



## JX075F Sensitive gate SCRs

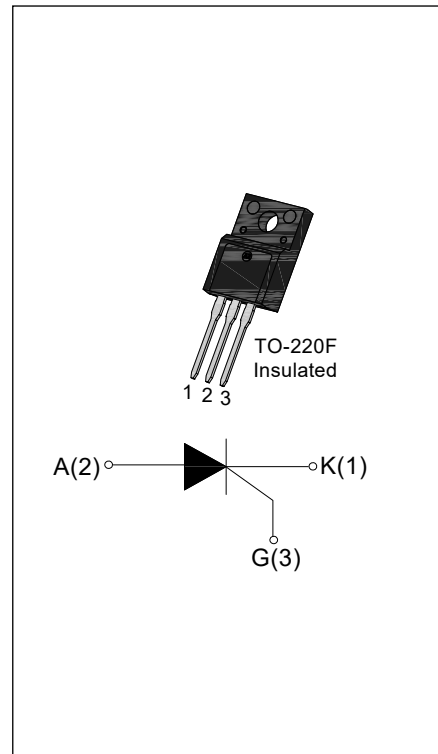
Rev.1

### DESCRIPTION:

The JX075F SCR provide high dv/dt rate with strong resistance to electromagnetic interface. They are 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<sub>RMS</sub>. Complying with UL standards (File ref: E252906). Packages TO-220F is RoHS compliant. (2011/65/EU)

### MAIN FEATURES

Symbol	Value	Unit
V <sub>DRM</sub> / V <sub>RRM</sub>	800	V
I <sub>T(RMS)</sub>	12	A
I <sub>GT</sub>	< 200	μA



### ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T <sub>stg</sub>	-40-150	°C
Operating junction temperature range		T <sub>j</sub>	-40-125 <sup>①</sup>	°C
Repetitive peak off-state voltage		V <sub>DRM</sub>	800	V
Repetitive peak reverse voltage		V <sub>RRM</sub>	800	V
RMS on-state current	TO-220F(Ins) (T <sub>C</sub> =85°C)	I <sub>T(RMS)</sub>	12	A
Non repetitive surge peak on-state current (tp=10ms)		I <sub>TSM</sub>	100	A
I <sup>2</sup> t value for fusing (tp=10ms)		I <sup>2</sup> t	50	A <sup>2</sup> s
Critical rate of rise of on-state current		di/dt	50	A/μs
Peak gate current (tp=20μs, T <sub>j</sub> =125°C)		I <sub>GM</sub>	4	A
Peak gate power (tp=20μs, T <sub>j</sub> =125°C)		P <sub>GM</sub>	3	W
Average gate power dissipation(T <sub>j</sub> =125°C)		P <sub>G(AV)</sub>	0.2	W

**NOTE 1:** When we parallel connect a ≤1KΩ resistor between Gate and Cathode, the T<sub>j</sub> can reach 125°C; if without this resistor, the T<sub>j</sub> only can reach 110°C.

**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
$V_{GD}$	$V_D=V_{DRM}$ $T_j=125^{\circ}\text{C}$	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	$V_D=2/3V_{DRM}$ $T_j=125^{\circ}\text{C}$ $R_{GK}=1\text{K}\Omega$	5	10	-	V/ $\mu\text{s}$

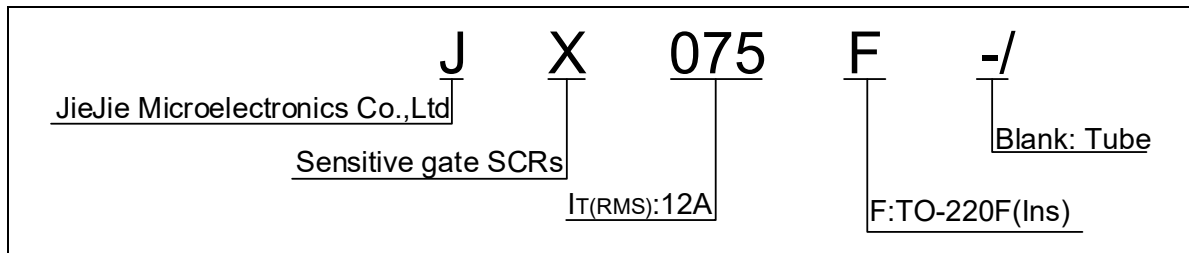
**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX)	Unit
$V_{TM}$	$I_{TM}=24\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.6	V
$I_{DRM}$	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	10	$\mu\text{A}$
$I_{RRM}$		$T_j=125^{\circ}\text{C}$	2	mA

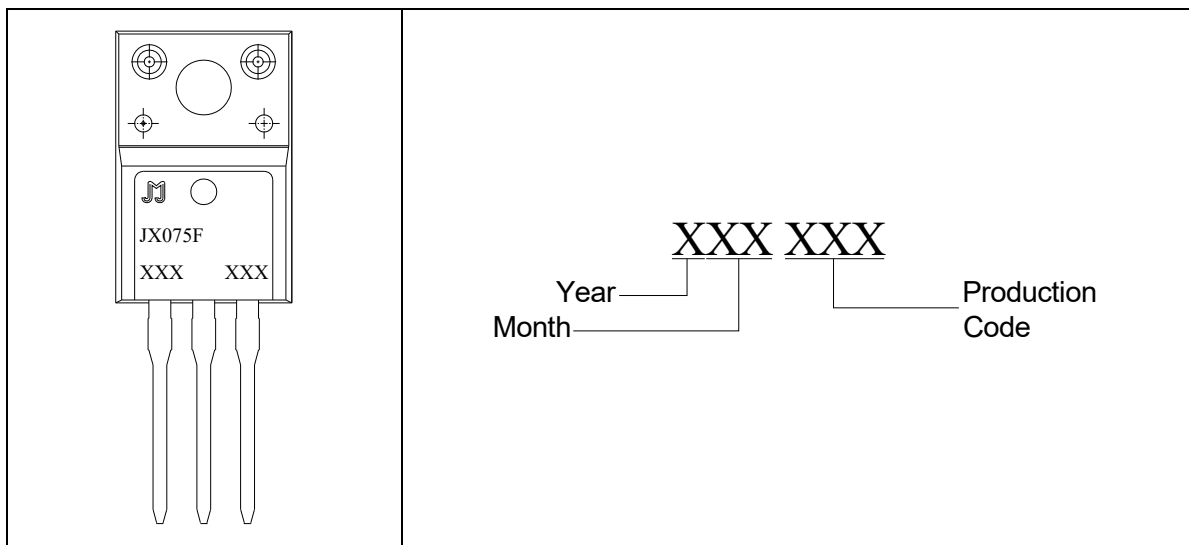
**THERMAL RESISTANCES**

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case	TO-220F(Ins)	2.3	$^{\circ}\text{C}/\text{W}$

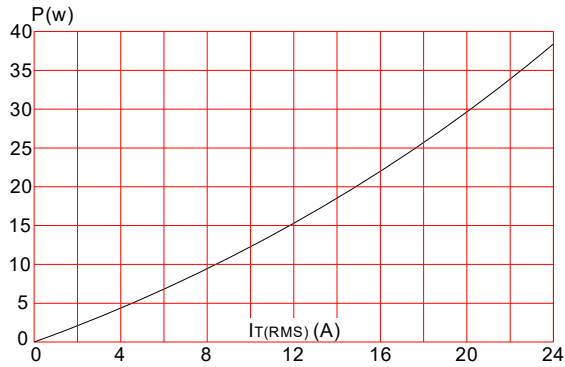
**ORDERING INFORMATION**



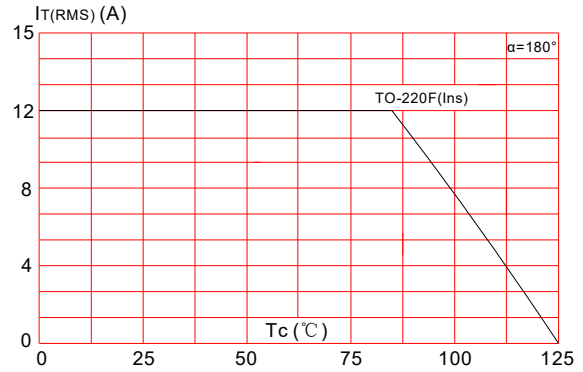
**MARKING**



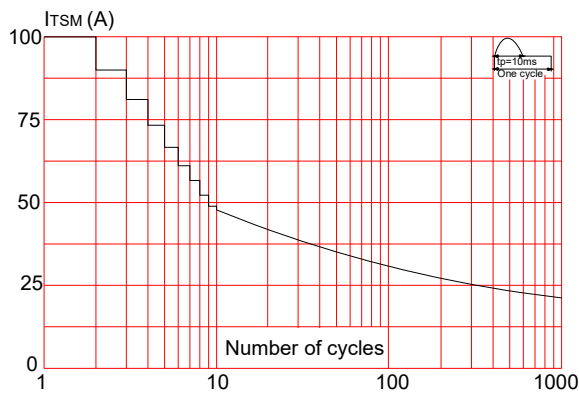
**FIG.1** Maximum power dissipation versus RMS on-state current



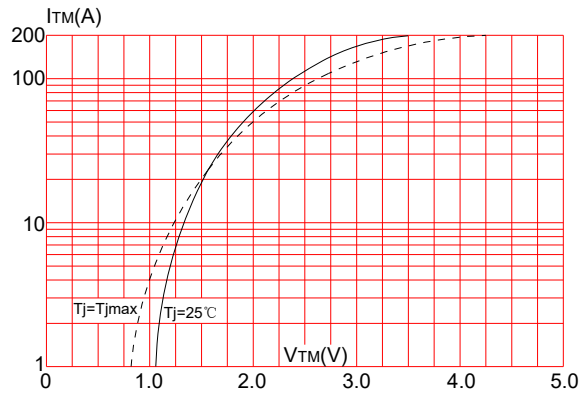
**FIG.2** RMS on-state current versus case temperature



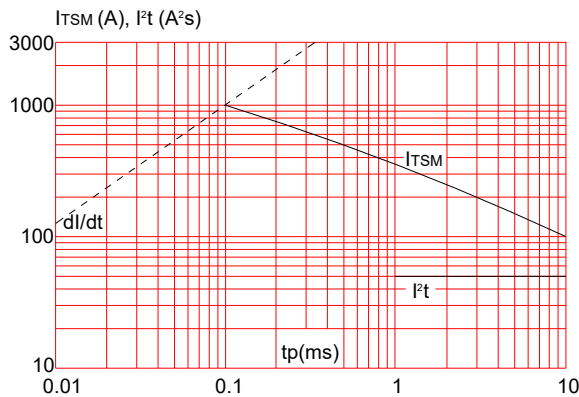
**FIG.3** Surge peak on-state current versus number of cycles



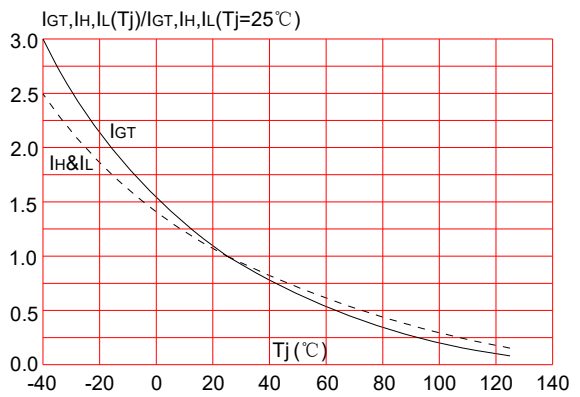
**FIG.4** On-state characteristics (maximum values)



**FIG.5** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$ , and corresponding value of  $I^2t$  ( $di/dt < 50\text{A}/\mu\text{s}$ )



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



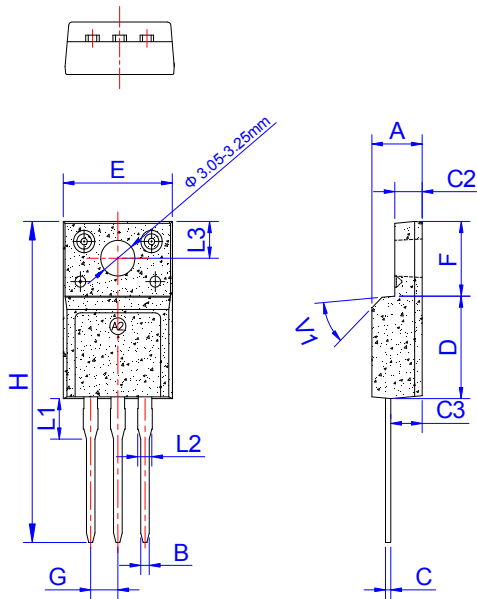
**ORDERING INFORMATION**

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

**Document Revision History**

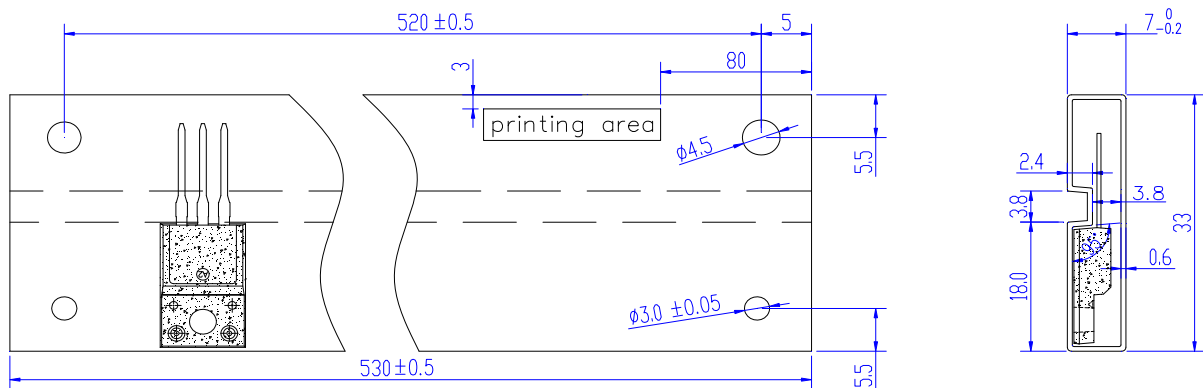
Date	Revision	Changes
Mar 18, 2022	1	Last update

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		3.63			0.143	
L2	1.14		1.70	0.045		0.067
L3		3.30			0.130	
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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