



JR0405H Sensitive gate SCRs

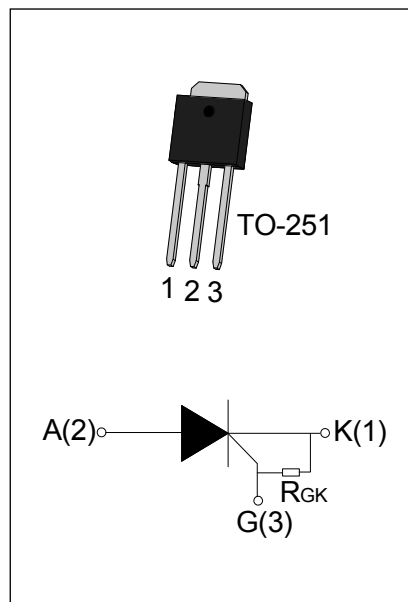
Rev.9.0

DESCRIPTION:

The JR0405H SCR with the parallel resistor between Gate and Cathode are especially recommended for use on straight hair, igniter, anion generator, etc. Package TO-251 is RoHS compliant.(2011/65/EU)

MAIN FEATURES

Symbol	Value	Unit
$I_{T(RMS)}$	4	A
I_{GT}	≤ 200	μA
V_{TM}	≤ 1.5	V



ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit
Storage junction temperature range	T_{stg}	-40-150	$^{\circ}C$
Operating junction temperature range	T_j	-40-125 ^①	$^{\circ}C$
Repetitive peak off-state voltage	V_{DRM}	600	V
Repetitive peak reverse voltage	V_{RRM}	600	V
RMS on-state current TO-251 ($T_C=90^{\circ}C$)	$I_{T(RMS)}$	4	A
Non repetitive surge peak on-state current ($t_p=10ms$)	I_{TSM}	30	A
I^2t value for fusing ($t_p=10ms$)	I^2t	4.5	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}	2	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}	$V_D=12\text{V } R_L=33\Omega$	-	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	$V_D=2/3V_{DRM} T_j=125^{\circ}\text{C} R_{GK}=1\text{K}\Omega$	10	-	-	V/ μs

STATIC CHARACTERISTICS

Symbol	Parameter		Value(MAX)	Unit
V_{TM}	$I_{TM}=8\text{A } t_p=380\mu\text{s}$	$T_j=25^{\circ}\text{C}$	1.5	V
I_{DRM}	$V_D=V_{DRM} V_R=V_{RRM}$	$T_j=25^{\circ}\text{C}$	5	μA
I_{RRM}		$T_j=125^{\circ}\text{C}$	200	μA

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	junction to case	TO-251	6.5	$^{\circ}\text{C/W}$

ORDERING INFORMATION

<p>J</p> <p>JieJie Microelectronics Co.,Ltd</p> <p>Sensitive gate SCRs</p>	<p>R</p> <p>$I_{T(RMS)}:4\text{A}$</p>	<p>04</p> <p>05: $I_{GT} \leq 200\mu\text{A}$</p>	<p>05</p>	<p>H</p> <p>H:TO-251</p>	<p>-/</p> <p>Blank: Tube</p>
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MARKING

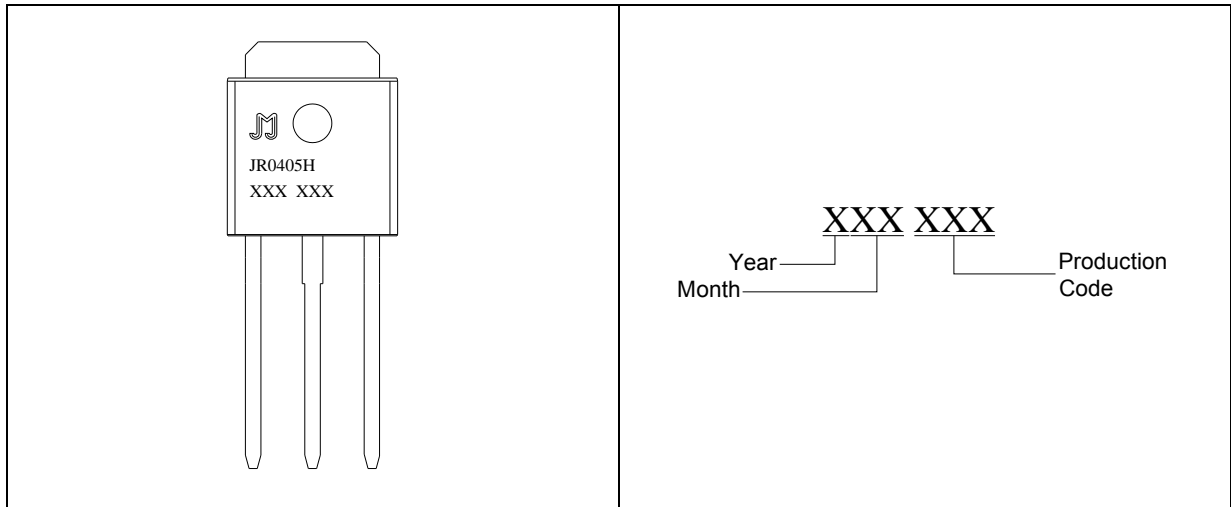


FIG.1: Maximum power dissipation versus RMS on-state current

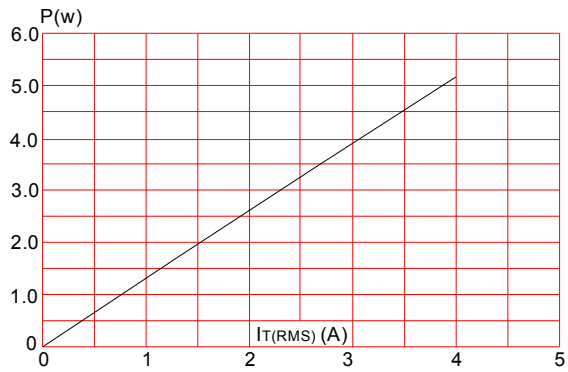


FIG.2: RMS on-state current versus case temperature

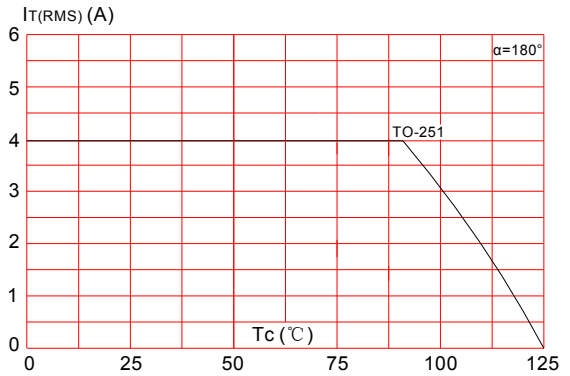


FIG.3: Surge peak on-state current versus number of cycles

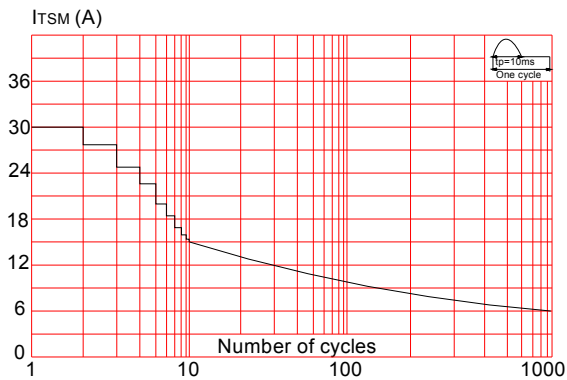


FIG.5: Non-repetitive surge peak on-state current for a sinusoidal pulse with width $t_p < 10\text{ms}$, and corresponding value of I^2t ($di/dt < 50\text{A}/\mu\text{s}$)

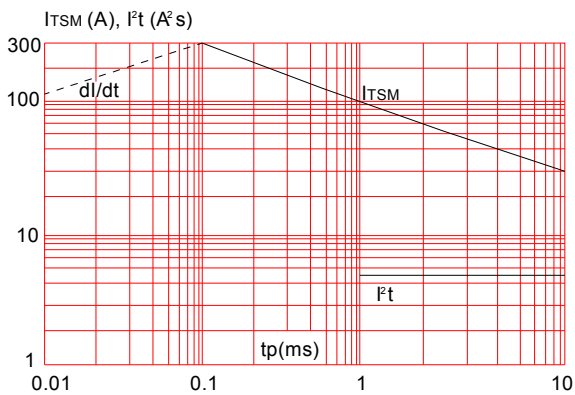


FIG.4: On-state characteristics (maximum values)

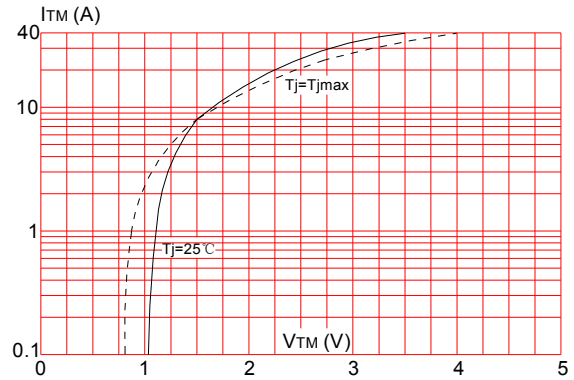
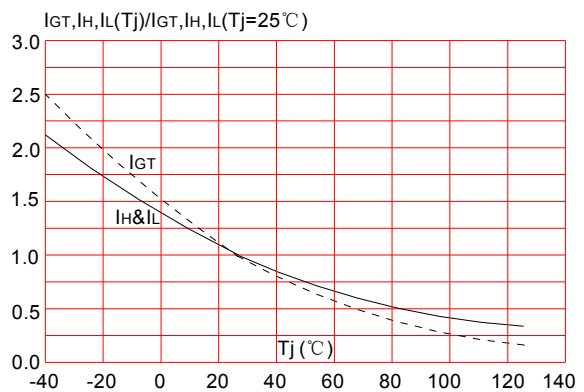


FIG.6: Relative variations of gate trigger current, holding current and latching current versus junction temperature



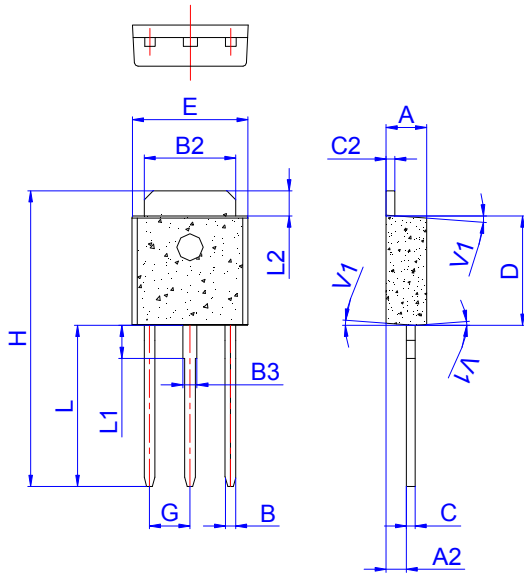
ORDERING INFORMATION

Order code	V_{DRM}/V_{RRM} (V)	I_{GT} (μA)	Package	Base qty. (pcs)	Delivery mode
JR0405H	600	≤ 200	TO-251	80	Tube

Document Revision History

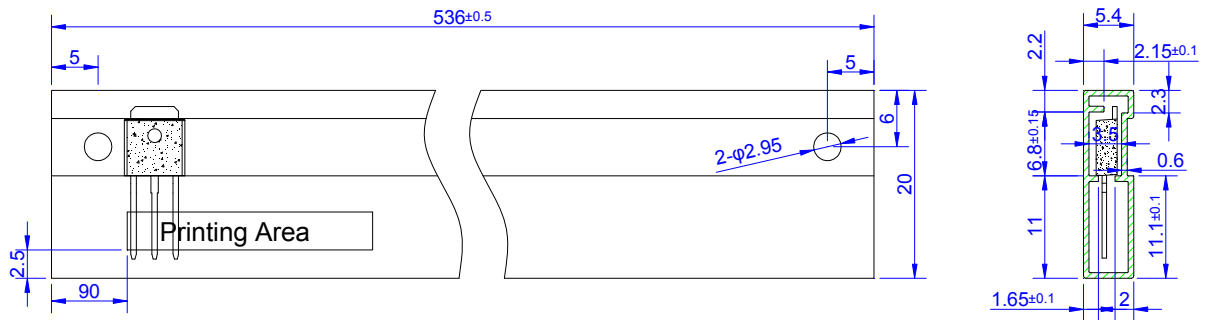
Date	Revision	Changes
Jan 11, 2019	9	Last update

PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.20		2.40	0.086		0.095
A2	0.90		1.20	0.035		0.047
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
B3	0.76		0.85	0.030		0.033
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		2.30			0.091	
H	16.0		17.0	0.630		0.669
L	8.90		9.40	0.350		0.370
L1	1.80		1.90	0.071		0.075
L2	1.37		1.50	0.054		0.059
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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