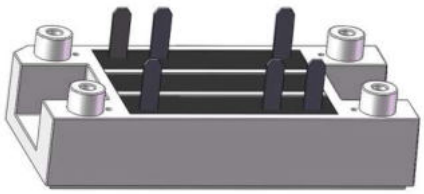
Anti-parallel Module



V1-A-Pack

Description:

1)A package consists of two inverse parallel SCR chips,which non-repetitive peak off-state voltage is up to 2300V

2) Welding by vacuum welding technology, which provide high reliability

3) Insulated by silicone gel, provide a insulation voltage of 3000V~

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℃)

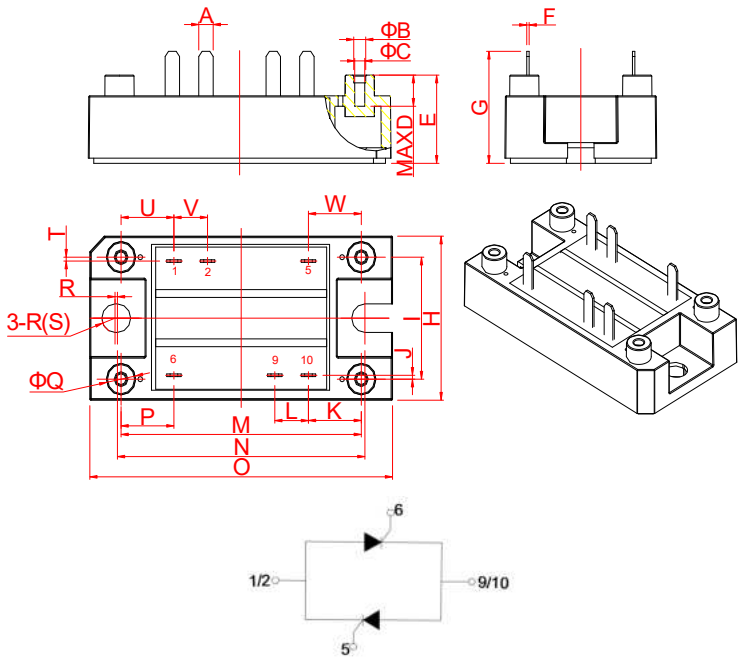
Parameter	Test Conditions	Symbol	Values			Unit
			18	20	22	
Operating junction temperature range		T_j	-40-125			℃
Storage temperature range		T_{stg}	-40-125			℃
Repetitive peak off-state voltage	T_j=25℃	V_{DRM}	1800	2000	2200	V
Repetitive peak reverse voltage	T_j=25℃	V_{RRM}	1800	2000	2200	V
Non-repetitive peak off-state voltage	T_j=25℃	V_{DSM}	1900	2100	2300	V
Non-repetitive peak reverse voltage	T_j=25℃	V_{RSM}	1900	2100	2300	V
RMS on-state current	T_C=85℃	$I_{T(RMS)}$	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	11250			A^2s
Critical rate of rise of on-state current	I_G=2×I_{GT}	dI/dt	150			A/μs
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℃)

Parameter	Test Conditions	Symbol	Values	Unit
Peak on-state voltage	I_T=300A t_P=380μs	V_{TM}	≤1.8	V
Threshold voltage	T_j=125℃	V_{TO}	≤0.95	V
Dynamic resistance	T_j=125℃	R_d	≤2.1	mΩ
Repetitive peak off-state current	V_D=V_{RRM} T_C=25℃ T_C=125℃	 I_{DRM1} I_{DRM2}	 ≤100 ≤30	 μA mA
Repetitive peak reverse current	V_R=V_{RRM} T_C=25℃ T_C=125℃	 I_{RRM1} I_{RRM2}	 ≤100 ≤30	 μA mA
Triggering gate current	V_D=12V R_L=30Ω	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=30Ω	V_{GT}	≤1.8	V
Non triggering gate voltage	V_D=V_{DRM} T_j=125℃	V_{GD}	≥0.25	V
Critical rate of rise of voltage	V_D=2/3V_{DRM} T_j=125℃ Gate Open	dv/dt	≥1000	V/μs
Thermal resistance	Junction to case	$R_{th(j-c)}$	0.35	℃/W

Mechanical Characteristics

Module size	63x31.6mm
Module height	21.6mm



Symbol

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	0.4	0.5	0.6	0.016	0.020	0.024
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	0.25	0.75	1.25	0.010	0.030	0.049
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	1.989	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	0.25	0.75	1.25	0.010	0.030	0.049
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

Ordering Information

AK — Aiko Electronics Technology Co., LTD

152 — $I_{T(RMS)}$=150A

KQ — Module of anti-parallel of SCRs

-22
- 18:$V_{DSM}/V_{RSM} \geqslant$1900V
- 20:$V_{DSM}/V_{RSM} \geqslant$2100V
- 22:$V_{DSM}/V_{RSM} \geqslant$2300V