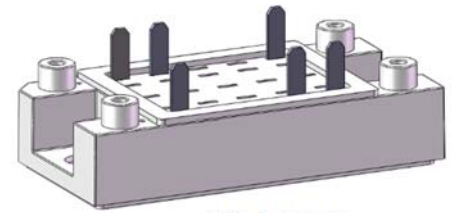


JS181KQ

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	$T_C=85^{\circ}C$	$I_{T(RMS)}$	180			A
Peak on-state surge current	$t_p=10ms$ $V_R=0.6V_{RRM}$	I_{TSM}	2500			A
I^2t value for fusing	$t_p=10ms$ $V_R=0.6V_{RRM}$	I^2t	31250			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	$I_T=360A$ $t_p=380\mu s$	V_{TM}	≤ 1.8	V
Threshold voltage	$T_j=125^{\circ}C$	V_{TO}	≤ 0.95	V
Dynamic resistance	$T_j=125^{\circ}C$	R_d	≤ 2.1	m Ω
Repetitive peak off-state current	$V_D=V_{RRM}$ $T_C=25^{\circ}C$	I_{DRM1}	≤ 100	μA
	$T_C=125^{\circ}C$	I_{DRM2}	≤ 40	mA
Repetitive peak reverse current	$V_R=V_{RRM}$ $T_C=25^{\circ}C$	I_{RRM1}	≤ 100	μA
	$T_C=125^{\circ}C$	I_{RRM2}	≤ 40	mA
Triggering gate current	$V_D=12V$ $R_L=30\Omega$	I_{GT}	20-120	mA
Holding current	$I_T=1A$	I_H	≤ 250	mA
Latching current	$I_G=1.2 I_{GT}$	I_L	≤ 300	mA
Triggering gate voltage	$V_D=12V$ $R_L=30\Omega$	V_{GT}	≤ 1.8	V
Non triggering gate voltage	$V_D=V_{DRM}$ $T_j=125^{\circ}C$	V_{GD}	≥ 0.25	V
Critical rate of rise of voltage	$V_D=2/3V_{DRM}$ $T_j=125^{\circ}C$ Gate Open	dv/dt	≥ 1000	V/ μs
Thermal resistance	Junction to case	$R_{th(j-c)}$	0.33	$^{\circ}C/W$

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>	<table border="1"> <thead> <tr> <th rowspan="3">Ref</th> <th colspan="6">Dimensions</th> </tr> <tr> <th colspan="3">Millimeters</th> <th colspan="3">Inches</th> </tr> <tr> <th>Min</th> <th>Typ</th> <th>Max</th> <th>Min</th> <th>Typ</th> <th>Max</th> </tr> </thead> <tbody> <tr><td>A</td><td>2.85</td><td>3</td><td>3.15</td><td>0.112</td><td>0.118</td><td>0.124</td></tr> <tr><td>B</td><td>2.3</td><td>2.5</td><td>2.7</td><td>0.091</td><td>0.098</td><td>0.106</td></tr> <tr><td>C</td><td>1.9</td><td>2.1</td><td>2.3</td><td>0.075</td><td>0.083</td><td>0.091</td></tr> <tr><td>D</td><td></td><td></td><td>6</td><td></td><td></td><td>0.236</td></tr> <tr><td>E</td><td>16.25</td><td>17</td><td>17.75</td><td>0.640</td><td>0.669</td><td>0.699</td></tr> <tr><td>F</td><td>0.55</td><td>0.65</td><td>0.75</td><td>0.022</td><td>0.026</td><td>0.030</td></tr> <tr><td>G</td><td>20.85</td><td>21.6</td><td>22.35</td><td>0.821</td><td>0.850</td><td>0.880</td></tr> <tr><td>H</td><td>30.85</td><td>31.6</td><td>32.35</td><td>1.215</td><td>1.244</td><td>1.274</td></tr> <tr><td>I</td><td>23</td><td>23.5</td><td>24</td><td>0.906</td><td>0.925</td><td>0.945</td></tr> <tr><td>J</td><td>0.17</td><td>0.67</td><td>1.17</td><td>0.007</td><td>0.026</td><td>0.046</td></tr> <tr><td>K</td><td>10.5</td><td>11</td><td>11.5</td><td>0.413</td><td>0.433</td><td>0.453</td></tr> <tr><td>L</td><td>6.5</td><td>7</td><td>7.5</td><td>0.256</td><td>0.276</td><td>0.295</td></tr> <tr><td>M</td><td>49.5</td><td>50</td><td>50.5</td><td>1.949</td><td>1.969</td><td>1.988</td></tr> <tr><td>N</td><td>51</td><td>51.5</td><td>52</td><td>2.008</td><td>2.028</td><td>2.047</td></tr> <tr><td>O</td><td>62.25</td><td>63</td><td>63.75</td><td>2.451</td><td>2.480</td><td>2.510</td></tr> <tr><td>P</td><td>10.25</td><td>11</td><td>11.75</td><td>0.404</td><td>0.433</td><td>0.463</td></tr> <tr><td>Q</td><td>5.6</td><td>6.1</td><td>6.6</td><td>0.220</td><td>0.240</td><td>0.260</td></tr> <tr><td>R</td><td>0.3</td><td>0.5</td><td>0.7</td><td>0.012</td><td>0.020</td><td>0.028</td></tr> <tr><td>S</td><td>2.55</td><td>2.75</td><td>2.95</td><td>0.100</td><td>0.108</td><td>0.116</td></tr> <tr><td>T</td><td>0.17</td><td>0.67</td><td>1.17</td><td>0.007</td><td>0.026</td><td>0.046</td></tr> <tr><td>U</td><td>10.5</td><td>11</td><td>11.5</td><td>0.413</td><td>0.433</td><td>0.453</td></tr> <tr><td>V</td><td>6.5</td><td>7</td><td>7.5</td><td>0.256</td><td>0.276</td><td>0.295</td></tr> <tr><td>W</td><td>10.5</td><td>11</td><td>11.5</td><td>0.413</td><td>0.433</td><td>0.453</td></tr> <tr><td>X</td><td>13.9</td><td>14.9</td><td>15.9</td><td>0.547</td><td>0.587</td><td>0.626</td></tr> <tr><td>Y</td><td>10.3</td><td>11.3</td><td>12.3</td><td>0.406</td><td>0.445</td><td>0.484</td></tr> </tbody> </table>						Ref	Dimensions						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
	Ref	Dimensions																																																																																																																																																																																																						
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

JS JieJie Semiconductor Co., Ltd	181 $I_{T(RMS)}=180A$	KQ Module of anti-parallel of SCRs	-16 $12: V_{DSM}/V_{RSM} \geq 1300V$ $16: V_{DSM}/V_{RSM} \geq 1700V$ $18: V_{DSM}/V_{RSM} \geq 1900V$
--	---------------------------------	--	--

Performance Curves

FIG.1: Forward characteristics(per thyristor)

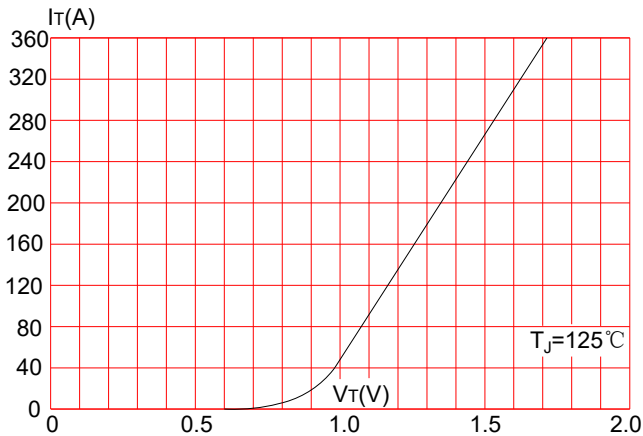
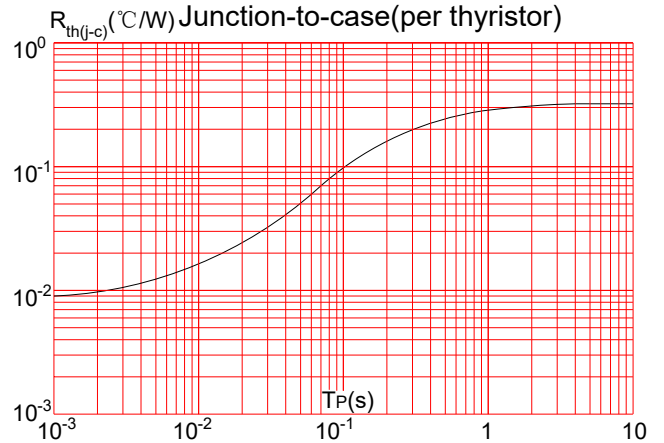


FIG.2: Maximum transient thermal impedance




Information furnished in this document is believed to be accurate and reliable. However, JieJie Semiconductor Co., Ltd. assumes no responsibility for the consequences of use without consideration for such information nor use beyond it.

Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, JieJie complies with the agreement.

Products and information provided in this document have no infringement of patents. JieJie assumes no responsibility for any infringement of other rights of third parties which may result from the use of such products and information.

This document is the 0.1st version which is made in 15-Aug.-2024. This document supersedes and replaces all information previously supplied.

 is registered trademarks of JieJie Semiconductor Co., Ltd. Copyright©2024 Semiconductor Co., Ltd. Printed All rights reserved.