



## JX011 Series Sensitive gate SCRs

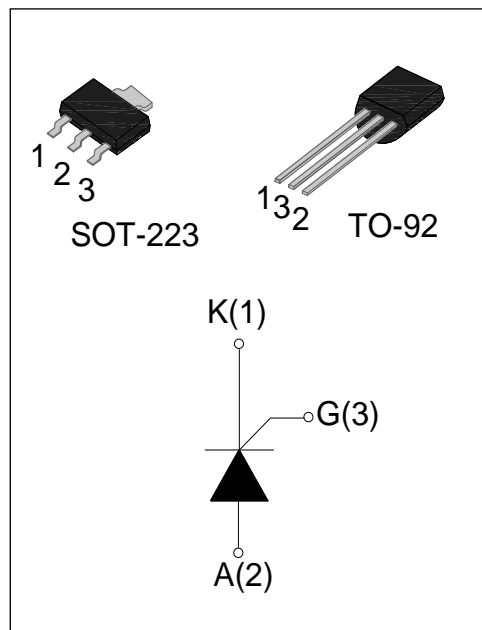
Rev.4.0

### DESCRIPTION:

The JX011 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.

### MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	1	A
$I_{GT}$	$\leq 200$	$\mu A$
$V_{TM}$	$\leq 1.7$	V



### ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit	
Storage junction temperature range	$T_{stg}$	-40-150	$^{\circ}C$	
Operating junction temperature range	$T_j$	-40-110	$^{\circ}C$	
Repetitive peak off-state voltage	$V_{DRM}$	800	V	
Repetitive peak reverse voltage	$V_{RRM}$	800	V	
RMS on-state current	TO-92 ( $T_C=50^{\circ}C$ )	$I_{T(RMS)}$	1	A
	SOT-223 ( $T_C=75^{\circ}C$ )			
Non repetitive surge peak on-state current ( $t_p=10ms$ )	$I_{TSM}$	12	A	
$I^2t$ value for fusing ( $t_p=10ms$ )	$I^2t$	0.72	$A^2s$	
Critical rate of rise of on-state current	$di/dt$	50	$A/\mu s$	
Peak gate current ( $t_p=20\mu s$ , $T_j=110^{\circ}C$ )	$I_{GM}$	0.3	A	
Peak gate power ( $t_p=20\mu s$ , $T_j=110^{\circ}C$ )	$P_{GM}$	0.5	W	
Average gate power dissipation( $T_j=110^{\circ}C$ )	$P_{G(AV)}$	0.1	W	

**ELECTRICAL CHARACTERISTICS** ( $T_j=25^{\circ}\text{C}$  unless otherwise specified)

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
$I_{GT}$	$V_D=12\text{V } R_L=33\Omega$	-	-	200	$\mu\text{A}$
$V_{GT}$		-	0.6	0.8	V
$V_{GD}$	$V_D=V_{DRM} T_j=110^{\circ}\text{C}$	0.2	-	-	V
$I_L$	$I_G=1.2 I_{GT}$	-	-	5	mA
$I_H$	$I_T=0.05\text{A}$	-	-	3	mA
dV/dt	$V_D=2/3V_{DRM} T_j=110^{\circ}\text{C} R_{GK}=1\text{K}\Omega$	50	100	-	V/ $\mu\text{s}$

**STATIC CHARACTERISTICS**

Symbol	Parameter		Value(MAX)	Unit
$V_{TM}$	$I_T=2\text{A } t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.7	V
$I_{DRM}$	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	$\mu\text{A}$
$I_{RRM}$		$T_j=110^{\circ}\text{C}$	100	$\mu\text{A}$

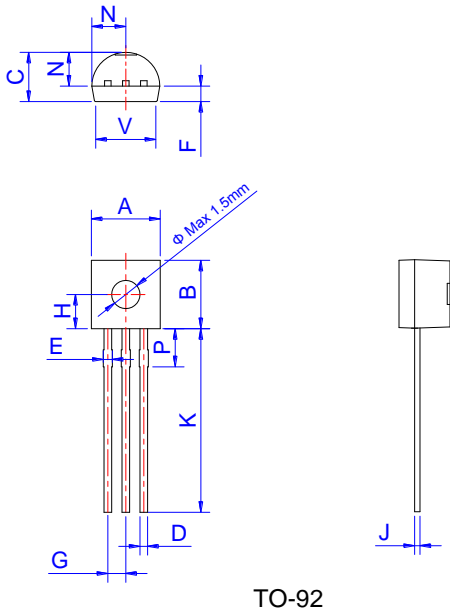
**THERMAL RESISTANCES**

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case	TO-92	70	$^{\circ}\text{C/W}$
		SOT-223	60	

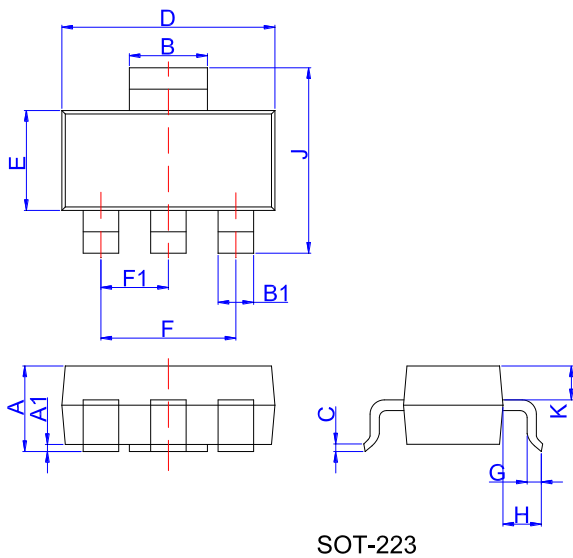
**ORDERING INFORMATION**

<p><b>J X 011 U</b></p> <p><u>JieJie Microelectronics Co.,Ltd</u></p> <p><u>Sensitive gate SCRs</u></p>	<p><u>U:TO-92 V:SOT-223</u></p> <p><u><math>I_{T(RMS)}:1\text{A}</math></u></p>
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**PACKAGE MECHANICAL DATA**

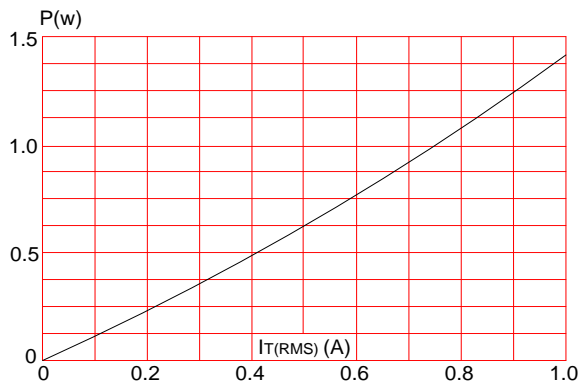


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	4.45		5.20	0.175		0.205
B	4.32		5.33	0.170		0.210
C	3.18		4.19	0.125		0.165
D	0.407		0.533	0.016		0.021
E	0.60		0.80	0.024		0.031
F	-	1.1	-	-	0.043	-
G	-	1.27	-	-	0.050	-
H	-	2.30	-	-	0.091	-
J	0.36		0.50	0.014		0.020
K	12.70		15.0	0.500		0.591
N	2.04		2.66	0.080		0.105
P	1.86		2.06	0.073		0.081
V	-		4.3	-		0.169

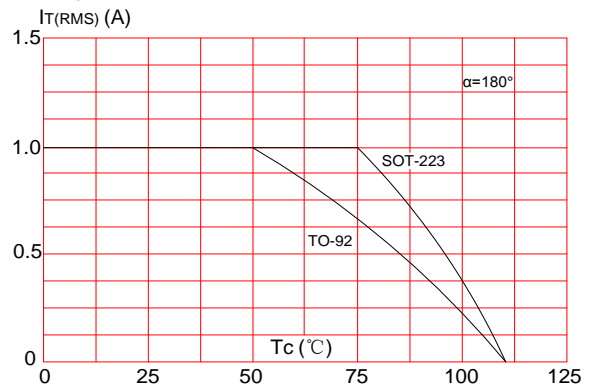


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.5	1.6	1.8	0.059	0.063	0.071
A1	0	0.06	0.10	0	0.002	0.004
B	2.9	3.0	3.1	0.114	0.118	0.122
B1	0.6	0.7	0.8	0.024	0.028	0.031
C	0.22	0.26	0.32	0.009	0.010	0.013
D	6.3	6.5	6.7	0.248	0.256	0.264
E	3.3	3.5	3.7	0.130	0.138	0.146
F		4.6			0.181	
F1		2.3			0.091	
G	0.7	0.9	1.1	0.028	0.035	0.043
H	1.5	1.75	2.0	0.059	0.069	0.079
J	6.7	7.0	7.3	0.264	0.276	0.287
K	0.8	0.9	1.0	0.031	0.035	0.039

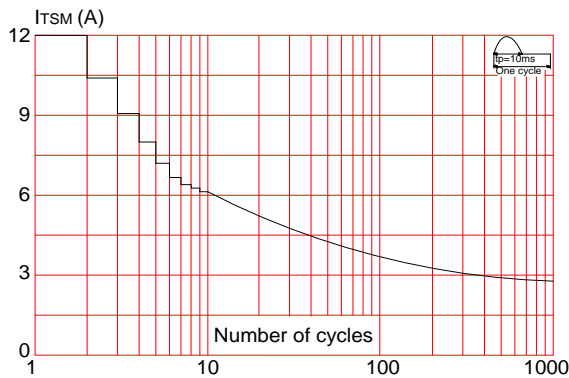
**FIG.1** Maximum power dissipation versus RMS on-state current



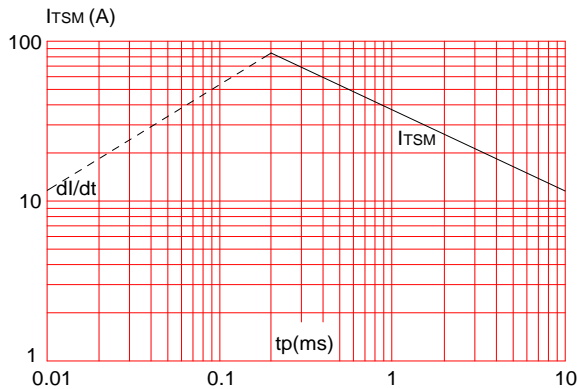
**FIG.2** RMS on-state current versus case temperature



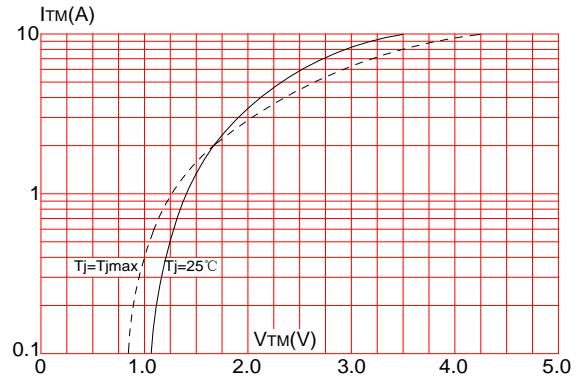
**FIG.3:** Surge peak on-state current versus number of cycles



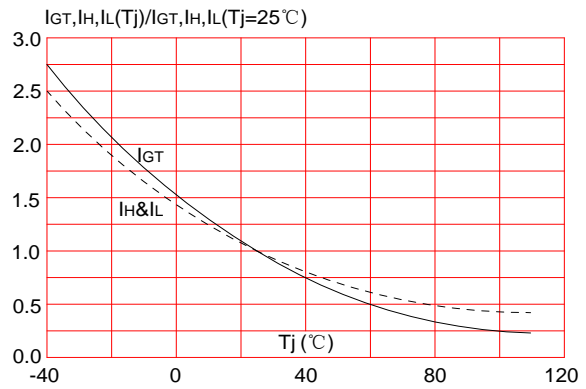
**FIG.5:** Non-repetitive surge peak on-state current for a sinusoidal pulse with width  $t_p < 10\text{ms}$  ( $di/dt \leq 50\text{A}/\mu\text{s}$ )



**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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