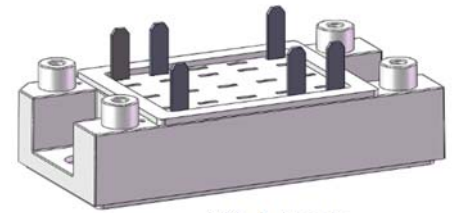


# JS151KQ

## Description

- 1) A package consists of two inverse parallel SCR chips, which non-repetitive peak off-state voltage is up to 2000V
- 2) Welding by vacuum welding technology, which provide high reliability
- 3) Insulated by silicone gel, provide a insulation voltage of 3000V~



V1-A-Pack

## Typical Application

Soft start, solid state relay, AC/DC switch, temperature control.

## Absolute Maximum Ratings (Packaged into V1-A-Pack, unless otherwise specified, $T_{CASE}=25^{\circ}C$ )

Parameter	Test Conditions	Symbol	Values			Unit
			12	16	18	
Operating junction temperature range		$T_j$	-40-125			$^{\circ}C$
Storage temperature range		$T_{stg}$	-40-125			$^{\circ}C$
Repetitive peak off-state voltage	$T_j=25^{\circ}C$	$V_{DRM}$	1200	1600	1800	V
Repetitive peak reverse voltage	$T_j=25^{\circ}C$	$V_{RRM}$	1200	1600	1800	V
Non-repetitive peak off-state voltage	$T_j=25^{\circ}C$	$V_{DSM}$	1300	1700	1900	V
Non-repetitive peak reverse voltage	$T_j=25^{\circ}C$	$V_{RSM}$	1300	1700	1900	V
RMS on-state current	$T_C=85^{\circ}C$	$I_{T(RMS)}$	150			A
Peak on-state surge current	$t_p=10ms V_R=0.6V_{RRM}$	$I_{TSM}$	2200			A
$I^2t$ value for fusing	$t_p=10ms V_R=0.6V_{RRM}$	$I^2t$	24200			$A^2s$
Critical rate of rise of on-state current	$I_G=2 \times I_{GT}$	$di/dt$	150			$A/\mu s$
Insulation voltage	A.C 50Hz(1s/1min)	$V_{ISO}$	3600/3000			V

**Electrical Characteristics** (Packaged into V1-A-Pack, unless otherwise specified,  $T_{CASE}=25^{\circ}C$ )

Parameter	Test Conditions	Symbol	Values	Unit
Peak on-state voltage	$I_T=300A$ $t_p=380\mu s$	$V_{TM}$	$\leq 1.8$	V
Threshold voltage	$T_j=125^{\circ}C$	$V_{TO}$	$\leq 0.9$	V
Dynamic resistance	$T_j=125^{\circ}C$	$R_d$	$\leq 2.1$	m $\Omega$
Repetitive peak off-state current	$V_D=V_{RRM}$ $T_C=25^{\circ}C$	$I_{DRM1}$	$\leq 100$	$\mu A$
	$T_C=125^{\circ}C$	$I_{DRM2}$	$\leq 30$	mA
Repetitive peak reverse current	$V_R=V_{RRM}$ $T_C=25^{\circ}C$	$I_{RRM1}$	$\leq 100$	$\mu A$
	$T_C=125^{\circ}C$	$I_{RRM2}$	$\leq 30$	mA
Triggering gate current	$V_D=12V$ $R_L=30\Omega$	$I_{GT}$	20-120	mA
Holding current	$I_T=1A$	$I_H$	$\leq 250$	mA
Latching current	$I_G=1.2 I_{GT}$	$I_L$	$\leq 300$	mA
Triggering gate voltage	$V_D=12V$ $R_L=30\Omega$	$V_{GT}$	$\leq 1.8$	V
Non triggering gate voltage	$V_D=V_{DRM}$ $T_j=125^{\circ}C$	$V_{GD}$	$\geq 0.25$	V
Critical rate of rise of voltage	$V_D=2/3V_{DRM}$ $T_j=125^{\circ}C$ Gate Open	dv/dt	$\geq 1000$	V/ $\mu s$
Thermal resistance	Junction to case	$R_{th(j-c)}$	0.35	$^{\circ}C/W$

## Mechanical Characteristics

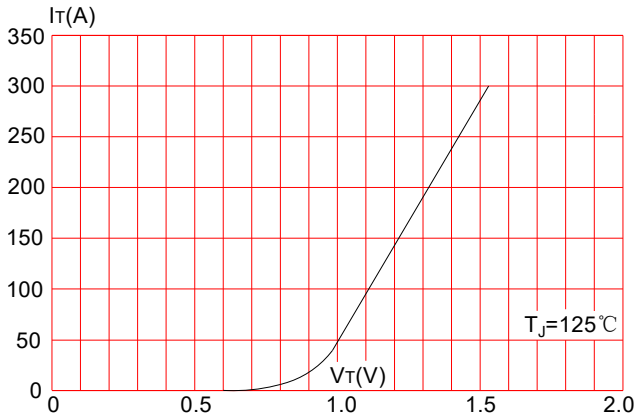
Module size	63x31.6mm					
Module height	21.6mm					
MS mounting torque to heatsink	2±15% Nm					
Weight	47±2g					
<p style="text-align: center;">Symbol</p>	Dimensions					
	Ref	Millimeters			Inches	
	Min	Typ	Max	Min	Typ	Max
A	2.85	3	3.15	0.112	0.118	0.124
B	2.3	2.5	2.7	0.091	0.098	0.106
C	1.9	2.1	2.3	0.075	0.083	0.091
D			6			0.236
E	16.25	17	17.75	0.640	0.669	0.699
F	0.55	0.65	0.75	0.022	0.026	0.030
G	20.85	21.6	22.35	0.821	0.850	0.880
H	30.85	31.6	32.35	1.215	1.244	1.274
I	23	23.5	24	0.906	0.925	0.945
J	0.17	0.67	1.17	0.007	0.026	0.046
K	10.5	11	11.5	0.413	0.433	0.453
L	6.5	7	7.5	0.256	0.276	0.295
M	49.5	50	50.5	1.949	1.969	1.988
N	51	51.5	52	2.008	2.028	2.047
O	62.25	63	63.75	2.451	2.480	2.510
P	10.25	11	11.75	0.404	0.433	0.463
Q	5.6	6.1	6.6	0.220	0.240	0.260
R	0.3	0.5	0.7	0.012	0.020	0.028
S	2.55	2.75	2.95	0.100	0.108	0.116
T	0.17	0.67	1.17	0.007	0.026	0.046
U	10.5	11	11.5	0.413	0.433	0.453
V	6.5	7	7.5	0.256	0.276	0.295
W	10.5	11	11.5	0.413	0.433	0.453
X	13.9	14.9	15.9	0.547	0.587	0.626
Y	10.3	11.3	12.3	0.406	0.445	0.484

## Ordering Information

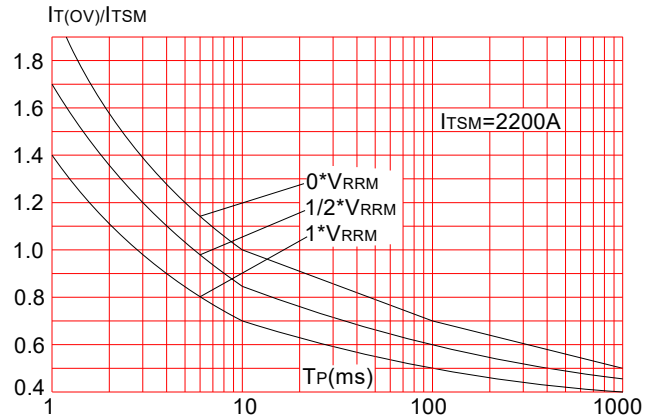
<b>JS</b> JieJie Semiconductor Co., Ltd	<b>151</b> $I_{T(RMS)}=150A$	<b>KQ</b> Module of anti-parallel of SCRs	<b>-16</b> $12:V_{DSM}/V_{RSM} \geq 1300V$ $16:V_{DSM}/V_{RSM} \geq 1700V$ $18:V_{DSM}/V_{RSM} \geq 1900V$
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**Performance Curves**

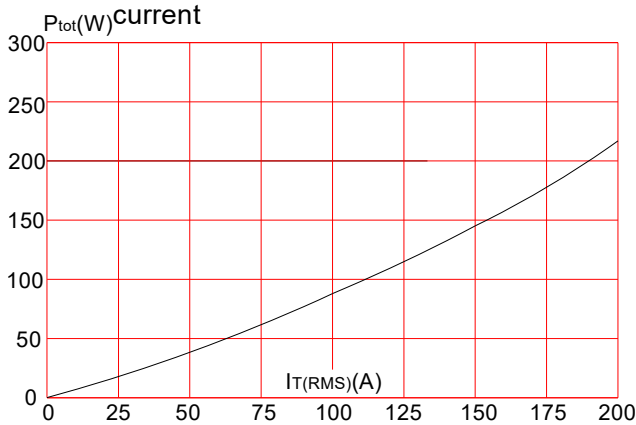
**FIG.1:** Forward characteristics(per thyristor)



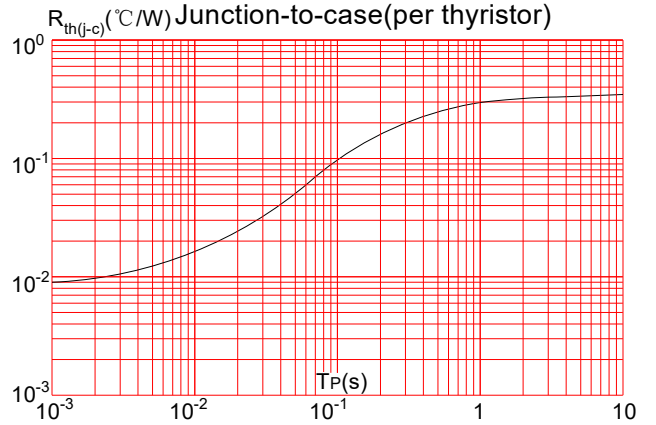
**FIG.2:** Surge overload current vs. time



**FIG.3:** Power dissipation per module vs. R.M.S. current



**FIG.4:** Maximum transient thermal impedance



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