



## JX075F 12A Sensitive SCR

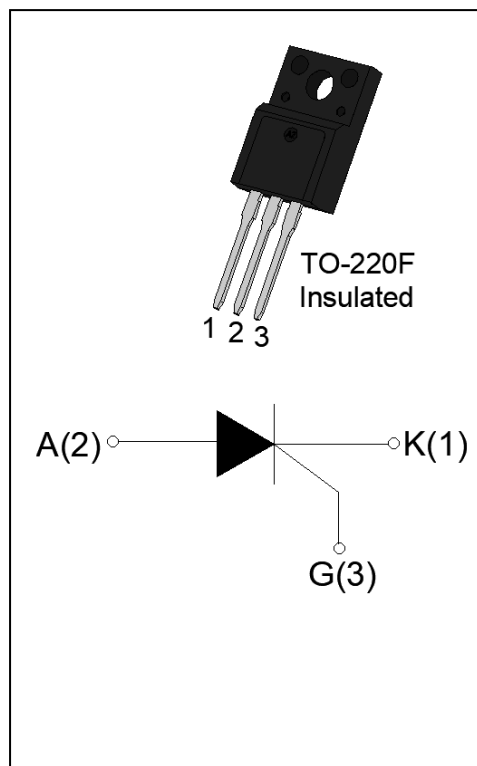
Rev.A.1.0

### 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
$I_{GT}$	$\leq 200$	$\mu A$



### ABSOLUTE MAXIMUM RATINGS

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

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

**ELECTRICAL CHARACTERISTICS** ( $T_j=25^\circ\text{C}$  unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
$I_{GT}$	$V_D=12\text{V } R_L=33\Omega$	-	60	200	$\mu\text{A}$
$V_{GT}$		-	-	0.8	V
$V_{GD}$	$V_D=V_{DRM} T_j=110^\circ\text{C}$	0.2	-	-	V
$I_L$	$I_G=1.2 I_{GT}$	-	-	6	mA
$I_H$	$I_T=0.05\text{A}$	-	-	5	mA
dV/dt	$V_D=540\text{V } T_j=25^\circ\text{C } R_{GK}=1\text{K}\Omega$	50	-	-	V/ $\mu\text{s}$
	$V_D=540\text{V } T_j=25^\circ\text{C } R_{GK}=220\Omega$	200	-	-	
$t_{on}$	$I_G=10\text{mA } I_A=20\text{mA } I_R=2\text{mA}$	-	2	-	$\mu\text{s}$
$t_{off}$	$T_j=25^\circ\text{C}$	-	70	-	$\mu\text{s}$

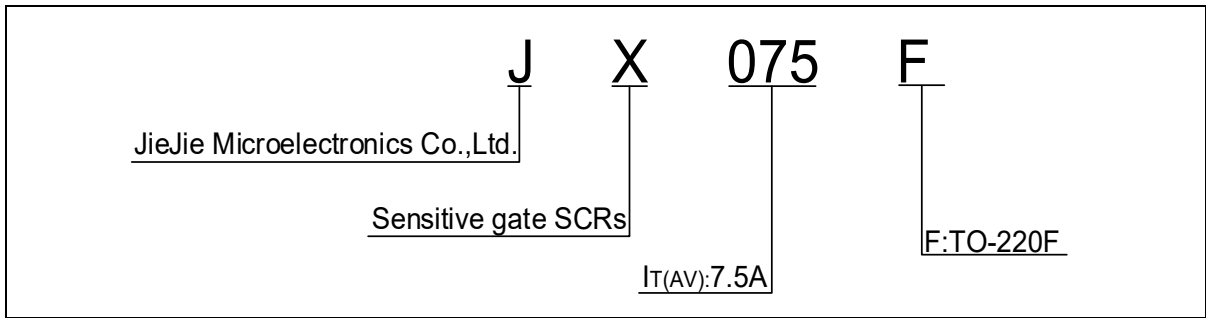
**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX.)	Unit
$V_{TM}$	$I_T=24\text{A } t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.6	V
$V_{TO}$	Threshold voltage	$T_j=110^\circ\text{C}$	0.9	V
$R_D$	Dynamic Resistance	$T_j=110^\circ\text{C}$	0.02	$\Omega$
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	5	$\mu\text{A}$
$I_{RRM}$		$T_j=110^\circ\text{C}$	0.5	mA

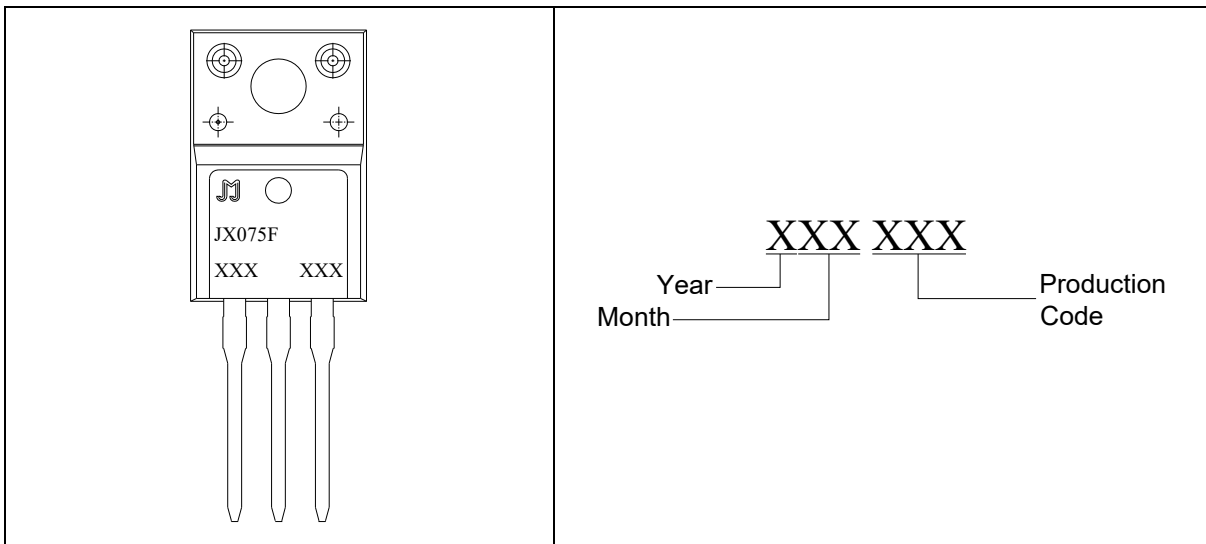
**THERMAL RESISTANCES**

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

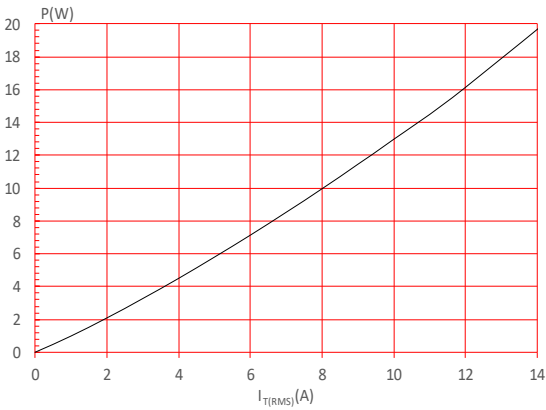
**ORDERING INFORMATION**



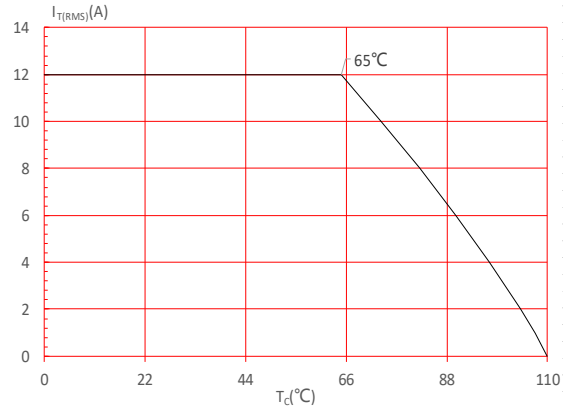
**MARKING**



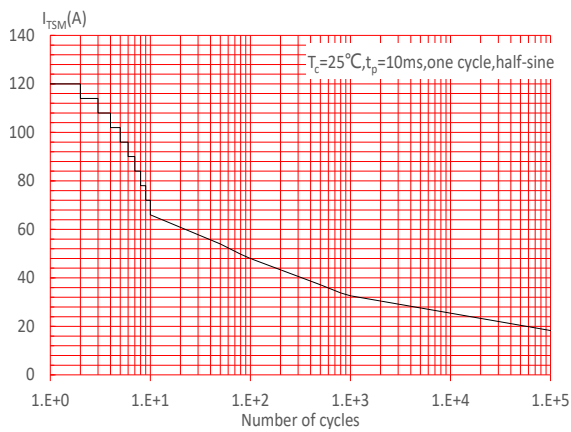
**FIG.1** Maximum power dissipation versus RMS on-state current



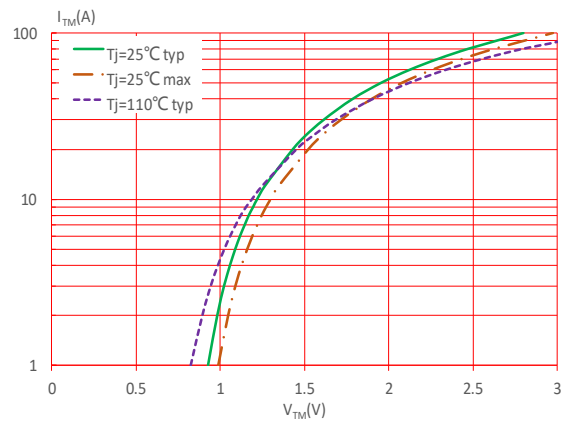
**FIG.2:** RMS on-state current versus case temperature



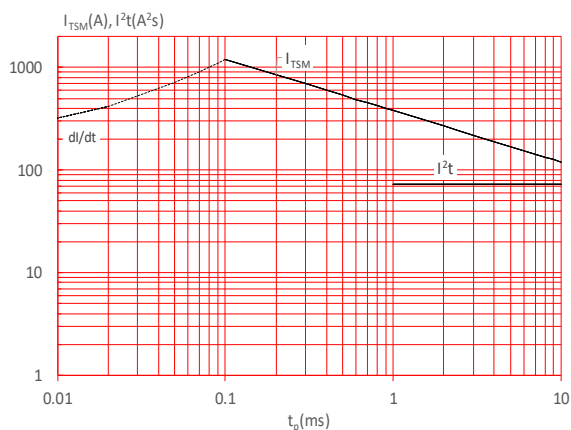
**FIG.3:** Surge peak on-state current versus number of cycles



**FIG.4:** On-state characteristics



**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I^2t$  ( $di/dt < 100\text{A}/\mu\text{s}$ )



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

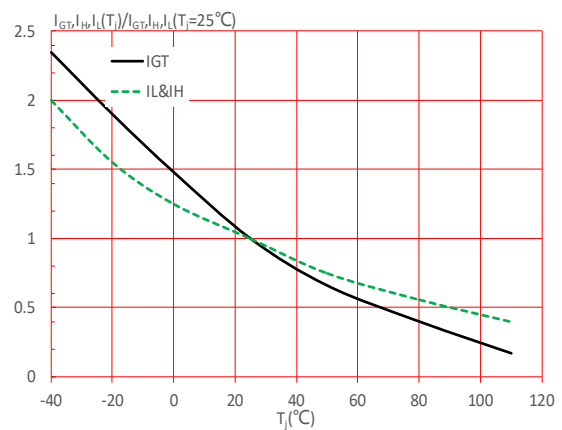
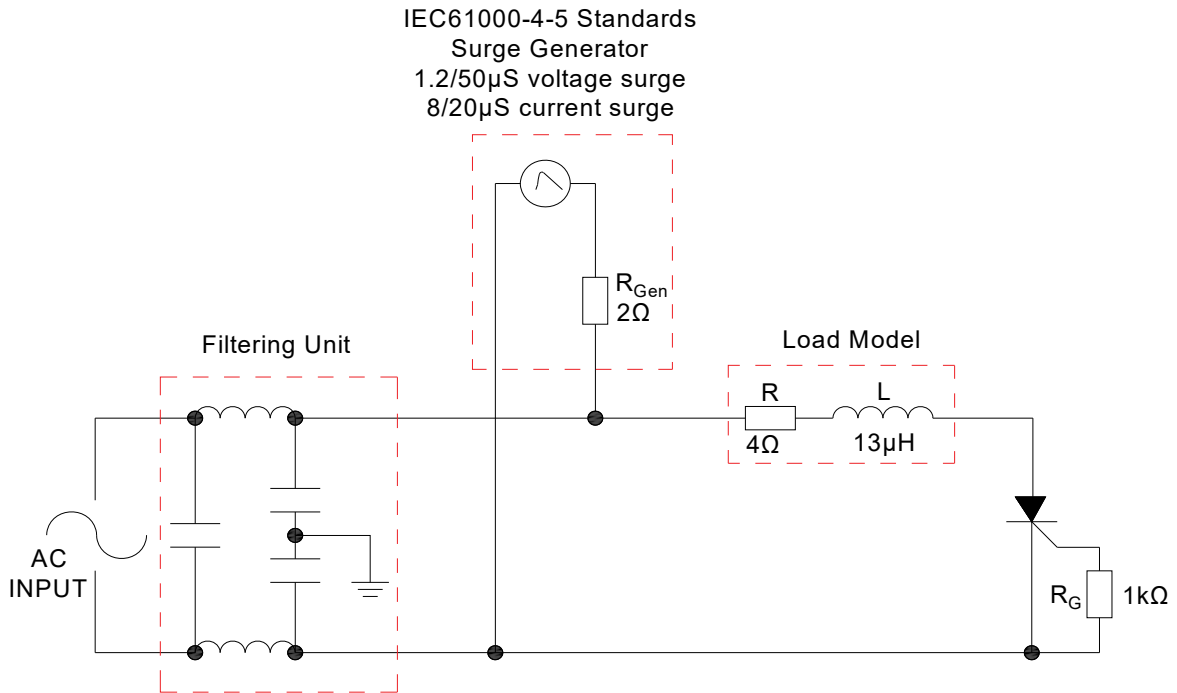


FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



## SHAPING AND SOLDERING PARAMETERS

Refer to 《Instructions for installation of plastic-sealed in-line power devices》 released by JieJie

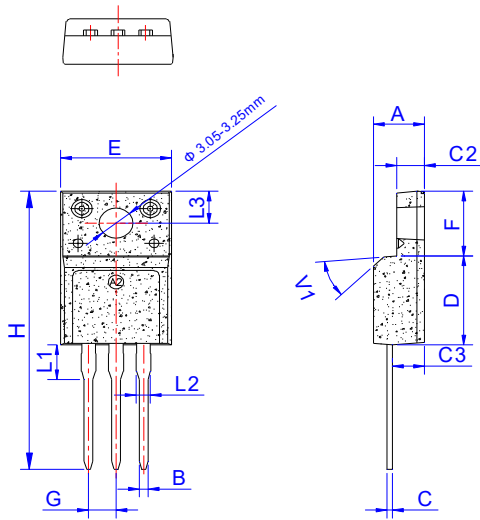
## ORDERING INFORMATION

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

## Document Revision History

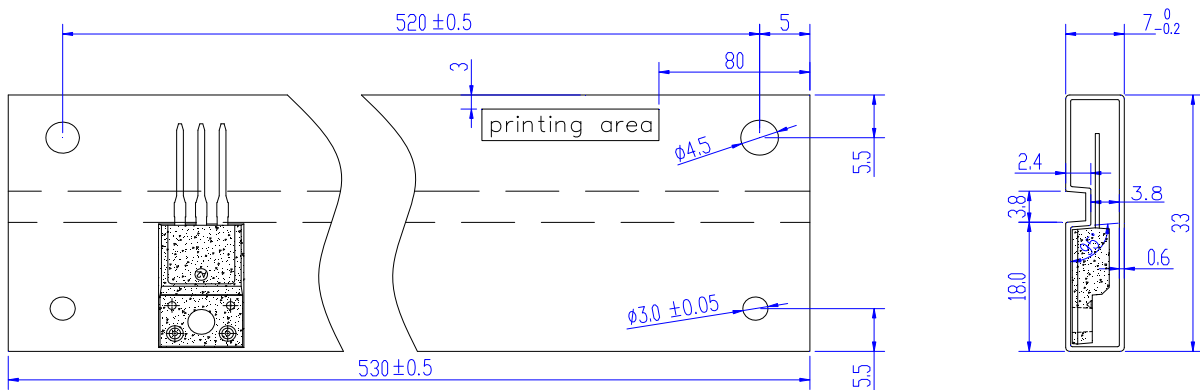
Date	Revision	Changes
Apr.12, 2023	A.1.0	Last update

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
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
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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