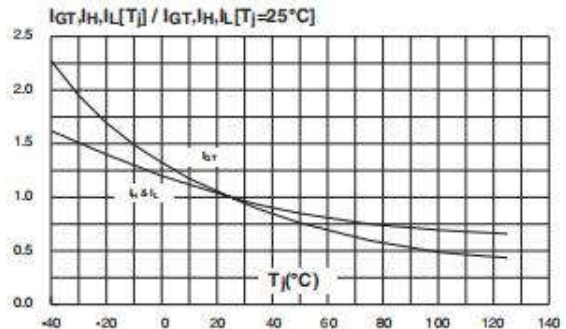
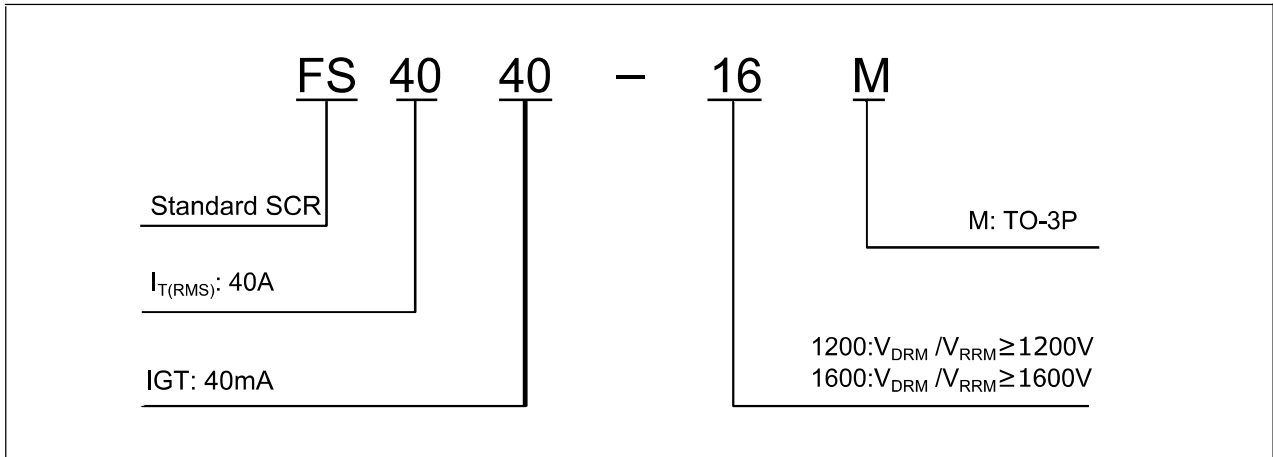


FIG.6: Relative variations of gate trigger current holding current and latching current versus junction temperature



Ordering Information



TO-3P Insulated Package Information

