



JX014 Series Sensitive gate SCRs

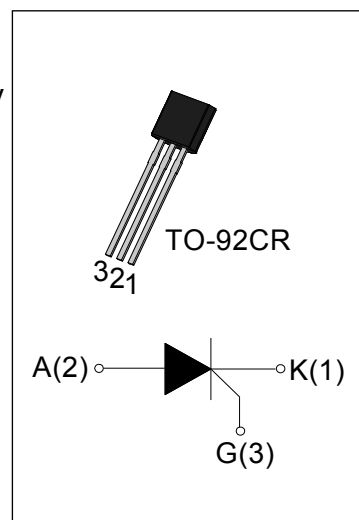
Rev.7.0

DESCRIPTION:

The JX014 SCR series 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. Package TO-92CR is RoHS compliant. (2011/65/EU)

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	1.25	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	$^{\circ}C$
Repetitive peak off-state voltage ($T_j=25^{\circ}C$)		V_{DRM}	1200	V
Repetitive peak reverse voltage ($T_j=25^{\circ}C$)		V_{RRM}	1200	V
RMS on-state current	TO-92CR ($T_C=50^{\circ}C$)	$I_{T(RMS)}$	1.25	A
Non repetitive surge peak on-state current ($F=50Hz$ $t_p=10ms$)		I_{TSM}	20	A
Non repetitive surge peak on-state current ($F=60Hz$ $t_p=10ms$)		I_{TSM}	22	A
I^2t value for fusing ($t_p=10ms$)		I^2t	2	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}	0.2	A
Peak gate power ($t_p=20\mu s$, $T_j=125^{\circ}C$)		P_{GM}	0.5	W
Average gate power dissipation($T_j=125^{\circ}C$)		$P_{G(AV)}$	0.1	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}	$V_D=12\text{V}$ $R_L=33\Omega$	20	50	200	μA
V_{GT}		-	0.6	0.8	V
V_{GD}	$V_D=V_{DRM}$ $T_j=125^{\circ}\text{C}$	0.2	-	-	V
I_L	$I_G=1.2 I_{GT}$	-	-	5	mA
I_H	$I_T=0.05\text{A}$	-	-	4	mA
dV/dt	$V_D=2/3V_{DRM}$ $T_j=125^{\circ}\text{C}$ $R_{GK}=1\text{K}\Omega$	70	-	-	V/ μs
	$V_D=2/3V_{DRM}$ $T_j=125^{\circ}\text{C}$ $R_{GK}=220\Omega$	800	-	-	
R_d	Dynamic Resistance $T_j=125^{\circ}\text{C}$	-	-	150	$\text{m}\Omega$

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=4\text{A}$ $t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.5	V
I_{DRM}	$V_D=V_{DRM}$ $V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	100	μA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case	TO-92CR	57	$^{\circ}\text{C}/\text{W}$

ORDERING INFORMATION

J <u>JieJie Microelectronics Co.,Ltd</u> <u>Sensitive gate SCRs</u> X 014 <u>$I_{T(RMS)}:1.25\text{A}$</u> CR <u>CR:TO-92CR</u> -TR <u>B: Bulk Pack</u> <u>TR: Tape & Reel</u>				
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MARKING

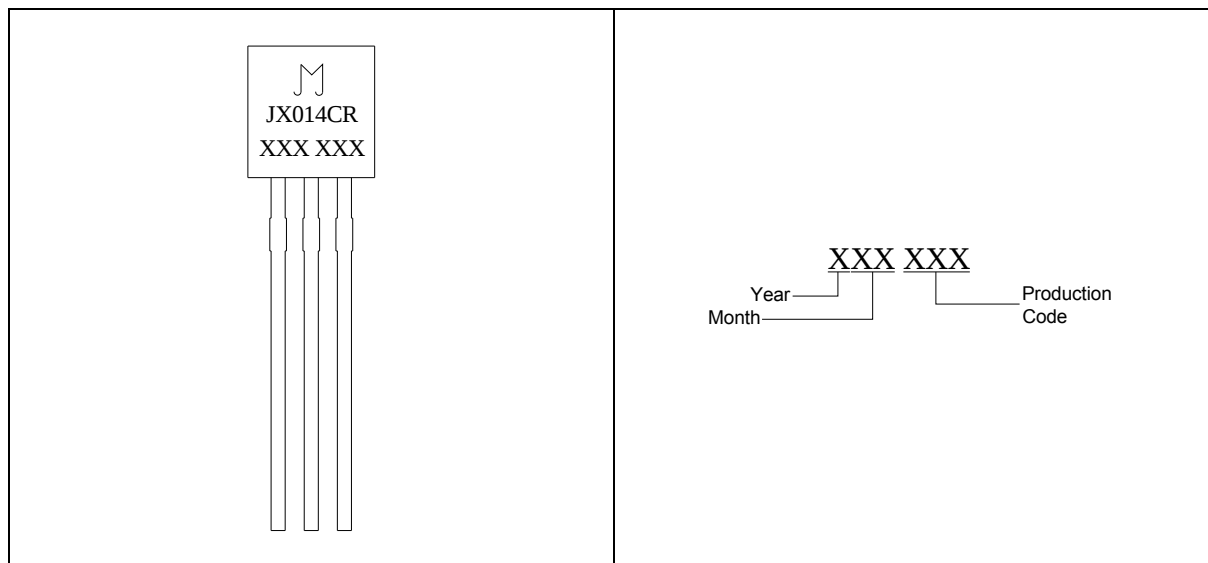


FIG.1: Maximum power dissipation versus RMS on-state current

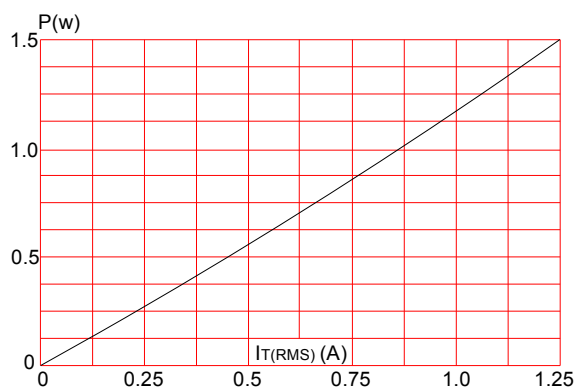


FIG.3: Surge peak on-state current versus number of cycles

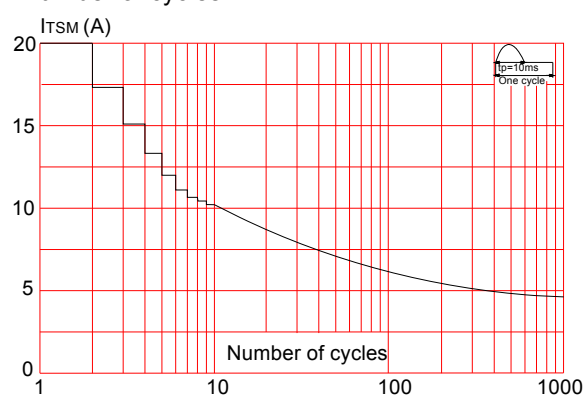


FIG.2: RMS on-state current versus case temperature

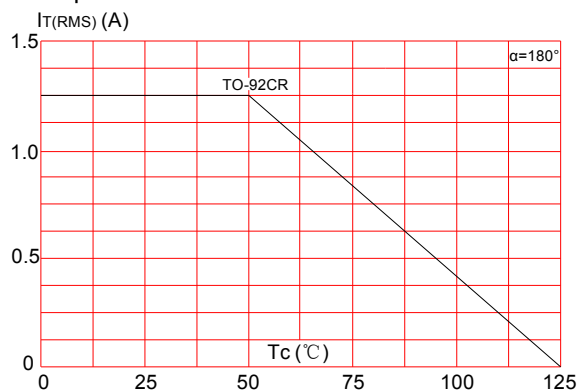


FIG.4: On-state characteristics (maximum values)

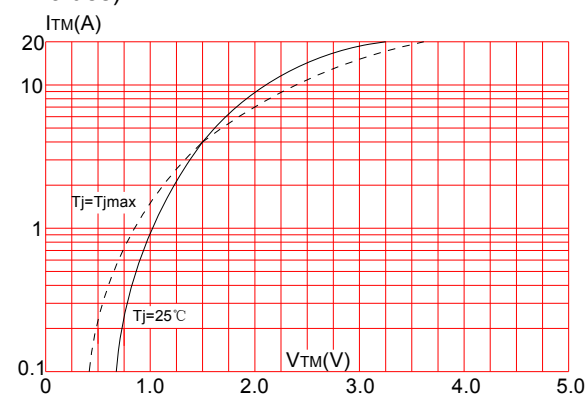


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

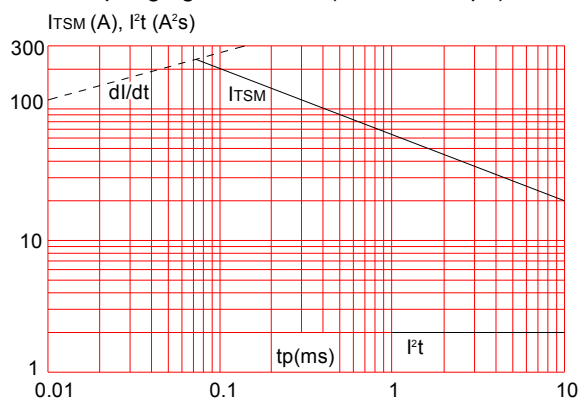
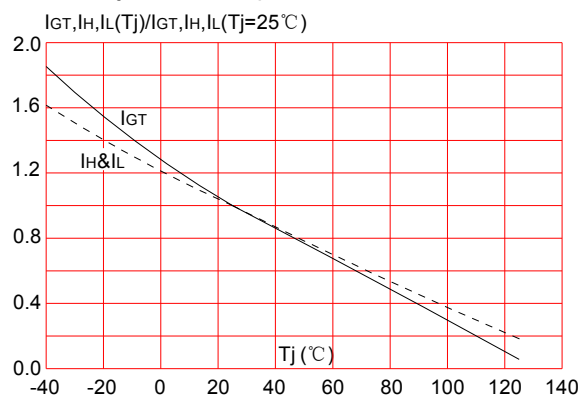


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



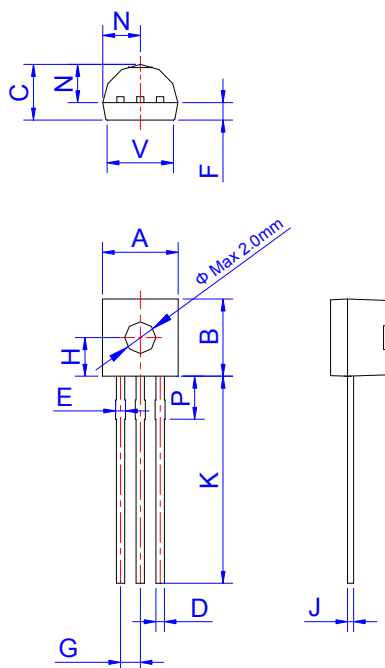
ORDERING INFORMATION

Order code	Voltage $V_{\text{DRM}}/V_{\text{RRM}}$ (V)	$I_{GT}(\mu\text{A})$	Package	Base qty. (pcs)	Delivery mode
JX014CR	1200	200	TO-92CR	2,000	Tape & Reel
				1,000	Bulk Pack

Document Revision History

Date	Revision	Changes
Feb 13, 2019	6	Last update
Nov 16, 2021	7	Renew $V_{\text{DRM}}/V_{\text{RRM}}$

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.56		5.00	0.179		0.197
B	4.56		5.00	0.179		0.197
C	3.30		3.60	0.130		0.142
D	0.50		0.60	0.020		0.024
E	0.60		0.80	0.020		0.028
F	-	1.1	-		0.043	
G	-	1.27	-	-	0.050	-
H	-	2.43	-	-	0.096	-
J	0.36		0.50	0.014		0.020
K	11.50	13.00	14.20	0.453	0.512	0.559
N	2.04		2.66	0.080		0.105
P	2.50		2.90	0.098		0.114
V	-		4.3	-		0.169

DELIVERY MODE

PACKAGE	OUTLINE	BAG (PCS)	INNER BOX (PCS)	CARTON BOX (PCS)
TO-92CR	Bulk Pack	1,000	10,000	50,000

PACKAGE	OUTLINE	REEL (PCS)	INNER BOX (PCS)	CARTON BOX (PCS)
TO-92CR	Tape & Reel	/	2,000	20,000



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