



## JX075 Series Sensitive gate SCRs

Rev.9.0

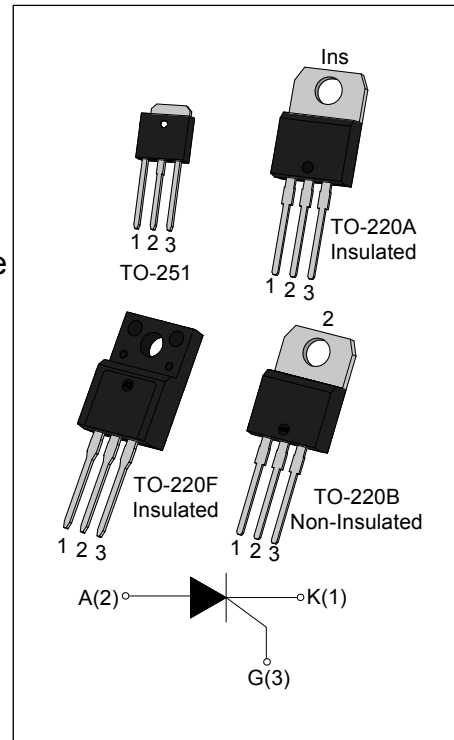
### DESCRIPTION:

The JX075 SCR series provide high dv/dt rate with strong resistance to electromagnetic interference. They are especially recommended for use on residual current circuit breaker, straight hair, igniter etc.

From all three terminals to external heatsink, JX075A & JX075F provides a rated insulation voltage of 2000 V<sub>RMS</sub>. All the packages mentioned are RoHS compliant. (2011/65/EU)

### MAIN FEATURES

Symbol	Value	Unit
V <sub>DSM</sub> / V <sub>RSM</sub>	1000	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	
Non-repetitive peak off-state voltage	V <sub>DSM</sub>	1000	V	
Non-repetitive peak reverse voltage	V <sub>RSM</sub>	1000	V	
RMS on-state current	I <sub>T(RMS)</sub>	TO-251/ TO-220B(Non-Ins) (T <sub>C</sub> =80°C)	12	A
		TO-220A(Ins)/ TO-220F(Ins) (T <sub>C</sub> =85°C)		
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, Tj=125°C)	I <sub>GM</sub>	1.2	A
Peak gate power (tp=20μs, Tj=125°C)	P <sub>GM</sub>	3	W
Average gate power dissipation(Tj=125°C)	P <sub>G(AV)</sub>	0.2	W

**NOTE 1:** When we parallel connect a  $\leq 1K\Omega$  resistor between Gate and Cathode, the Tj can reach 125°C; if without this resistor, the Tj only can reach 110°C.

### ELECTRICAL CHARACTERISTICS (Tj=25°C unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I <sub>GT</sub>	V <sub>D</sub> =12V R <sub>L</sub> =33Ω	-	60	200	μA
V <sub>GT</sub>		-	-	0.8	V
V <sub>GD</sub>	V <sub>D</sub> =V <sub>DRM</sub> Tj=125°C	0.2	-	-	V
I <sub>L</sub>	I <sub>G</sub> =1.2 I <sub>GT</sub>	-	-	6	mA
I <sub>H</sub>	I <sub>T</sub> =0.05A	-	-	5	mA
dV/dt	V <sub>D</sub> =536V Tj=125°C R <sub>GK</sub> =100Ω	50	100	-	V/μs

### STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V <sub>TM</sub>	I <sub>TM</sub> =24A tp=380μs	Tj=25°C	1.6	V
I <sub>DRM</sub>	V <sub>D</sub> =V <sub>DRM</sub> V <sub>R</sub> =V <sub>RRM</sub>	Tj=25°C	10	μA
I <sub>RRM</sub>		Tj=125°C	2	mA

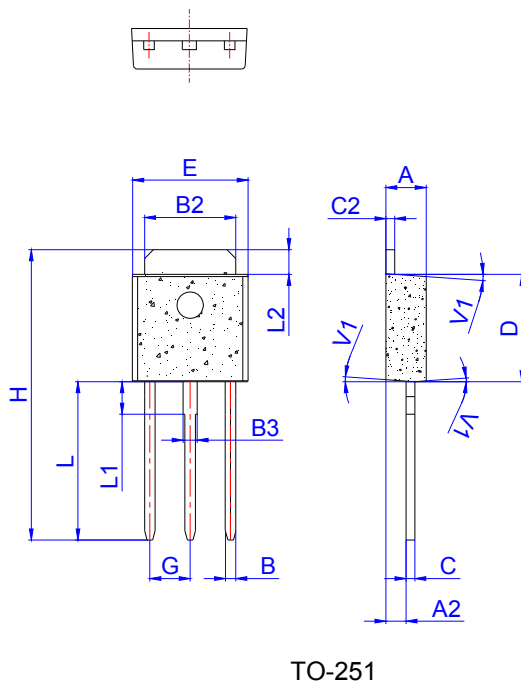
### THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
R <sub>th(j-c)</sub>	junction to case	TO-251/ TO-220B(Non-Ins)	2.5	°C/W
		TO-220A(Ins)/ TO-220F(Ins)	2.3	

**ORDERING INFORMATION**

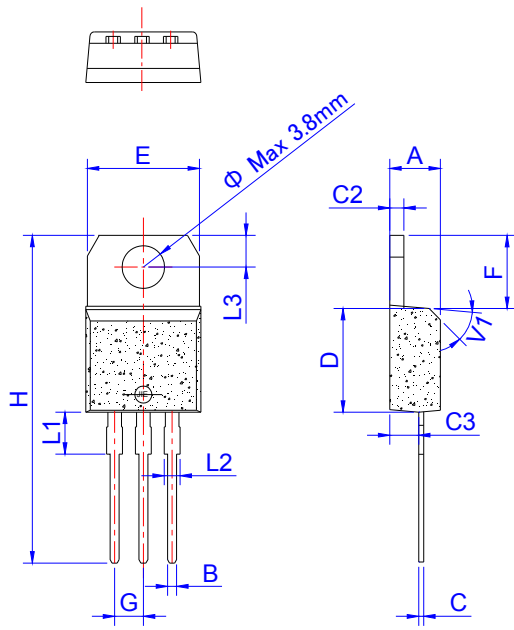
<p><b>J</b></p> <p>JieJie Microelectronics Co.,Ltd</p>	<p><b>X</b></p> <p>Sensitive gate SCRs</p>	<p><b>075</b></p> <p><math>I_{T(RMS)}:12A</math></p>	<p><b>H</b></p> <p>H:TO-251                  F:TO-220F(Ins)                  A:TO-220A(Ins)                  B:TO-220B(Non-Ins)</p>
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**PACKAGE MECHANICAL DATA**

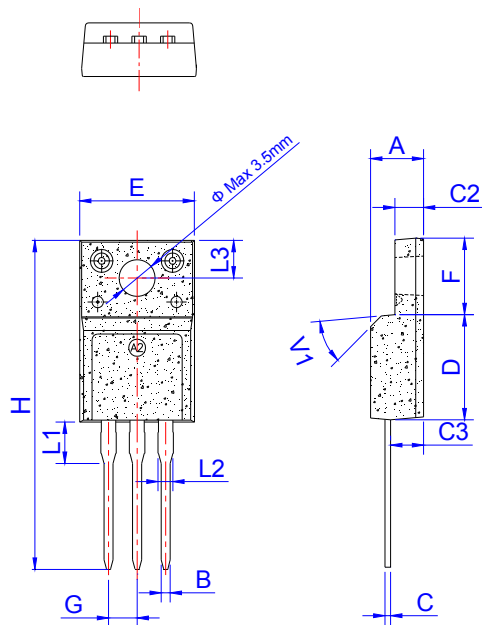


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.90		1.20	0.035		0.047
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
B3	0.76		0.85	0.030		0.033
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.70	0.252		0.264
G		2.30			0.091	
H	16.0		17.0	0.630		0.669
L	8.90		9.40	0.350		0.370
L1	1.80		1.90	0.071		0.075
L2	1.37		1.50	0.054		0.059
V1		4°			4°	

PACKAGE MECHANICAL DATA

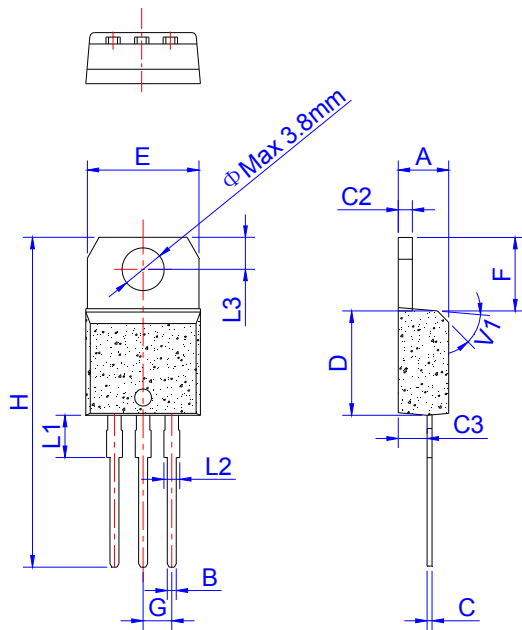


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.60		10.4	0.378		0.409
F	6.20		6.60	0.244		0.260
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	



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		2.54			0.1	
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°	

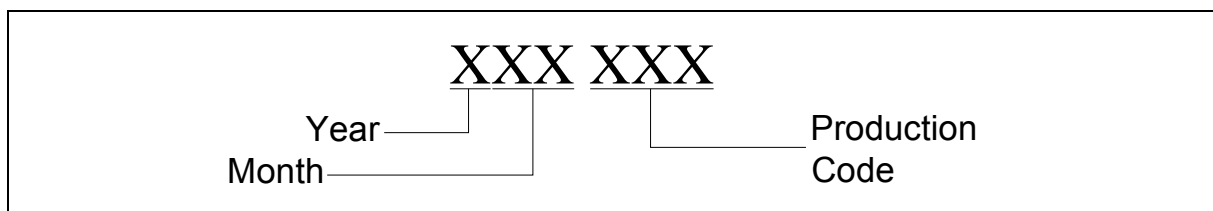
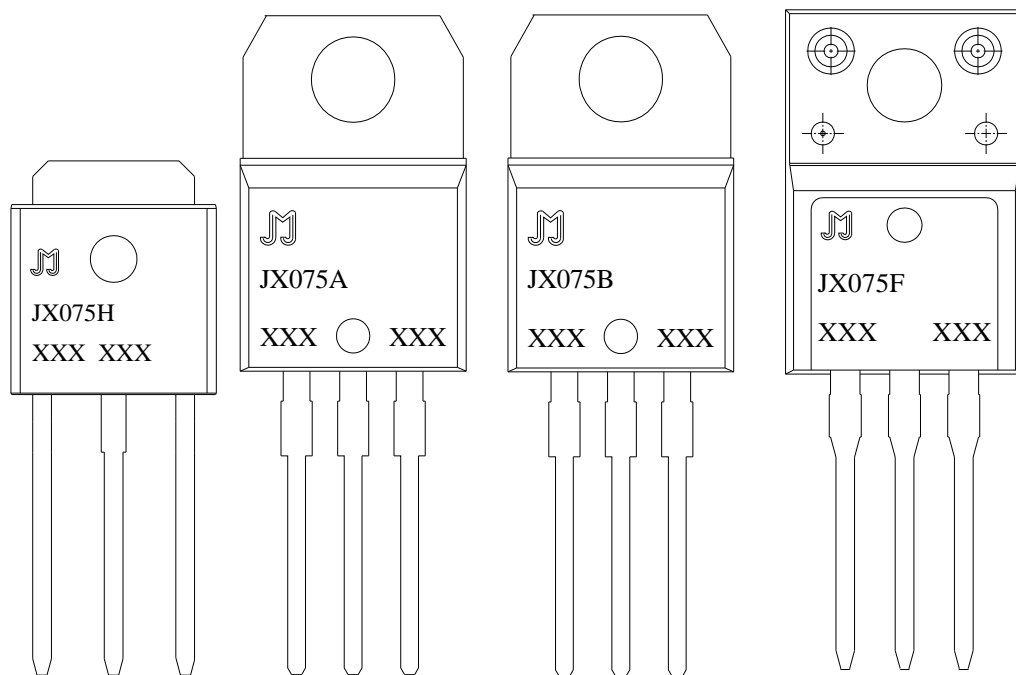
**PACKAGE MECHANICAL DATA**



TO-220A Ins

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.40		4.60	0.173		0.181
B	0.61		0.88	0.024		0.035
C	0.46		0.70	0.018		0.028
C2	1.21		1.32	0.048		0.052
C3	2.40		2.72	0.094		0.107
D	8.60		9.70	0.339		0.382
E	9.80		10.4	0.386		0.409
F	6.55		6.95	0.258		0.274
G		2.54			0.1	
H	28.0		29.8	1.102		1.173
L1		3.75			0.148	
L2	1.14		1.70	0.045		0.067
L3	2.65		2.95	0.104		0.116
V1		45°			45°	

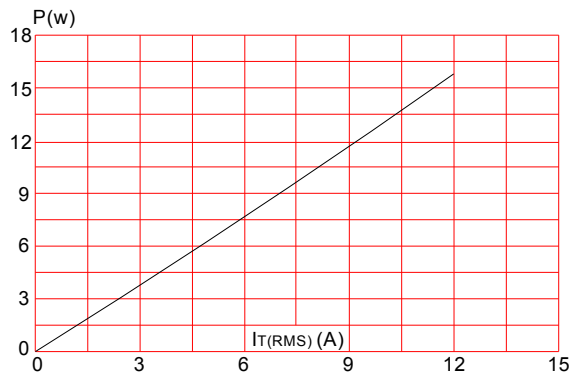
**MARKING**



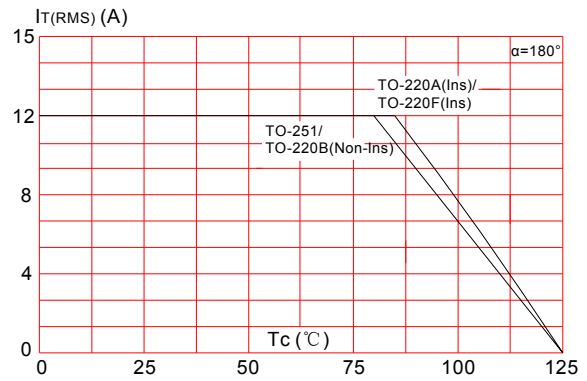
**PACKAGE INFORMATION**

PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-220A	TUBE	50	1,000	8,000
TO-220B	TUBE	50	1,000	8,000
TO-220F	TUBE	50	1,000	8,000
TO-251	TUBE	80	4,000	32,000

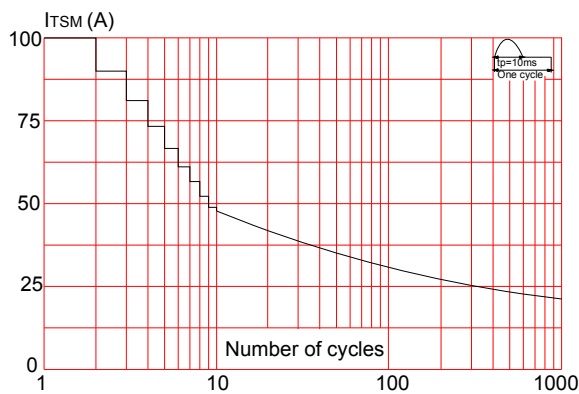
**FIG.1** Maximum power dissipation versus RMS on-state current



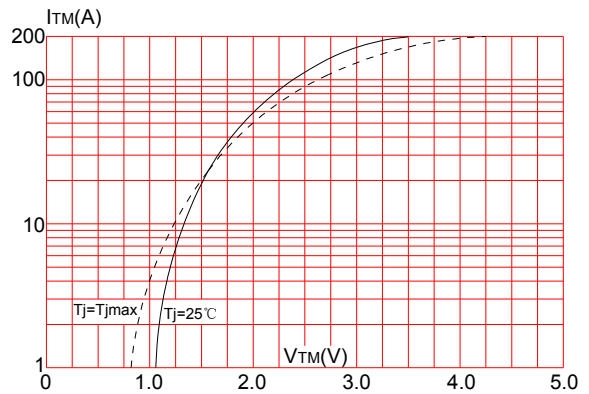
**FIG.2:** RMS on-state current versus case temperature



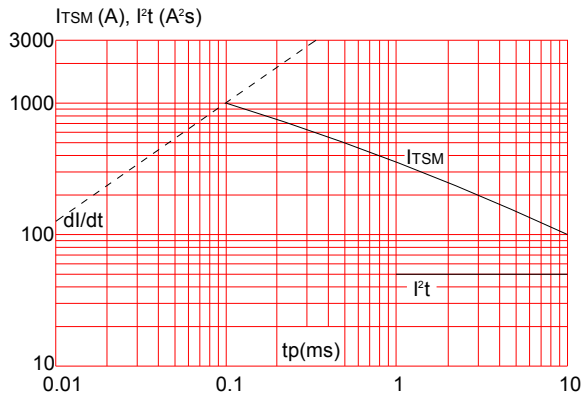
**FIG.3:** Surge peak on-state current versus number of cycles



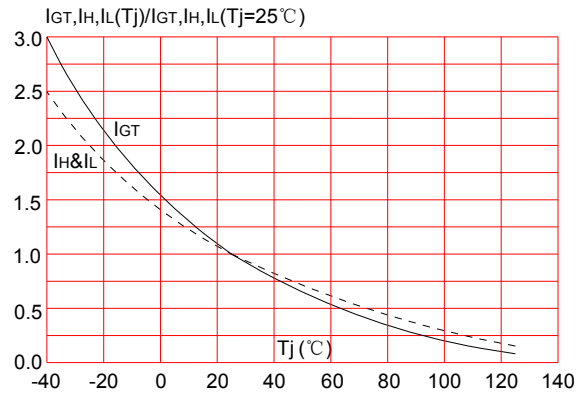
**FIG.4:** On-state characteristics (maximum values)




**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



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