

40A Sensitive SCRs

Product Summary

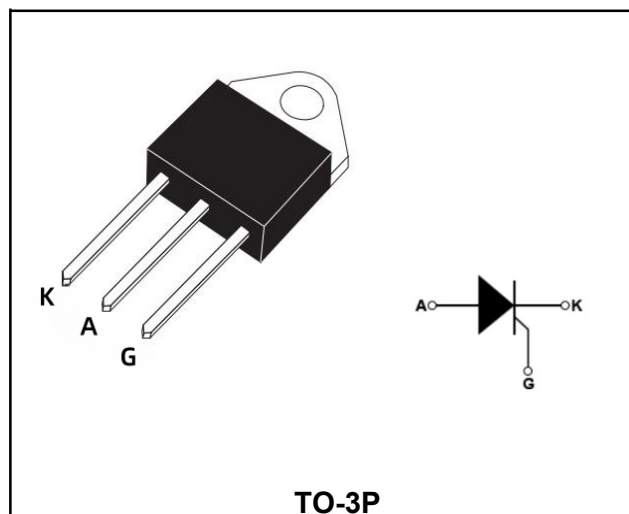
Symbol	Value	Unit
$I_{T(RMS)}$	40	A
$V_{DRM} V_{RRM}$	1200/1600	V
V_{TM}	1.5	V

Features

- ◆ 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



Absolute maximum ratings ($T_a=25^{\circ}C$ 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 ($t_p=10ms$)	I^2t	720	A
Critical rate of rise of on-state current ($I_G = 2 \times I_{GT}$)	di/dt	150	A/ μs
Peak gate current	I_{GM}	4	A
Average gate power dissipation	$P_G (AV)$	5	W
Junction Temperature	T_J	$-40 \sim +125$	$^{\circ}C$
Storage Temperature	T_{STG}	$-40 \sim +150$	$^{\circ}C$

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_D/dt	$V_D=2/3V_{DRM}$ Gate Open $T_j=125^\circ C$	MIN.	1000	V/μs

STATIC CHARACTERISTICS

Forward "on" voltage	V_{TM}	$I_{TM}=32A$ $t_p=380\mu s$	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 μA
Repetitive Peak Reverse Current	I_{RRM}		$T_j=125^\circ C$	MAX.	4 mA

THERMAL RESISTANCES

Thermal resistance	$R_{th(j-c)}$	Junction to case	TYP.	60	$^\circ C/W$
	$R_{th(j-a)}$	Junction to ambient	TYP.	0.9	$^\circ C/W$

Ordering Information

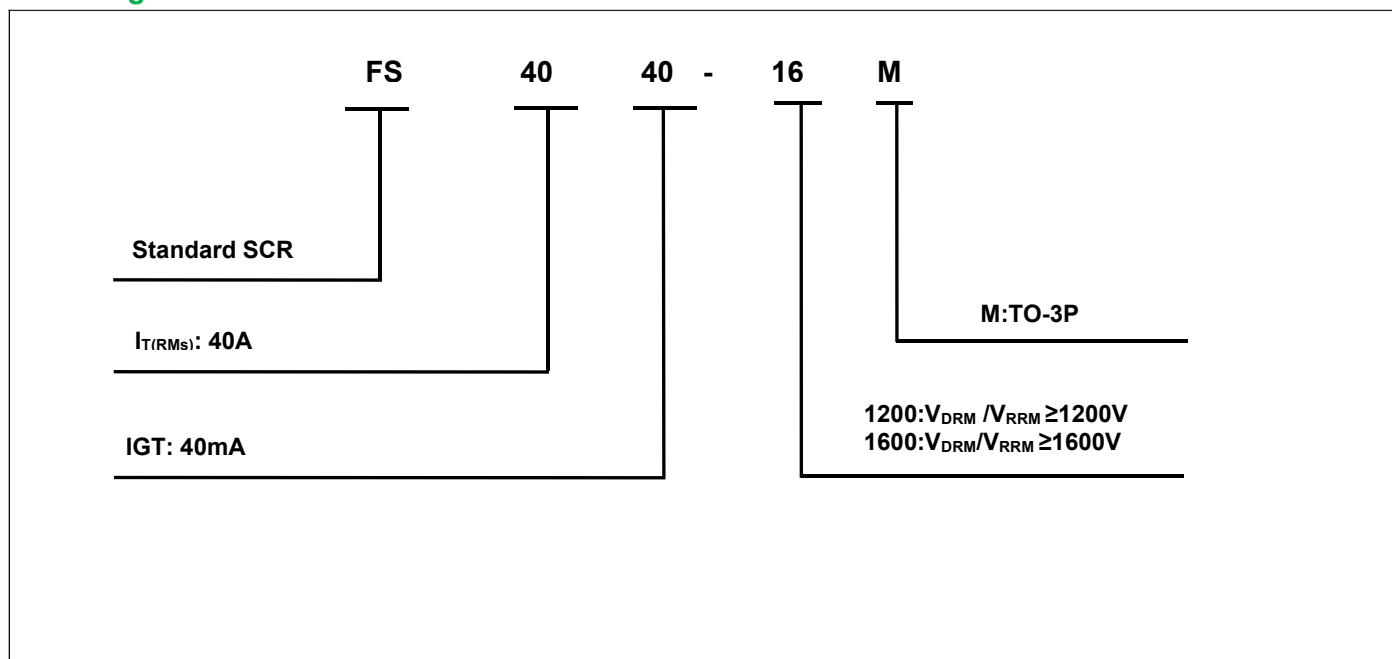


FIG.1 Maximum power dissipation versus Average on-state current

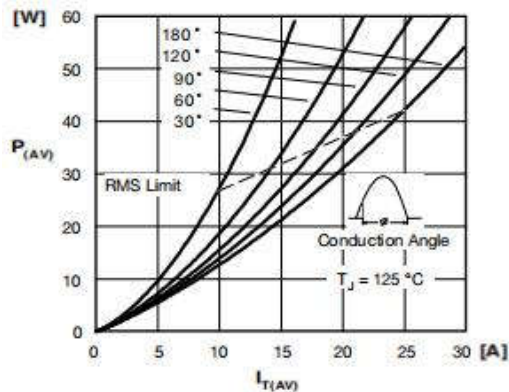


FIG.2: on-state current versus case temperature

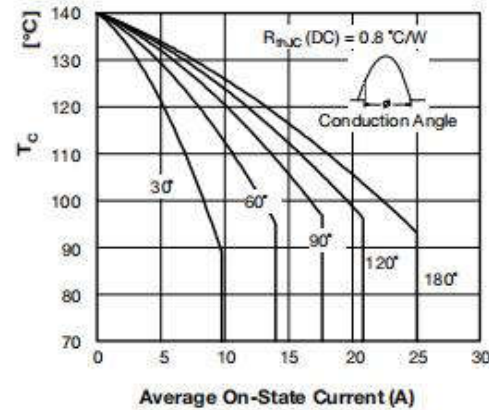


FIG.3: Surge peak on-state current versus number of cycles

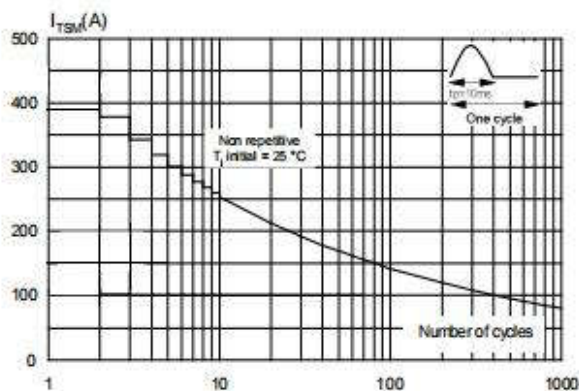


FIG.4: On-state characteristics (maximum values)

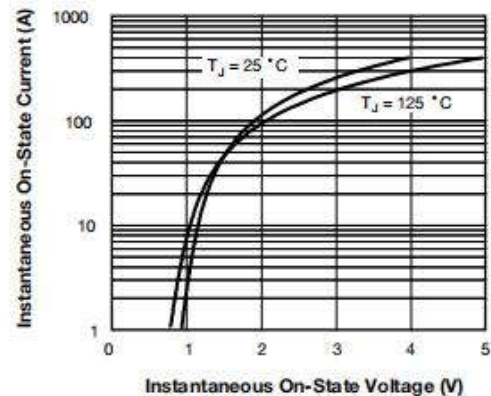


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of $I_2 t$ ($dI/dt < 50\text{A}/\mu\text{s}$)

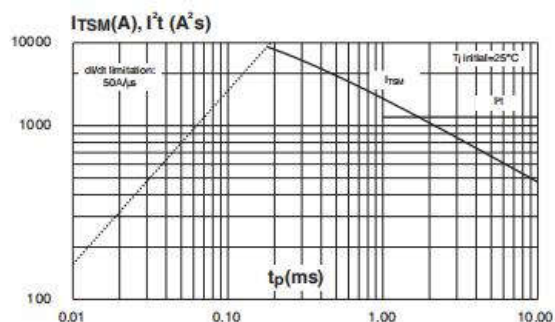
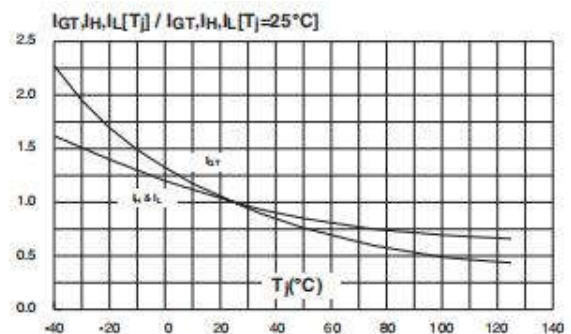
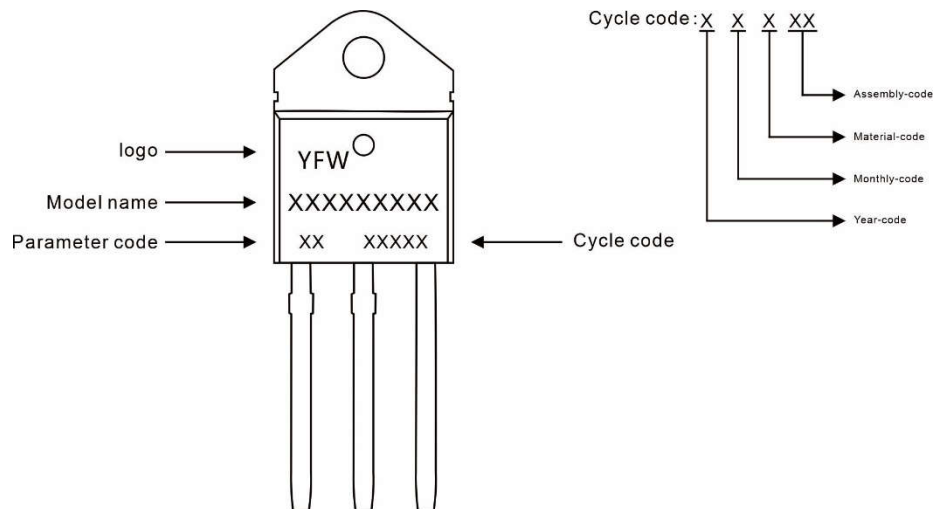


FIG.6: Relative variations of gate trigger current holding current and latching current versus junction temperature



Marking Diagram



Ordering information

Model name	Package	Base Quantity	Packing Quantity
FS4040-XXM	TO-3P	30pcs/tube	600PCS/Box 2400PCS/Carton

Package Dimensions

TO-3P(Insulated)

Symbol	Dimensions in mm		Dimensions in Inch	
	Min.	Max.	Min.	Max.
A	14.9	15.35	0.587	0.604
B	4.1	4.65	0.161	0.183
C	20.21	20.75	0.796	0.798
D	1.12	1.32	0.044	0.052
E	5.35	5.62	0.211	0.221
H	7.85	8.22	0.309	0.324
K	2.71	2.92	0.107	0.115
L	2.5	3.2	0.098	0.126
L1	15.02	15.55	0.591	0.612
T	4.38	4.65	0.172	0.183
T1	1.42	1.62	0.056	0.064
T2	0.52	0.68	0.021	0.027
ΦR	4.12	4.31	0.162	0.170

Disclaimer

The information presented in this document is for reference only. GuangDong Youfeng Microelectronics Co.,Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise. The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), YFW or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale. This publication supersedes & replaces all information previously supplied. For additional information, please visit our website <https://www.yfwdiode.com>, or consult YFW sales office for further assistance.