



## JX014 Series Sensitive gate SCRs

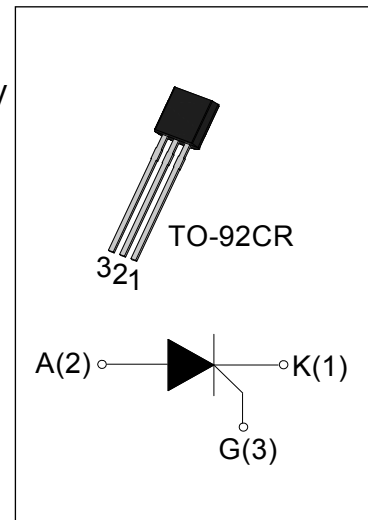
Rev.6.0

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



### ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	$T_{stg}$	-40-150	$^{\circ}C$
Operating junction temperature range	$T_j$	-40-125 <sup>①</sup>	$^{\circ}C$
Repetitive peak off-state voltage ( $T_j=25^{\circ}C$ )	$V_{DRM}$	900	V
Repetitive peak reverse voltage ( $T_j=25^{\circ}C$ )	$V_{RRM}$	900	V
Non repetitive peak off-state voltage	$V_{DSM}$	1250	V
Non repetitive peak reverse voltage	$V_{RSM}$	1250	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	$\mu\text{A}$
$V_{GT}$		-	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	$V_D=600\text{V } T_j=125^{\circ}\text{C } R_{GK}=1\text{K}\Omega$	70	-	-	V/ $\mu\text{s}$
	$V_D=600\text{V } T_j=125^{\circ}\text{C } R_{GK}=220\Omega$	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	$\mu\text{A}$
$I_{RRM}$		$T_j=125^{\circ}\text{C}$	100	$\mu\text{A}$

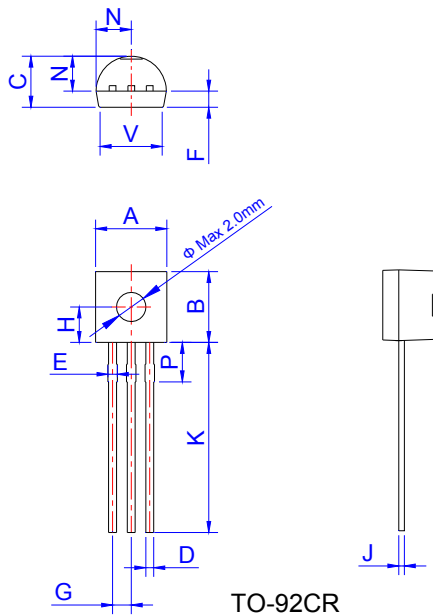
**THERMAL RESISTANCES**

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

**ORDERING INFORMATION**

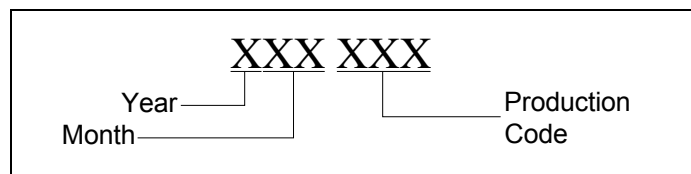
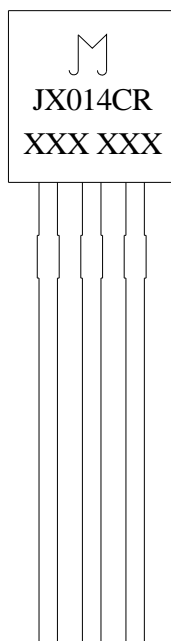
<p><b>J</b></p> <p>JieJie Microelectronics Co.,Ltd</p> <p>Sensitive gate SCRs</p>	<p><b>X</b></p>	<p><b>014</b></p> <p><math>I_{T(RMS)}:1.25\text{A}</math></p>	<p><b>CR</b></p> <p>CR:TO-92CR</p>
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**PACKAGE MECHANICAL DATA**



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	0.024		0.032
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

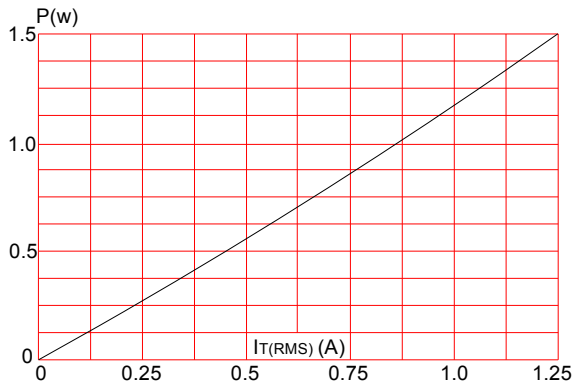
**MARKING**



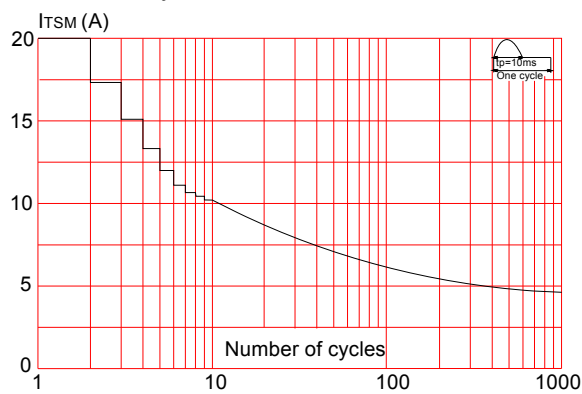
**PACKAGE INFORMATION**

PACKAGE	OUTLINE	BAG (PCS)	INNER BOX (PCS)	PER CARTON
TO-92CR	Shielding Bag	1,000	10,000	30,000
TO-92CR	Shielding Bag	1,000	10,000	50,000
TO-92CR	Shielding Bag	1,000	10,000	100,000

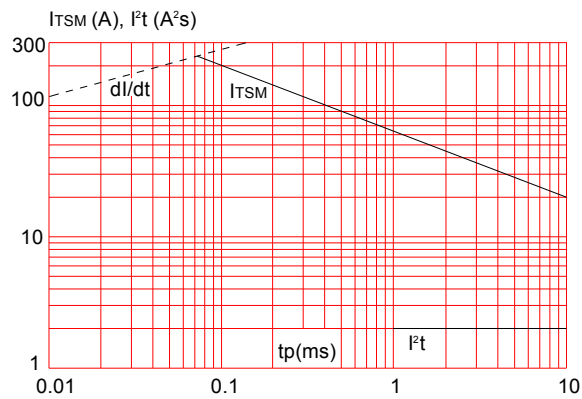
**FIG.1:** Maximum power dissipation versus RMS on-state current



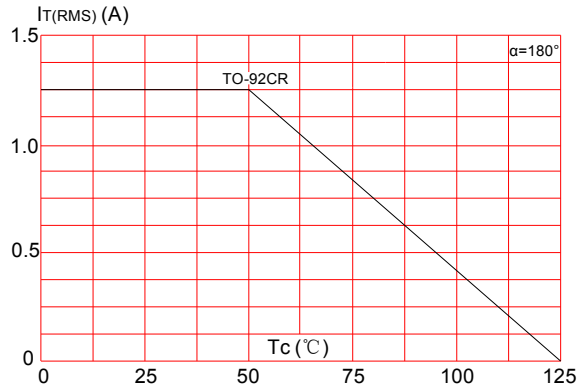
**FIG.3:** Surge peak on-state current versus number of cycles



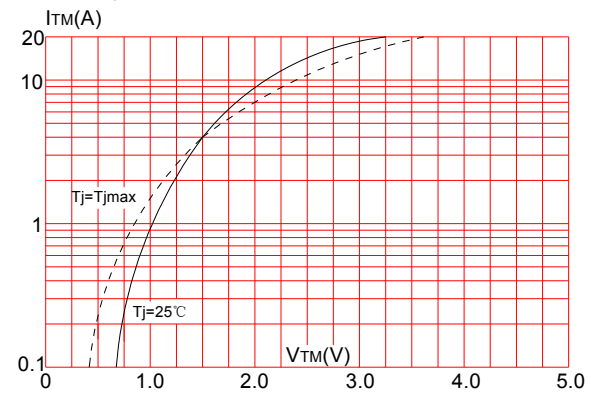
**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10ms$ , and corresponding value of  $I^2t$  ( $di/dt < 50A/\mu s$ )



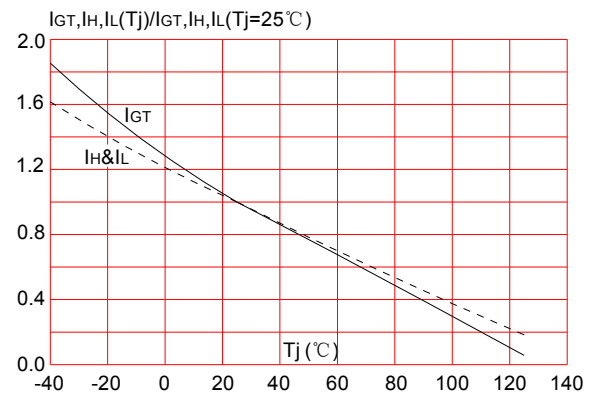
**FIG.2:** RMS on-state current versus case temperature




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



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



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