光伏防反二极管
PHOTOVOLTAIC ANTI DIODE

概述 SUMMARY

使用条件及注意事项 CONDITIONS OF USE AND NOTICE：

○使用环境应无剧烈振动和冲击，环境介质中应无腐蚀金属和破坏绝缘的杂质和气氛。
○模块管芯工作结温：二极管为-40℃-150℃；环境温度不得高于40℃；环境湿度小于86%。
○模块在使用前一定要加装散热器，散热可采用自然冷却、强迫分冷当应用于实际负载电流大于40A的设备时般都需要选择强迫风冷设计。设计强迫分冷时，风速应大于6米／秒。
○设备开机运行30分钟—60分钟达到热平衡后。我们要求防反二极管安装的散热器最高有效温升小于50℃。即当散热器工作的环境温度在25℃时散热器的温度应该小于75℃，如果环境温度达到45℃时，散热器的温度应该小于95℃。
○必须保证控制柜内空气与柜体外空气循环流动。当防反二极管模块安装于控制柜内时，必须在控制柜顶部安装2-3台往柜体外抽风的轴流风玑（热风是往上升的，有利于散热）同时控制柜靠近底部四周需要多设置百叶窗。
○ The use of the environment should be no violent vibration and impact, environmental medium impurities and atmosphere without corrosion and damage to the insulation of.
○ module die junction temperature: -40~150℃diode, environmental temperature not higher than 40℃; environmental humidity is less than 86% Module.
○ before use must install radiator, heat can be forced by natural cooling, cold when applied to the actual load current is more than 40A devices, generally need to choose a forced air cooling system Forced cold, wind speed should be greater than 6m/s,
○ equipment up and running 30 minutes-60 minutes. reached thermal equilibrium We require anti diodes mounted radiator temperature less than 50℃ the highest effective When the radiator is the work environment at the temperature of 25℃, the temperature of the radiator should be less than 75 DEG C; if the environment temperature At 45℃, the temperature of the radiator should be less than 95℃.
○ must ensure that the control of air and the cabinet body circulation flow of air in the cabinet When the anti reverse diode module installed in the control cabinet, control cabinet must be installed on the top of the 2-3 platform to the cabinet body ventilation of the axial flow fan (hot air is rising, conducive to heat dissipation). and control cabinet Near the bottom around the need to set the shutter.

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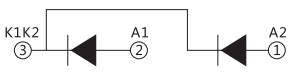
安装注意事项 Installation Notes:

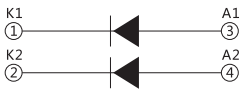
○由于GJMH系列光伏防反二极管模块是绝缘型（即模块接线柱对铜底板之间的绝缘耐压大于3.1KV有效值），因此可以把多个模块安装在同一散热器上，或装置的接地外壳上；
○散热器安装表面应平整、光滑，不能有划痕、磕碰和杂物。散热器表面光洁度应小于10μm。模块安装到散热器上时，在他们的接触面之间应涂一层很薄的导热硅脂。涂脂前，用细砂纸把散热器接触面的氧化层去掉，然后用无水乙醇把表面擦干净，使接触良好，以减少热阻。模块紧固到散热器表面时，采用M5或M6螺钉和弹簧垫圈，并以4NM力矩紧固螺钉于模块主电极的连线应采用铜排，并有光滑平整的接触面，使接触良好。模块工作3小时后，各个螺钉须再次紧固一遍，模块散热器选择用户选配散热器时，必须考虑一下因素；
○模块工作电流大小，以决定所需散热器面积；
○使用环境，据此可以确定采取什么冷却方式——自然冷却、强迫风冷、还是水冷；
○装置的外形、体积、给散热器预留空间的大小，据此可以确定采用什么形状的散热器。
○ because GJMH series photovoltaic anti diode module is insulated type (i.e. module wiring column on the insulation between the copper plate is greater than the 3.1KV value), so you can put a plurality of modules are installed in the same radiator, or device grounding shell.
○ radiator mounting surface should be flat, smooth, no scratches, bump and sund ries. The radiator surface finish should be less than 10 μ M. Module is installed in the radiator, between their contact surface thermal grease coated with a thin layer of. Grease, with fine sandpaper to heaThe contact surface of the oxide layer is removed, and then ethanol wipe the surface, make good contact, in order to reduce the thermal resistance. Module is fastened to the surface of the radiator, using M5 0r M6 screw and spring washer, and shall be recovera ble by the 4N M torque fastening screws on the module main electrode attachment Copper bar, and a contact surface smooth, make good contact. Module 3 hours later, all the screws to tighten again again. Select the user selection module radiator radiator, must consider the following factors:
○ The size of the module working current, to determine the required radiator area;
○ The use of the environment, we can determine what cooling way -- natural cooling, forced air cooling or water cooling;
○ The device shape, volume, to the radiator reserved space size, which can be determined by what the shape of the radiator.

典型电路电联结型式 CICRCUIT CONFIGUATIONS



MDK

MD



MDK2

规格参数 SPECIFICATION

型号 Type	IT(AV) A	VRRM V	VTM@IFM V	VTM@IFM A	IRRM mA	IF(RMS) A	IFSM Ax100	Rjc ℃/W	Tjm ℃	Viso V(AC)	外形 Outine
MD/MDK25A	25	1600-2500	0.9	80	8	41	0.65	1.300	1.300	2500	4
MD/MDK55A	55	1600-3000	0.9	170	8	86	1.30	0.700	0.700	2500	4
MD/MDK90A	90	1600-3000	0.9	270	8	141	2.30	0.470	0.470	2500	4
MD/MDK110A	110	1600-3000	0.9	330	8	173	2.60	0.350	0.350	2500	4
MD/MDK130A	130	1600-3000	11	410	12	212	3.90	0.310	0.310	2500	5
MD/MDK160A	160	1600-3000	1.1	480	12	251	6.00	0.230	0.230	2500	5
MD/MDK200A	200	1600-3500	1.1	600	12	314	8.00	0.210	0.210	2500	7
MD/MDK250A	250	1600-3500	1.38	750	20	393	11.0	0.140	0.14 0	2500	7
MD/MDK300A	300	1600-3500	1.38	900	20	471	12.5	0.130	0.130	2500	7
MD/MDK350A	350	1600-3500	1.38	1050	30	550	15.0	0.110	0.110	2500	8
MD/MDK500A	500	1600-3500	1.38	1500	40	785	21.0	0.90	0.90	2500	8
MD/MDK600A	600	1600-3500	1.38	1500	40	785	12.0	0.130	0.130	2500	9
MD/MDK800A	800	1600-3500	1.45	1800	40	942	15 0	0.110	0.110	2500	11
MD/MDK1000A	1000	1600-3500	1.45	2400	40	1256	18.0	0.080	0.080	2500	12

光伏防反二极管 PHOTOVLTAIC ANTI DIODE

特点 Features :

○ 芯片与底板电气绝缘，2500V交流电压；
○ 全压接结构，优良的温度特性和功率循环能力；
○ 体积小，重量轻；
○ 最高工作结温达150℃，正向压降小。
○ Chips are electrically insulated from bottom plate.
○ Sealin com pliance with international standard Pressure type.
○ Excellent power/volume ratio.
○ Maximumjunction temperature up to 150℃, Low forward woltage drop.

典型应用 Application :

○ 光伏汇流箱；
○ 光伏直流柜；
○ 光伏直流系统。
○ PVjunction box.
○ PV DC cabinet.
○ PV DC system.

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概述 SUMMARY

符号 Symbol	参数Parameters	测试条件Test conditions	结温 TJ(℃)	参数值Parameter values 最小Lea	典型Typ	最大Max	单位 Company
$I_F(AV)$	正向平均电流	180°正弦半波，50Hz，单面散热，T_c=100℃	150	600		85	A
$I_F(MS)$	方均根电流		150			86	A
V_M	反向重复峰值电压	V_M tp=10ms，V_{SM}=V_M 200V	150			1800	V
I_M	反向重复峰值电流	V_M=V_M	150			8	MA
I_{FSM}	正向不重复浪涌电流	10ms宽底，正弦半波，V=0.6V_m	150			1.30	A
I^2t	浪涌电流平方时间积					8.6	A2S103
V_F	门槛电压					0.80	V
R_t	斜率电阻					3.47	MΩ
V_{FM}	正向峰值电压	I_{FM}=170A	25			1.45	V
th(jc)	热阻抗（结至散热器）	180°正弦半波，单面散热				0.700	℃/W
th(ch)	热阻抗（结至散热器）	180°正弦半波，单面散热				0.2	℃/W
V_{iso}	绝缘电压	50Hz, .M.S,T=1MIN, I iso 1MA(MAX)		2500	2500		V
V_m	安装扭矩(M5)				4		m
	安装扭矩(M6)				6		m
T_{stg}	贮存温度			40		125	℃
W_t	质量	外形为101F			115		g
Size	包装盒尺寸	210×113×42(10只装)					mm

性能曲线图 CHARACTERISTICS CURVE

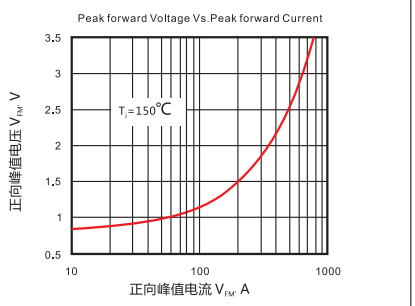

Fig.1 正向伏安特性曲线

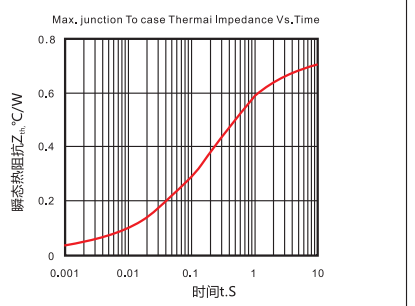

Fig.2 瞬态热阻抗曲线

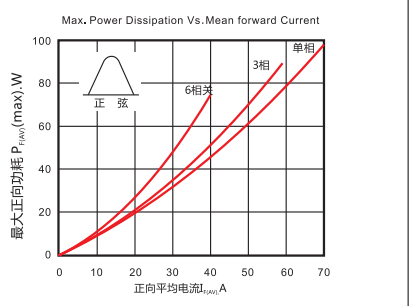

Fig.3 最大正向功耗与平均电流的关系曲线

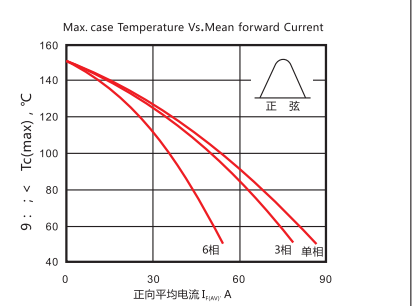

Fig.4 管壳温度与正向平均电流的关系曲线

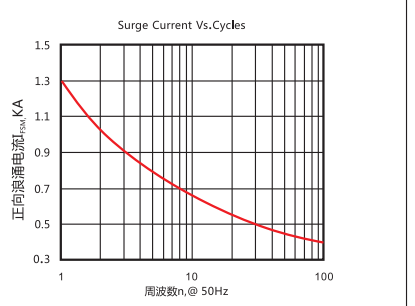

Fig.7 正向浪涌电流与周波数的关系曲线

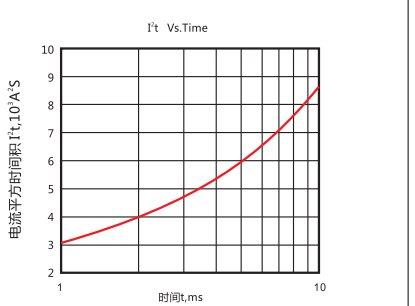

Fig.8 I^2t特性曲线