



JX020H 2A Sensitive SCR

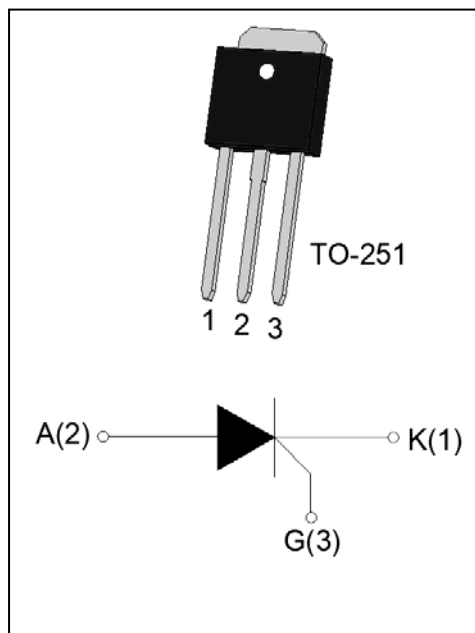
Rev.A.1.0

DESCRIPTION:

The JX020H SCR provides high dV/dt rate with strong resistance to electromagnetic interface. It is especially recommended for use on residual current circuit breaker, straight hair, igniter etc. Package TO-251 is RoHS compliant.

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	2	A
V_{DRM} / V_{RRM}	600	V
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}	600	V
Repetitive peak reverse voltage ($T_j=25^{\circ}C$)	V_{RRM}	600	V
Average on-state current ($T_c \leq 104^{\circ}C$)	$I_{T(AV)}$	1.3	A
RMS on-state current ($T_c \leq 104^{\circ}C$)	$I_{T(RMS)}$	2	A
Non repetitive surge peak on-state current ($t_p=10ms, T_j=25^{\circ}C$)	I_{TSM}	20	A
Non repetitive surge peak on-state current ($t_p=8.3ms, T_j=25^{\circ}C$)		22	
I^2t value for fusing ($t_p=10ms, T_j=25^{\circ}C$)	I^2t	2	A^2s
Critical rate of rise of on-state current ($I_G=2 \times I_{GT}, f=100Hz, T_j=125^{\circ}C$)	di/dt	50	$A/\mu s$
Peak gate current ($t_p=20\mu s, T_j=125^{\circ}C$)	I_{GM}	1.2	A
Average gate power dissipation ($T_j=125^{\circ}C$)	$P_{G(AV)}$	0.2	W

Peak gate power	P_{GM}	2	W
Peak pulse voltage ($T_j=25^\circ\text{C}$; non-repetitive, off-state; FIG.7)	V_{pp}	0.5	kV

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

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

Symbol	Test Condition	Value			Unit
		MIN.	TYP.	MAX.	
I_{GT}	$V_D=12\text{V } R_L=33\Omega$	-	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	$I_G=1.2 I_{GT}$	-	-	6	mA
I_H	$I_T=0.05\text{A}$	-	-	5	mA
dV/dt	$V_D=400\text{V } T_j=125^\circ\text{C } R_{GK}=1\text{K}\Omega$	20	-	-	$\text{V}/\mu\text{s}$
	$V_D=400\text{V } T_j=125^\circ\text{C } R_{GK}=220\Omega$	100	-	-	
t_{on}	$I_G=10\text{mA } I_A=20\text{mA } I_R=2\text{mA}$	-	2	-	μs
t_{off}	$T_j=25^\circ\text{C}$	-	50	-	μs

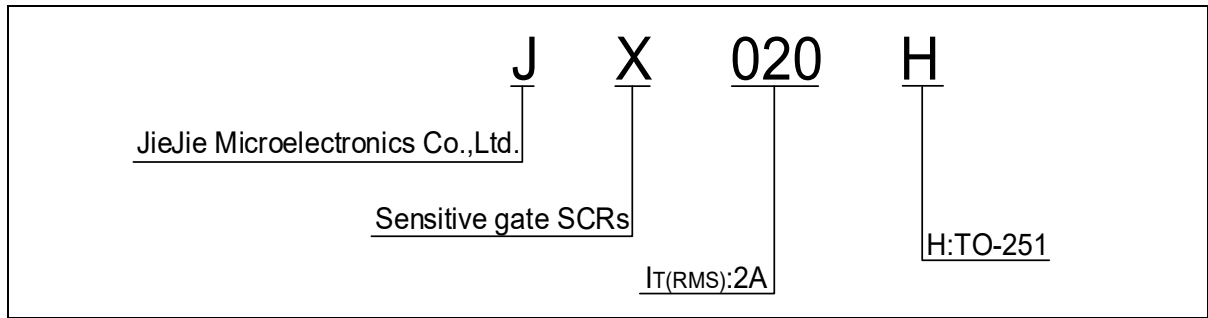
STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX.)	Unit
V_{TM}	$I_T=4\text{A } t_p=380\mu\text{s}$	$T_j=25^\circ\text{C}$	1.5	V
V_{TO}	Threshold voltage	$T_j=125^\circ\text{C}$	0.8	V
R_D	Dynamic Resistance	$T_j=125^\circ\text{C}$	0.07	Ω
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^\circ\text{C}$	5	μA
I_{RRM}		$T_j=125^\circ\text{C}$	0.2	mA

THERMAL RESISTANCES

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	junction to case (DC)	8	$^\circ\text{C}/\text{W}$
$R_{th(j-a)}$	junction to ambient (DC)	120	$^\circ\text{C}/\text{W}$

ORDERING INFORMATION



MARKING

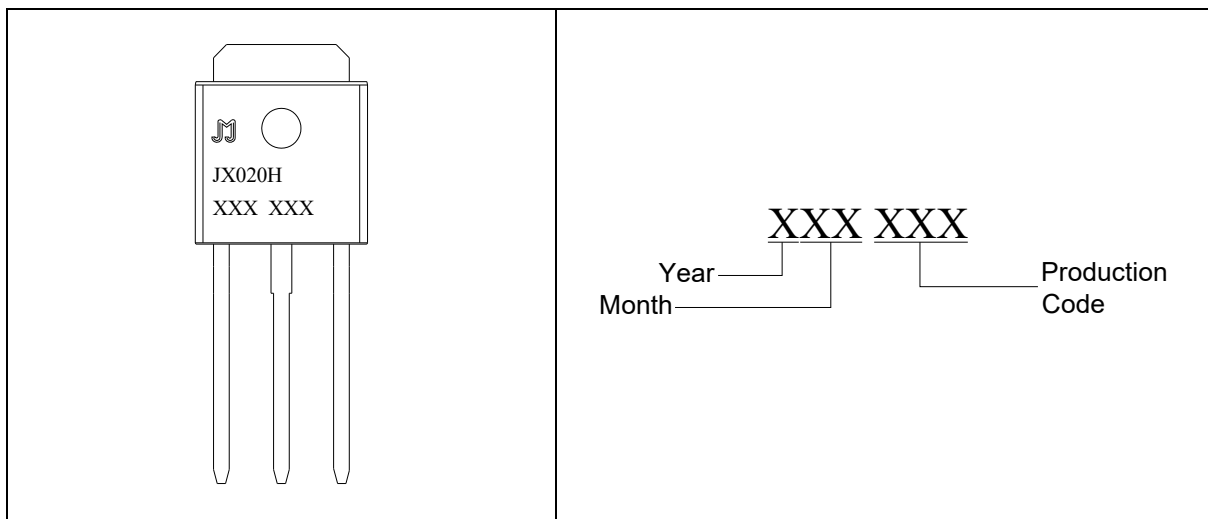


FIG.1 Maximum power dissipation versus RMS on-state current

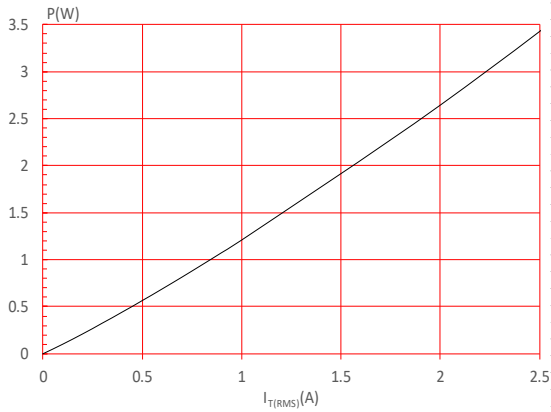


FIG.2: RMS on-state current versus case temperature

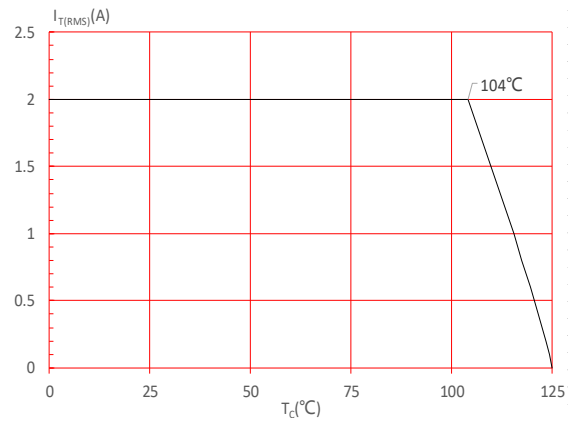


FIG.3: Surge peak on-state current versus number of cycles

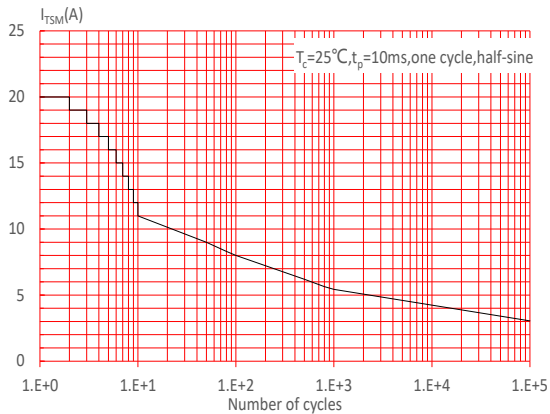


FIG.4: On-state characteristics

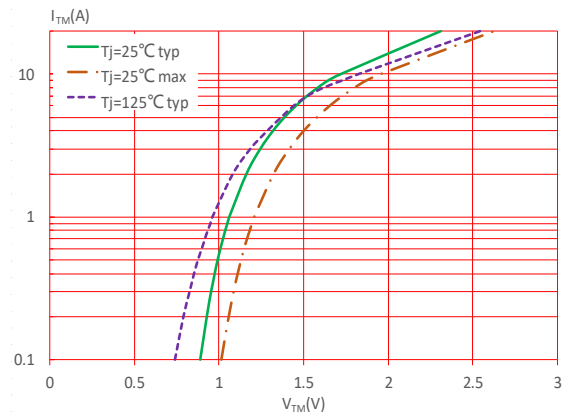


FIG.5: Non-repetitive surge cycles peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

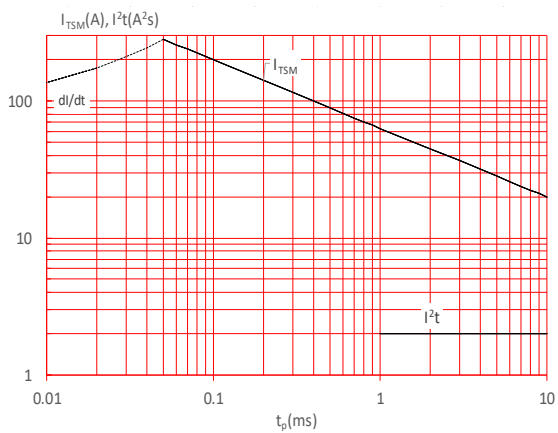


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature

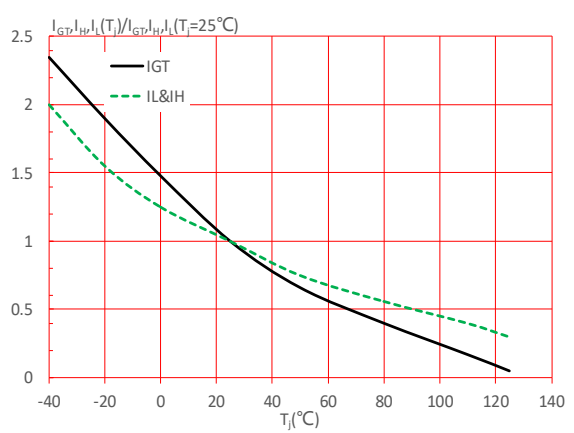
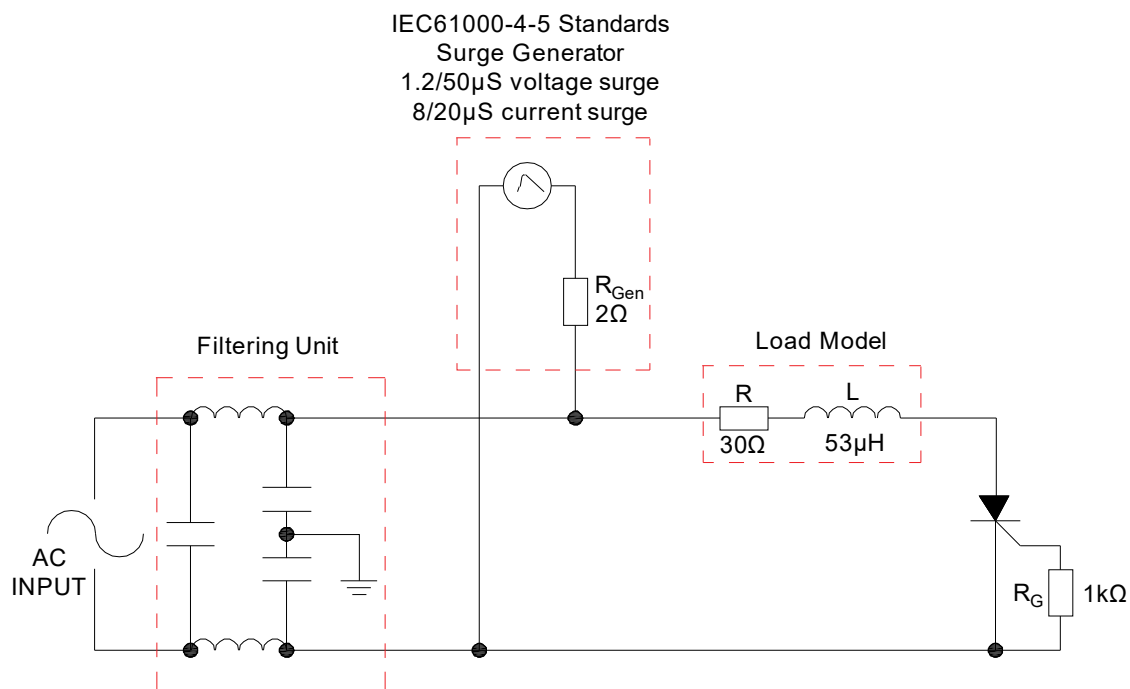


FIG.7: Test circuit for inductive and resistive loads to IEC-61000-4-5 standards.



SHAPING AND SOLDERING PARAMETERS

Refer to 《Instructions for installation of plastic-sealed in-line power devices》 released by JieJie

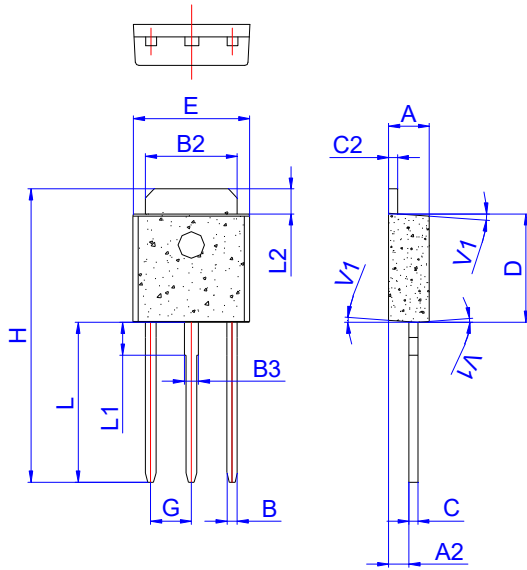
ORDERING INFORMATION

Order code	Voltage V _{DRM} /V _{R_{RRM}} (V)	IGT(μA)	Package	Base qty. (pcs)	Delivery mode
JX020H	600	≤200	TO-251	80	Tube

Document Revision History

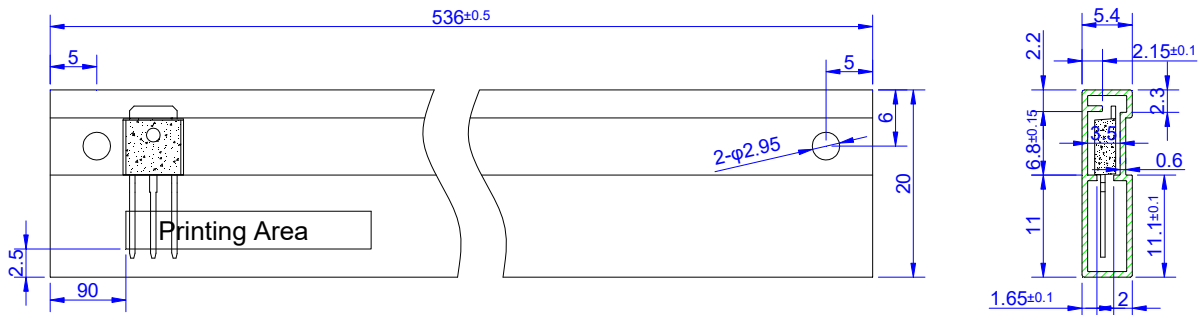
Date	Revision	Changes
Apr.12, 2023	A.1.0	Last update

PACKAGE MECHANICAL DATA




Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	1.00		1.30	0.039		0.051
B	0.50		0.70	0.020		0.028
B2	5.10		5.40	0.200		0.213
B3	0.70		1.00	0.028		0.039
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	2.20		2.40	0.087		0.094
H	16.0		17.0	0.630		0.669
L	8.90		9.40	0.350		0.370
L1	1.80		2.20	0.071		0.087
L2	1.25		1.55	0.049		0.061
V1		4°			4°	

DELIVERY MODE



PACKAGE	OUTLINE	TUBE (PCS)	INNER BOX (PCS)	PER CARTON
TO-251	TUBE	80	4,000	20,000

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