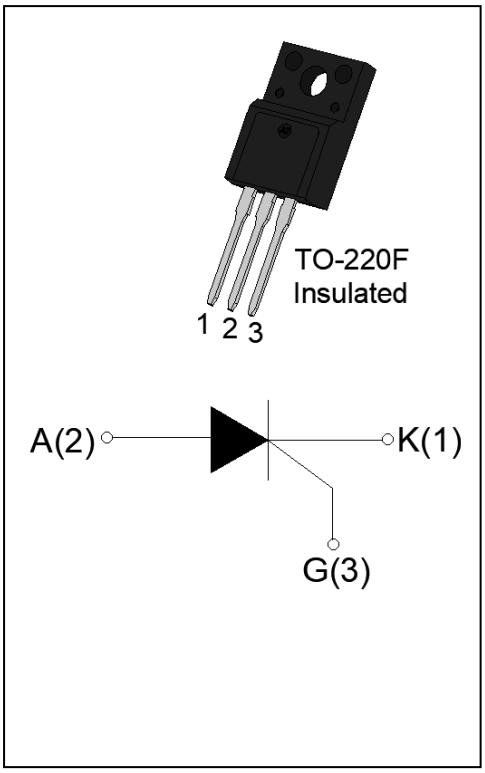
JX075F 12A Sensitive SCR

Rev.A.1.1

DESCRIPTION:

The JX075F SCR provides high dV/dt rate with strong resistance to electromagnetic interface. It is especially recommended for use on residual current circuit breaker, straight hair, igniter etc. From all three terminals to external heatsink, JX075F provides a rated insulation voltage of 2000 $V_{RMS.}$ complying with UL standards (File ref: E252906). Package TO-220F is RoHS compliant.



MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	12	A
V_{DRM} /V_{RRM}	800	V
I_{GT}	≤200	μA

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	℃
Operating junction temperature range	T_j	-40-110	℃
Repetitive peak off-state voltage (T_j=25℃)	V_{DRM}	800	V
Repetitive peak reverse voltage (T_j=25℃)	V_{RRM}	800	V
Average on-state current (T_C≤65℃)	$I_{T(AV)}$	7.5	A
RMS on-state current (T_C≤65℃)	$I_{T(RMS)}$	12	A
Non repetitive surge peak on-state current (t_p=10ms , T_j=25℃)	I_{TSM}	120	A
Non repetitive surge peak on-state current (t_p=8.3ms , T_j=25℃)		130	
I^2t value for fusing (t_p=10ms , T_j=25℃)	I^2t	72	A^2s
Critical rate of rise of on-state current (I_G=2×I_{GT} , f=100Hz , T_j=110℃)	dI/dt	100	A/μs
Peak gate current (t_p=20μs, T_j=110℃)	I_{GM}	4	A

Average gate power dissipation (T_j=110℃)	$P_{G(AV)}$	1	W
Peak gate power	P_{GM}	10	W
Peak pulse voltage (T_j=25℃; non-repetitive,off-state;FIG.7)	V_{pp}	0.5	kV

ELECTRICAL CHARACTERISTICS (T_j=25℃ unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	V_D=12V R_L=33Ω	-	60	200	μA
V_{GT}		-	-	0.8	V
V_{GD}	V_D=V_{DRM} T_j=110℃	0.2	-	-	V
I_L	I_G=1.2 I_{GT}	-	-	6	mA
I_H	I_T=0.05A	-	-	5	mA
dV/dt	V_D=540V T_j=25℃ R_{GK}=1kΩ	50	-	-	V/μs
	V_D=540V T_j=25℃ R_{GK}=220Ω	200	-	-	
t_{on}	I_G=10mA I_A=20mA I_R=2mA T_j=25℃	-	2	-	μs
t_{off}		-	70	-	μs

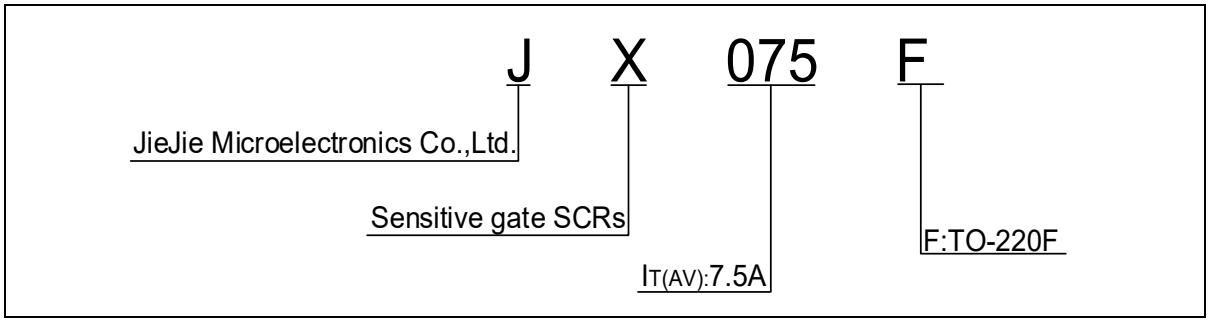
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	I_T=24A t_p=380μs	T_j=25℃	1.6	V
V_{TO}	Threshold voltage	T_j=110℃	0.9	V
R_D	Dynamic Resistance	T_j=110℃	0.02	Ω
I_{DRM}	V_D=V_{DRM} V_R=V_{RRM}	T_j=25℃	5	μA
I_{RRM}		T_j=110℃	0.5	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (DC)	2.8	℃/W
$R_{th(j-a)}$	junction to ambient (DC)	80	℃/W

ORDERING INFORMATION



MARKING

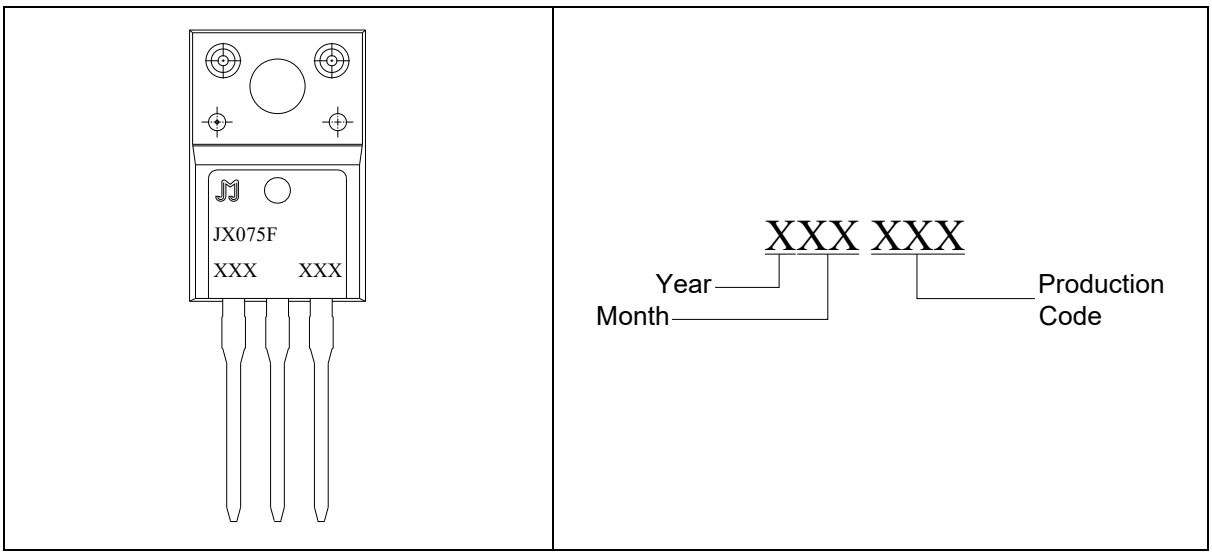


FIG.1: Maximum power dissipation versus RMS on-state current

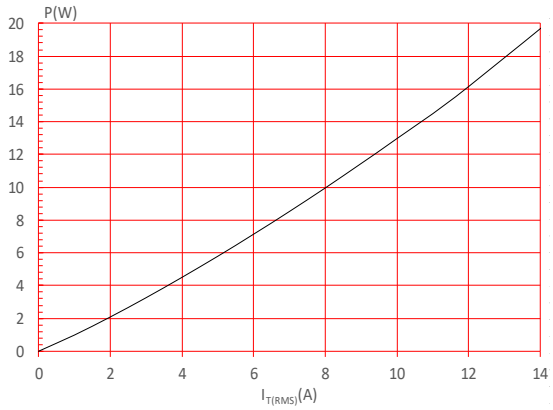


FIG.2: RMS on-state current versus case temperature

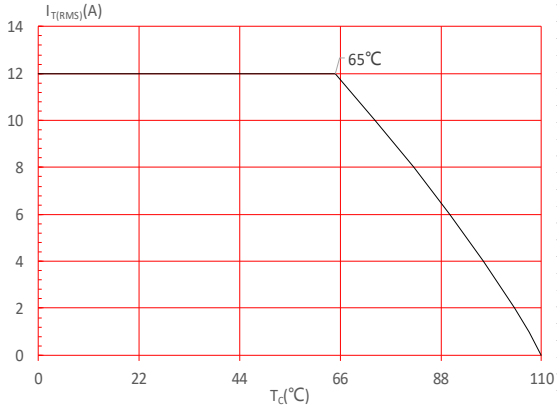


FIG.3: Surge peak on-state current versus number of cycles

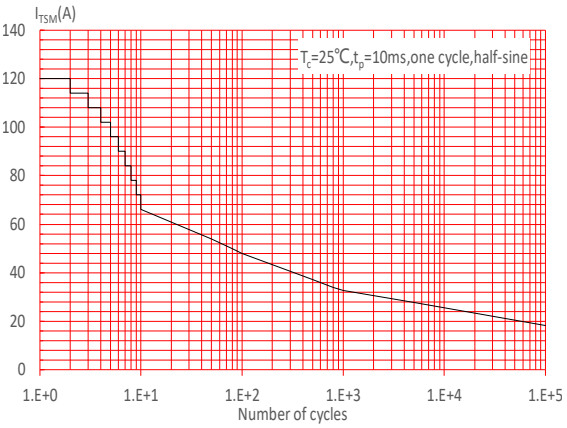


FIG.4: On-state characteristics

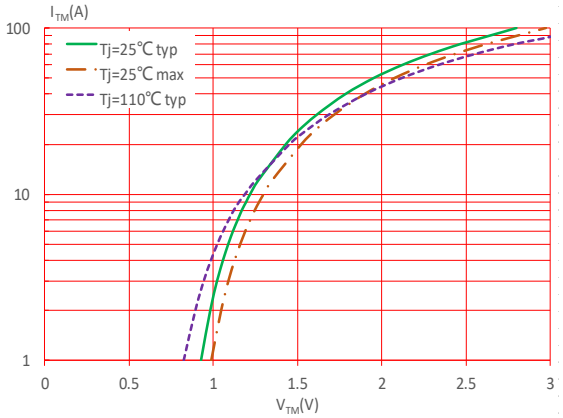


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width t_p<10ms, and corresponding value of I^2t (dI/dt<100A/μs)

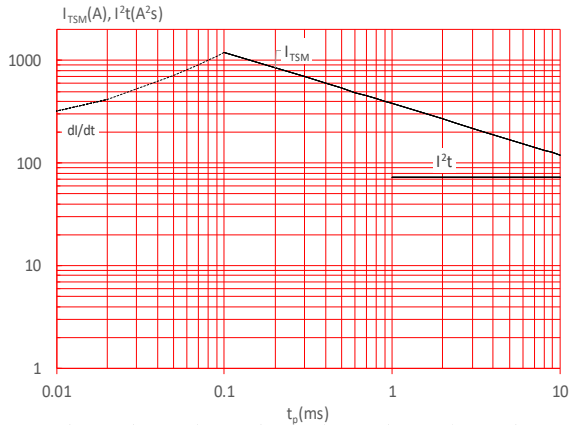


FIG.6: Relative variations of gate triggercurrent, holding current and latching current versus junction temperature

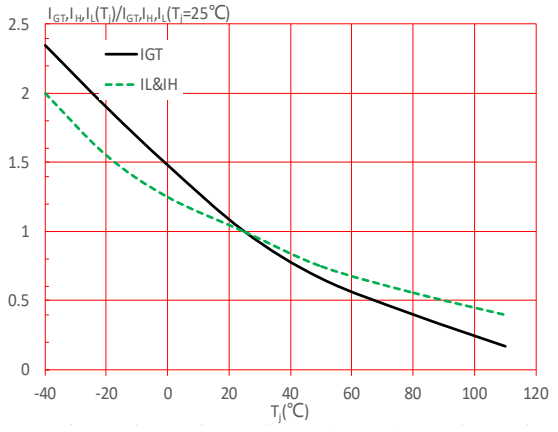
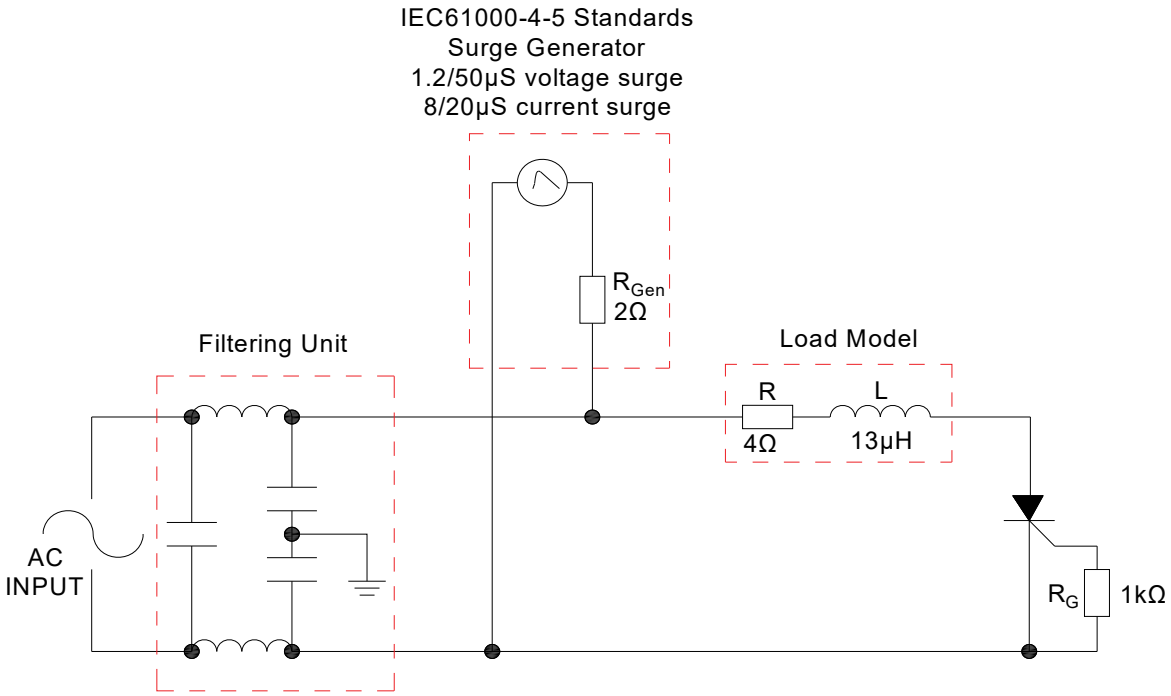


FIG.7：Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



LEAD FORMING AND SOLDERING

Refer to the application note “Assembly Instructions for Thyristors in Through-hole Package” released by JieJie Microelectronics.

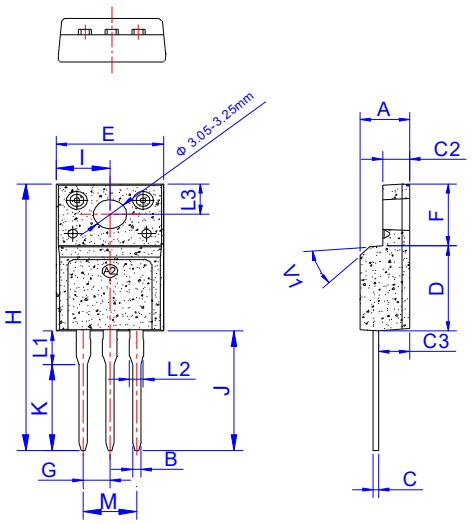
ORDERING INFORMATION

Order code	Voltage V_{DRM}/V_{RRM} (V)	IGT(μA)	Package	Base qty. (pcs)	Delivery mode
JX075F	800	≤200	TO-220F	50	Tube

Document Revision History

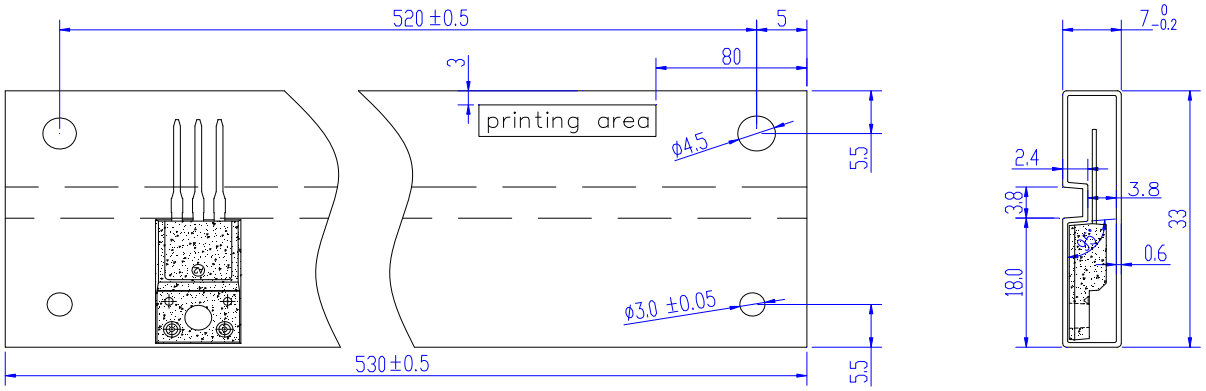
Date	Revision	Changes
Apr.12, 2023	A.1.0	Last update
Oct.10, 2025	A.1.1	Revise PACKAGE MECHANICAL DATA

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.50		4.90	0.177		0.193
B	0.74	0.80	0.83	0.029	0.031	0.033
C	0.47		0.65	0.019		0.026
C2	2.45		2.75	0.096		0.108
C3	2.60		3.00	0.102		0.118
D	8.80		9.30	0.346		0.366
E	9.80		10.4	0.386		0.410
F	6.40		6.80	0.252		0.268
G	2.40		2.70	0.094		0.106
H	28.0		29.8	1.102		1.173
I	4.80		5.20	0.189		0.205
J	12.60		13.00	0.496		0.512
K	9.60		10.00	0.378		0.394
L1	3.20		3.80	0.126		0.150
L2	1.14		1.70	0.045		0.067
L3	3.20		3.60	0.126		0.142
M	4.80		5.20	0.189		0.205
V1		45°			45°	

DELIVERY MODE



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220F	TUBE	50	1,000	5,000

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