



JX075 Series Sensitive gate SCRs

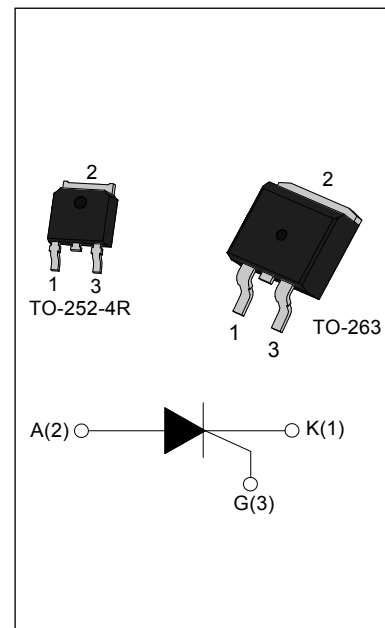
Rev.8.0

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. Package TO-252-4R & TO-263 are RoHS compliant. (2011/65/EU)

MAIN FEATURES

Symbol	Value	Unit
V_{DSM}/V_{RSM}	1000	V
$I_{T(RMS)}$	12	A
I_{GT}	≤ 200	μA



ABSOLUTE MAXIMUM RATINGS

Parameter		Symbol	Value	Unit
Storage junction temperature range		T_{stg}	-40-150	$^{\circ}C$
Operating junction temperature range		T_j	-40-125 ^①	$^{\circ}C$
Non-repetitive peak off-state voltage		V_{DSM}	1000	V
Non-repetitive peak reverse voltage		V_{RSM}	1000	V
RMS on-state current	TO-252-4R ($T_c=80^{\circ}C$)	$I_{T(RMS)}$	12	A
	TO-263 ($T_c=95^{\circ}C$)			
Non repetitive surge peak on-state current ($t_p=10ms$)		I_{TSM}	100	A
I^2t value for fusing ($t_p=10ms$)		I^2t	50	A^2s
Critical rate of rise of on-state current		di/dt	50	$A/\mu s$
Peak gate current ($t_p=20\mu s, T_j=125^{\circ}C$)		I_{GM}	1.2	A
Peak gate power ($t_p=20\mu s, T_j=125^{\circ}C$)		P_{GM}	3	W
Average gate power dissipation($T_j=125^{\circ}C$)		$P_{G(AV)}$	0.2	W

NOTE 1: When we parallel connect a $\leq 1K\Omega$ resistor between Gate and Cathode, the T_j can reach $125^{\circ}C$; if without this resistor, the T_j only can reach $110^{\circ}C$.

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	μA
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	$V_D=536\text{V } T_j=125^{\circ}\text{C } R_{GK}=100\Omega$	50	100	-	V/ μs

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	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	2	mA

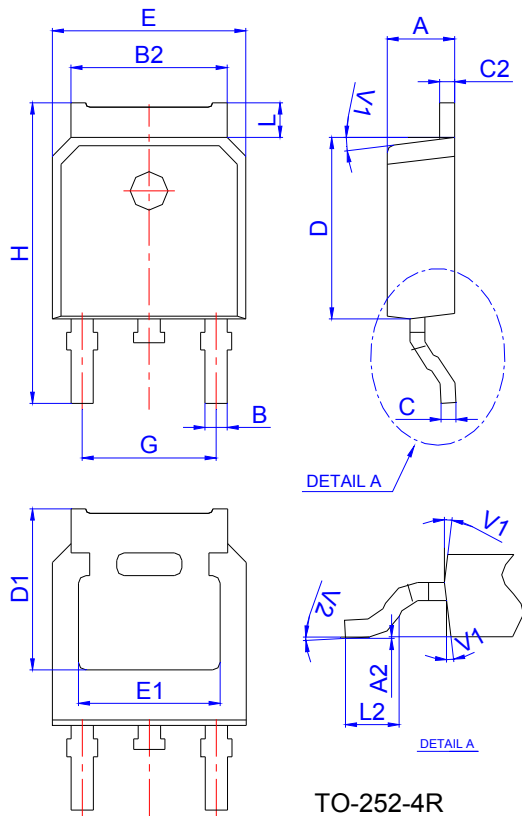
THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case	TO-252-4R	2.5	$^{\circ}\text{C/W}$
		TO-263	1.7	
$R_{th(j-a)}$	junction to ambient	TO-252-4R	70	$^{\circ}\text{C/W}$
		TO-263	45	

ORDERING INFORMATION

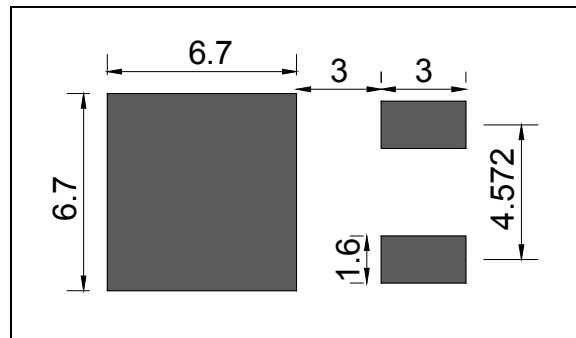
<p>J</p> <p>JieJie Microelectronics Co.,Ltd</p> <p>Sensitive gate SCRs</p>	<p>X</p> <p>$I_{T(RMS)}:12\text{A}$</p>	<p>075</p>	<p>K</p> <p>E:TO-263 K:TO-252-4R ETR:TO-263(Tape&Reel) KTR:TO-252-4R(Tape&Reel)</p>
---	---	-------------------	--

PACKAGE MECHANICAL DATA

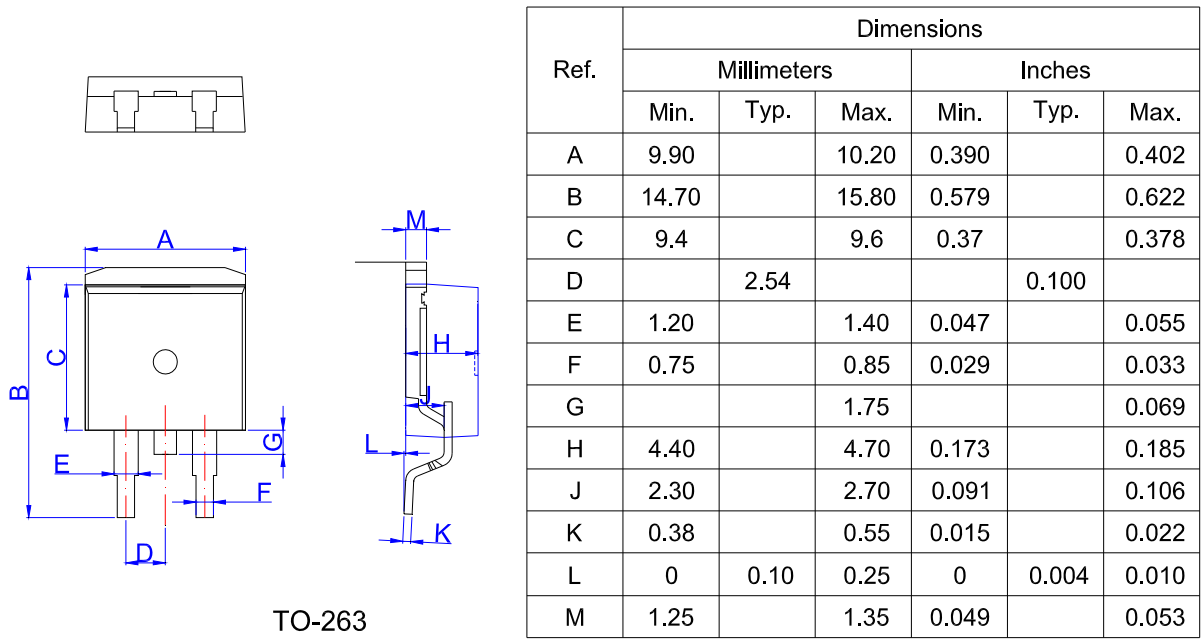


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0		0.10	0		0.004
B	0.66		0.86	0.026		0.034
B2	5.18		5.48	0.202		0.216
C	0.40		0.60	0.016		0.024
C2	0.44		0.58	0.017		0.023
D	5.90		6.30	0.232		0.248
D1	5.30REF			0.209REF		
E	6.40		6.80	0.252		0.268
E1	4.63			0.182		
G	4.47		4.67	0.176		0.184
H	9.50		10.70	0.374		0.421
L	1.09		1.21	0.043		0.048
L2	1.35		1.65	0.053		0.065
V1		7°			7°	
V2		0°	6°	0°		6°

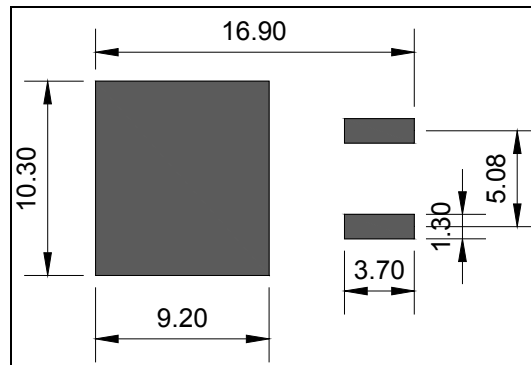
FOOTPRINT-TO-252-4R (dimensions in mm)



PACKAGE MECHANICAL DATA



FOOTPRINT-TO-263 (dimensions in mm)



PACKAGE INFORMATION

PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-263	TUBE	50	1,000	8,000
TO-252-4R	TUBE	80	4,000	32,000
PACKAGE	OUTLINE	REEL (PCS)	PER CARTON (PCS)	TAPE & REEL
TO-263	TAPING	800	4,000	13 inch
TO-252-4R	TAPING	2,500	25,000	13 inch

MARKING

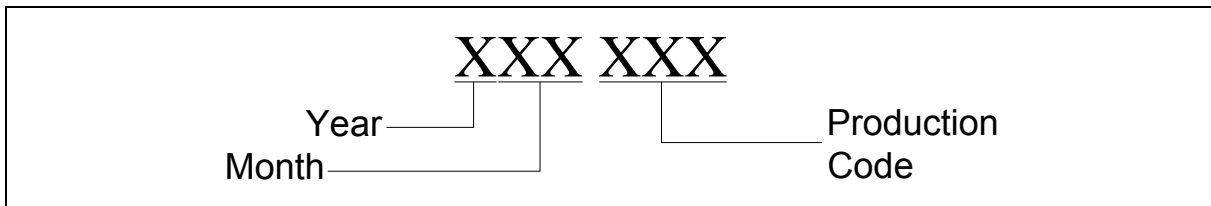
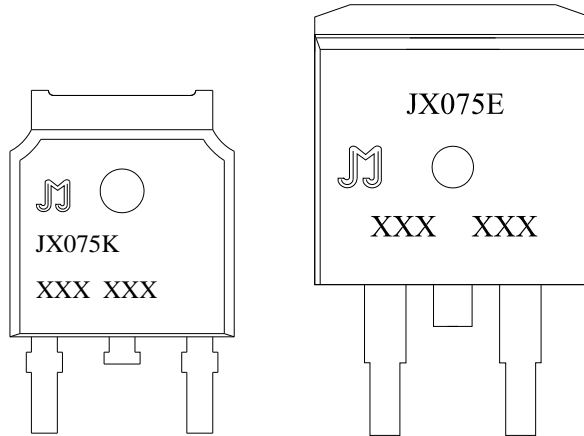


FIG.1 Maximum power dissipation versus RMS on-state current

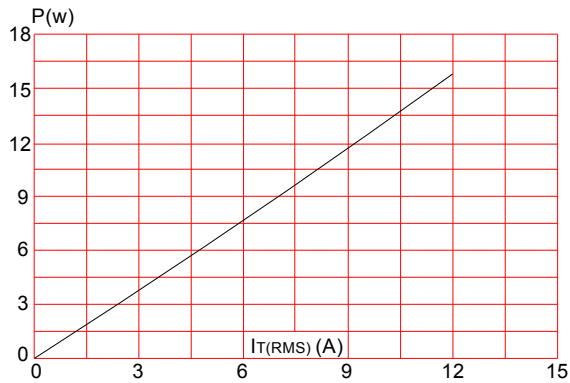


FIG.2 RMS on-state current versus ambient temperature (printed circuit board FR4, copper thickness:35μm)(full cycle)

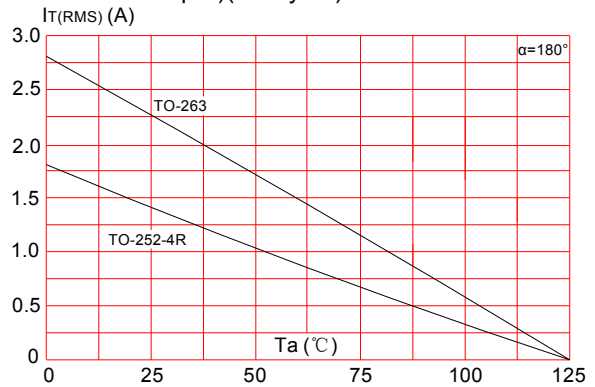


FIG.3 Surge peak on-state current versus number of cycles

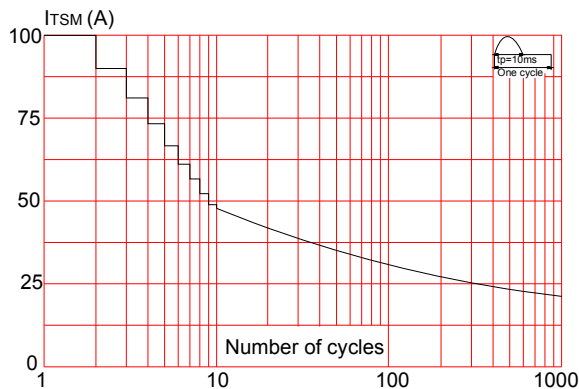


FIG.4 On-state characteristics (maximum values)

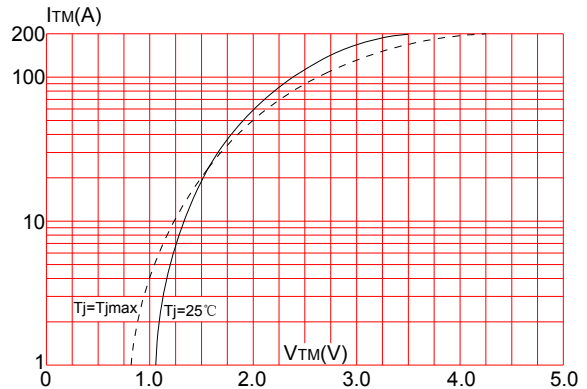


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

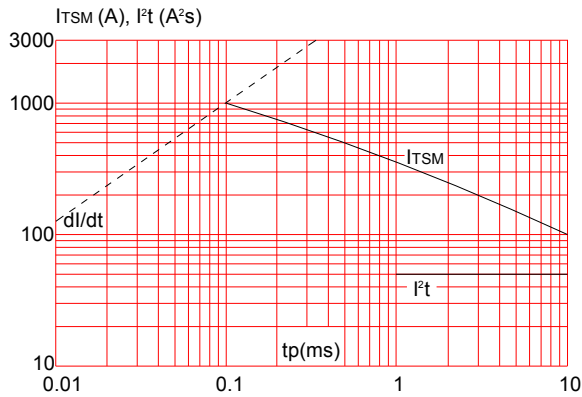
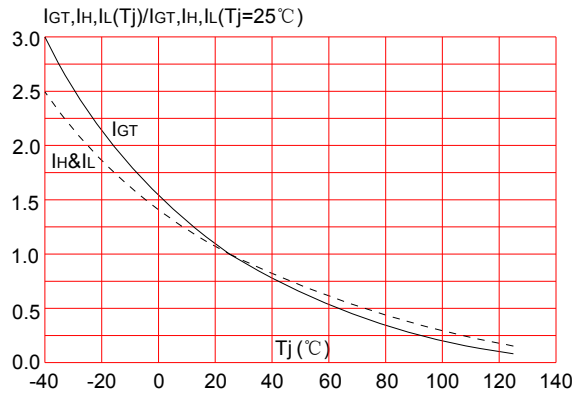
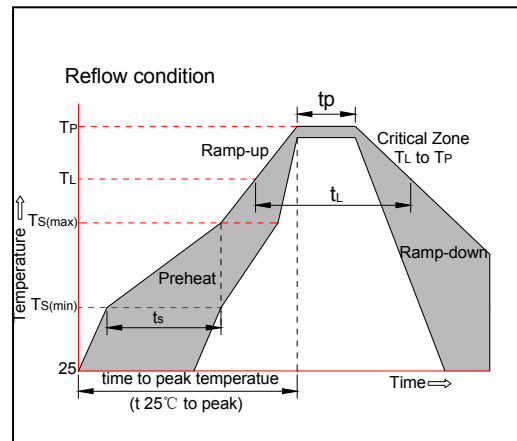


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature




SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ($T_{s(\text{min})}$)	+150 $^{\circ}\text{C}$
	-Temperature Max ($T_{s(\text{max})}$)	+200 $^{\circ}\text{C}$
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3 $^{\circ}\text{C}/\text{sec. Max}$
$T_{s(\text{max})}$ to T_L - Ramp-up Rate		3 $^{\circ}\text{C}/\text{sec. Max}$
Reflow	-Temperature(T_L) (Liquidus)	+217 $^{\circ}\text{C}$
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5) $^{\circ}\text{C}$
Time within 5 $^{\circ}\text{C}$ of actual Peak Temp (t_p)		20-40secs.
Ramp-down Rate		6 $^{\circ}\text{C}/\text{sec. Max}$
Time 25 $^{\circ}\text{C}$ to Peak Temp (T_P)		8 min. Max
Do not exceed		+260 $^{\circ}\text{C}$



Information furnished in this document is believed to be accurate and reliable. However, Jiangsu JieJie Microelectronics Co.,Ltd assumes no responsibility for the consequences of use without consideration for such information nor use beyond it. Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Jiangsu JieJie complies with the agreement. Products and information provided in this document have no infringement of patents. Jiangsu JieJie assumes no responsibility for any infringement of other rights of third parties which may result from the use of such products and information. This document is the eighth version which is made in 13-Feb.-2019. This document supersedes and replaces all information previously supplied.

 is a registered trademark of Jiangsu JieJie Microelectronics Co.,Ltd.
Copyright ©2019 Jiangsu JieJie Microelectronics Co.,Ltd. Printed All rights reserved.
