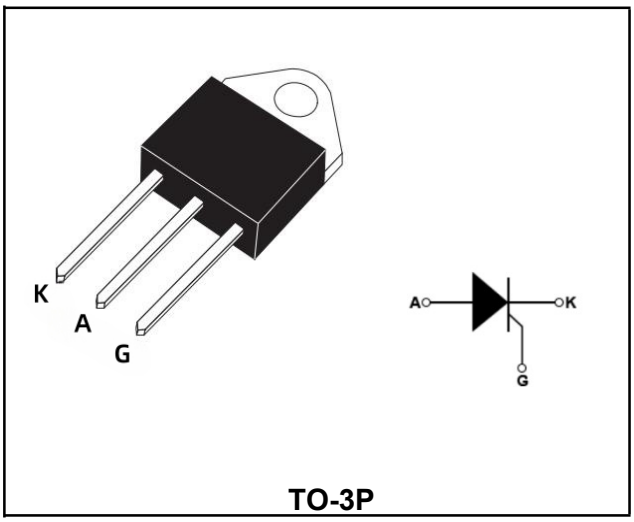
40A SCRs

Product Summary

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



TO-3P

Features

- ♦On-state rms current, IT(RMS) 40A
- ♦Repetitive peak off-state voltage, VDRM/VRRM 1200/1600V
- ♦Triggering gate current, IGT 40 mA

Application

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

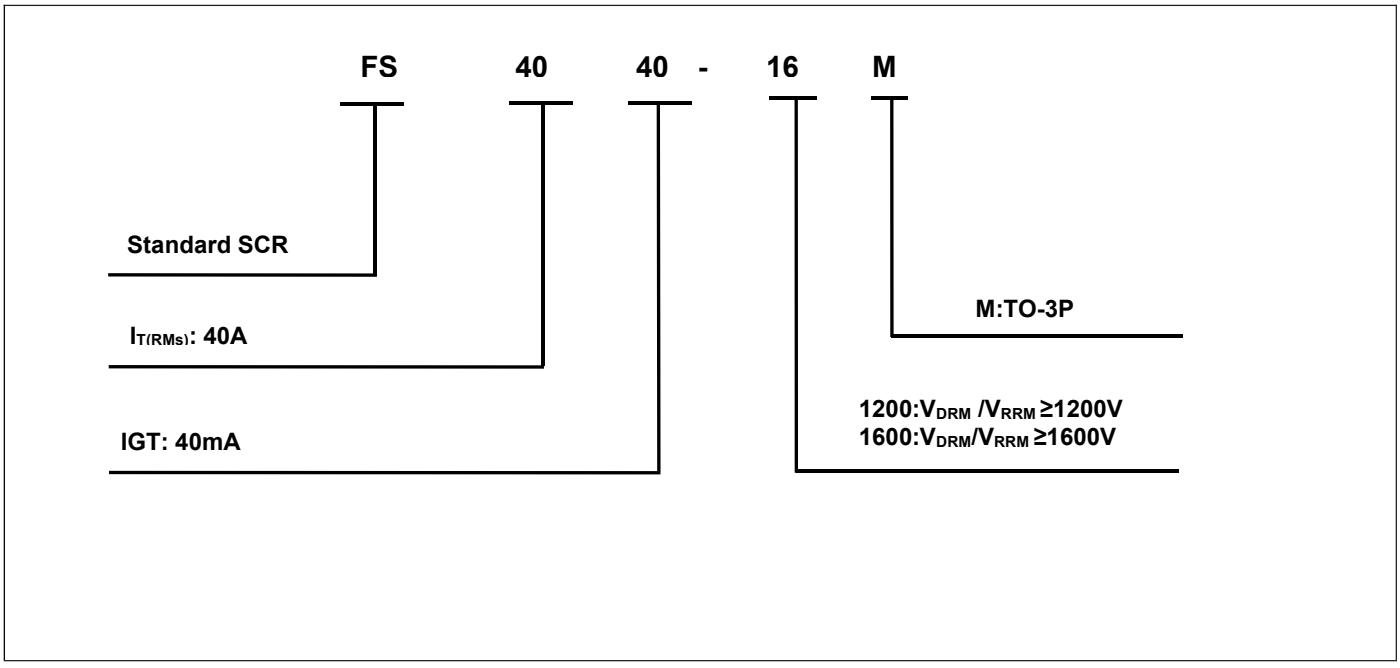
Absolute maximum ratings (Ta=25°C unless otherwise noted)

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 x 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~+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.	35	mA
Gate trigger voltage	V_{GT}			MAX.	1.5	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.	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 Tj=125°C		MIN.	1000	V/μs
STATIC CHARACTERISTICS						
Forward "on" voltage	V_{TM}	I_{TM} =32A tp=380μs		MAX.	1.5	V
Repetitive Peak Off-State Current	I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_j=25°C	MAX.	10	μA
Repetitive Peak Reverse Current	I_{RRM}		T_j=125°C	MAX.	4	mA
THERMAL RESISTANCES						
Thermal resistance	Rth(j-c)	Junction to case		TYP.	60	°C/W
	Rth(j-a)	Junction to ambient		TYP.	0.9	°C/W

Ordering Information



Typical Characteristics

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

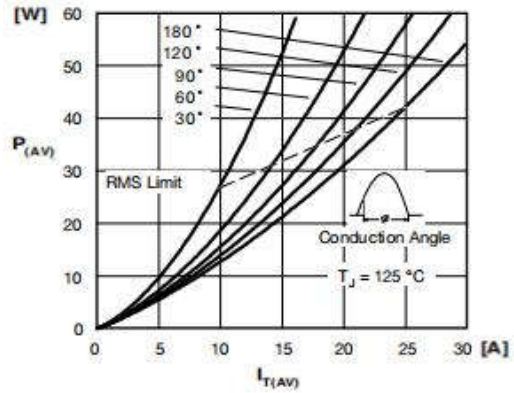


FIG.2: on-state current versus case temperature

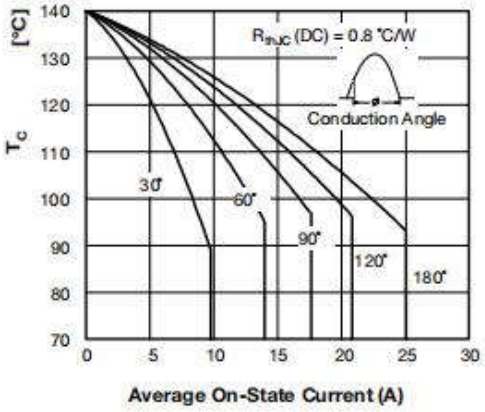


FIG.3: Surge peak on-state current versus number of cycles

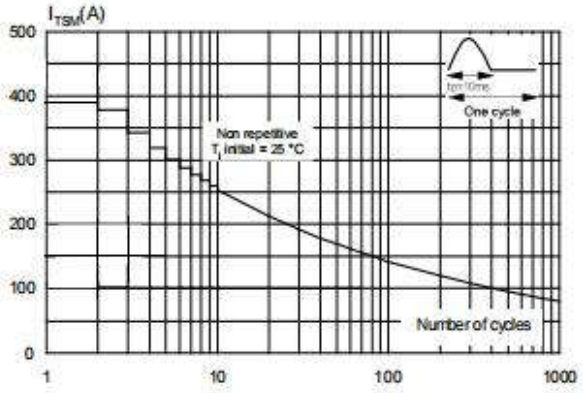


FIG.4: On-state characteristics (maximum values)

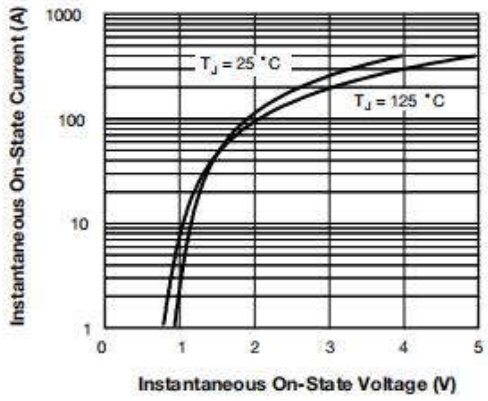


FIG.5: Non-repetitive surge peak on-state currentfor a sinusoidal pulse with width tp<10ms, and corresponding value of I2 t (dI/dt < 50A/µs)

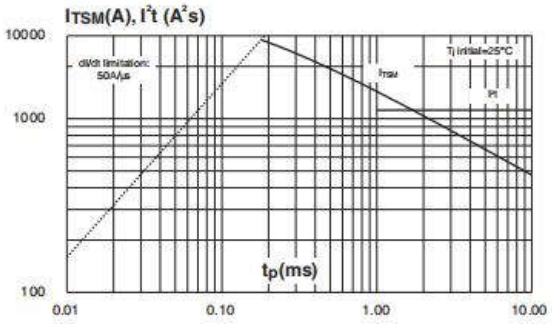
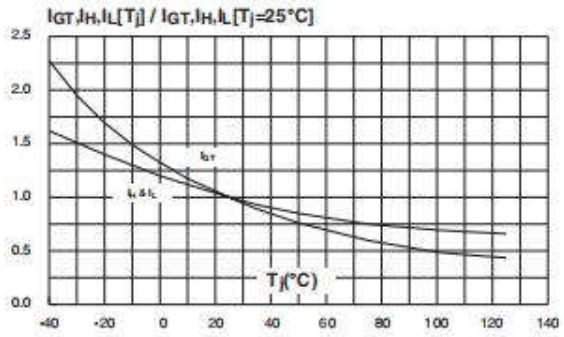
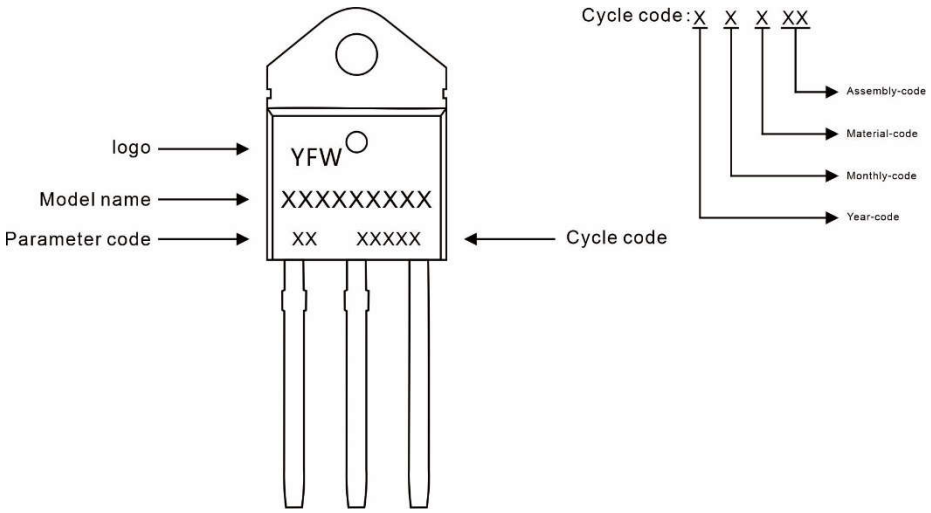


FIG.6: Relative variations of gate trigger current holding current and latching current versus junction temperature



Marking Diagram



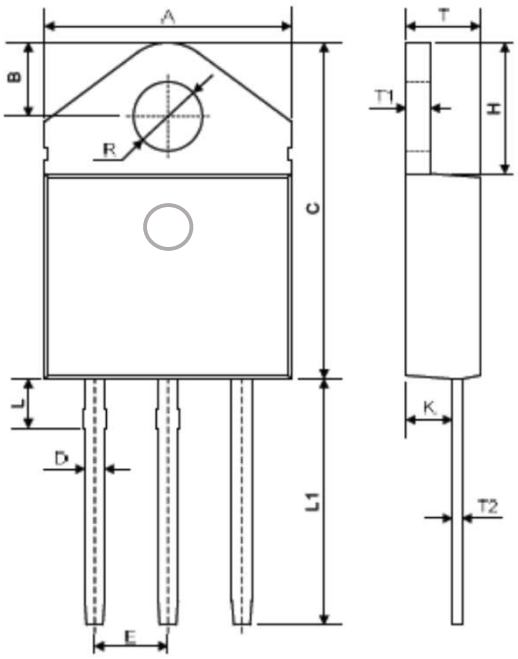
Ordering information

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

Package Dimensions

TO-3P(Insulated)

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

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