



厦门华联电子股份有限公司

Xiamen Hualian Electronics Corp., Ltd.

产品规格书

SPECIFICATION

产品名称：光 MOS 固态继电器

DESCRIPTION: Photo MOSFET Solid State Relay

产品型号：HSSR-S1A0A-2

PART NO.: HSSR-S1A0A-2

拟制 Prepared	审核 Verified	批准 Approved

电话 Tel: 86-0592-2950777

传真 Fax: 86-0592-6037471

网址 Web: www.xmhl.com

地址：厦门市思明区前埔路 502 号

Add: No.502, Qianpu Road, Siming District, Xiamen China

邮编 P.C.: 361008

1 概述 General

产品 HSSR-S1A0A-2 由砷化铝镓红外发光二极管作为输入级耦合到高电压输出光探测电路。光探测电路由高速光电二极管阵列和驱动电路构成，用以开启/关断两个独立的高压金属氧化物半导体场效应管 (MOSFET)。一个最小 5mA 的电流流经输入级红外发光二极管可确保继电器动作。当加在输入级红外发光二极管的正向压降为 0.8V 或更小值时，继电器可确保复位。产品见图 1。



图 1 产品 Figure 1-Product

The HSSR-S1A0A-2 consists of a AlGaAs infrared emitting diode input stage optically coupled to a high-voltage output detector circuit. The detector consists of a high-speed photovoltaic diode array and driver circuitry to switch on/off two discrete high voltage MOSFETs. The relay action with a minimum input current of 5mA through the input LED. The relay reset with an input voltage of 0.8V or less. Products shown in Figure 1.

2 特点 Features

- 微型光 MOS 固态继电器。Micro Photo MOSFET Solid State Relay.
- 单通道常开型单刀单掷继电器。Single Channel Normally On Single-Pole-Single-Throw (SPST) Relay.
- 30V 输出耐压产品。30V Output Withstand Voltage.
- 1800mA 额定电流产品。1800mA Current Rating.
- 低输入电流，CMOS 兼容。Low Input Current: CMOS Compatibility.
- 非常快的开关速度：典型值 0.5ms (Ton), 0.2ms (Toff)。
High Speed Switching: 0.5ms (Ton), 0.2ms (Toff) Typical
- 高输入输出绝缘耐压：3750 Vrms for 1 min。
High Input-to-Output Insulation Voltage: 3750 Vrms for 1 min.

3 应用 Applications

- 电信切换。Telecommunication Switching.
- 数据通讯。Data Communications.
- 电池管理。Battery Management.
- 工业控制。Industrial Controls.
- 医疗设备。Medical Equipment.
- EMR/机械继电器替代。EMR / Reed Relay Replacement.

4 电原理图 Schematic Diagram

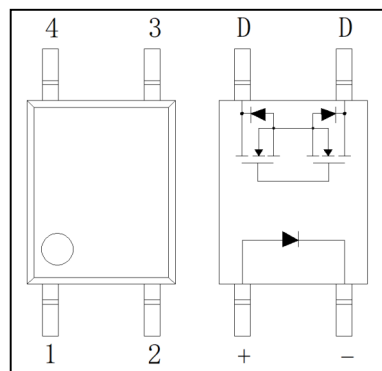


图 2 电原理图

Figure 2-Schematic

5 极限参数 Absolute Maximum Ratings

表 1 极限参数

Table 1-Absolute Maximum Ratings

参数名称 Characteristic		符号 Symbol	额定值 Rating	单位 Unit
输入端 Input	正向电流 Forward Current	I_F	50	mA
	反向电压 Reverse Voltage	V_R	5	V
	耗散功率 Power Dissipation	P_M	75	mW
输出端 output	开关电压 Switching Voltage	$V_{O(MAX)}$	30	V
	连续通态电流 Continuous load current	$I_{O(MAX)}$	1800	mA
	耗散功率 Power dissipation	P_C	360	mW
工作温度 Operating temp.		T_{aop}	-40 ~ +105	°C
贮存温度 Storage temp.		T_{stg}	-55 ~ +125	°C
焊接温度 Soldering Temperature (10 Sec max.)		T_{sld}	260	°C
绝缘电压 Isolation voltage (RH≤60%,交流 1 分钟) (RH≤60%, AC 1min.)		V_{ISO}	3750	V_{rms}

6 光电参数 Opto-Electrical Characteristics

表 2 光电参数

Table 2-Opto-Electrical Characteristics

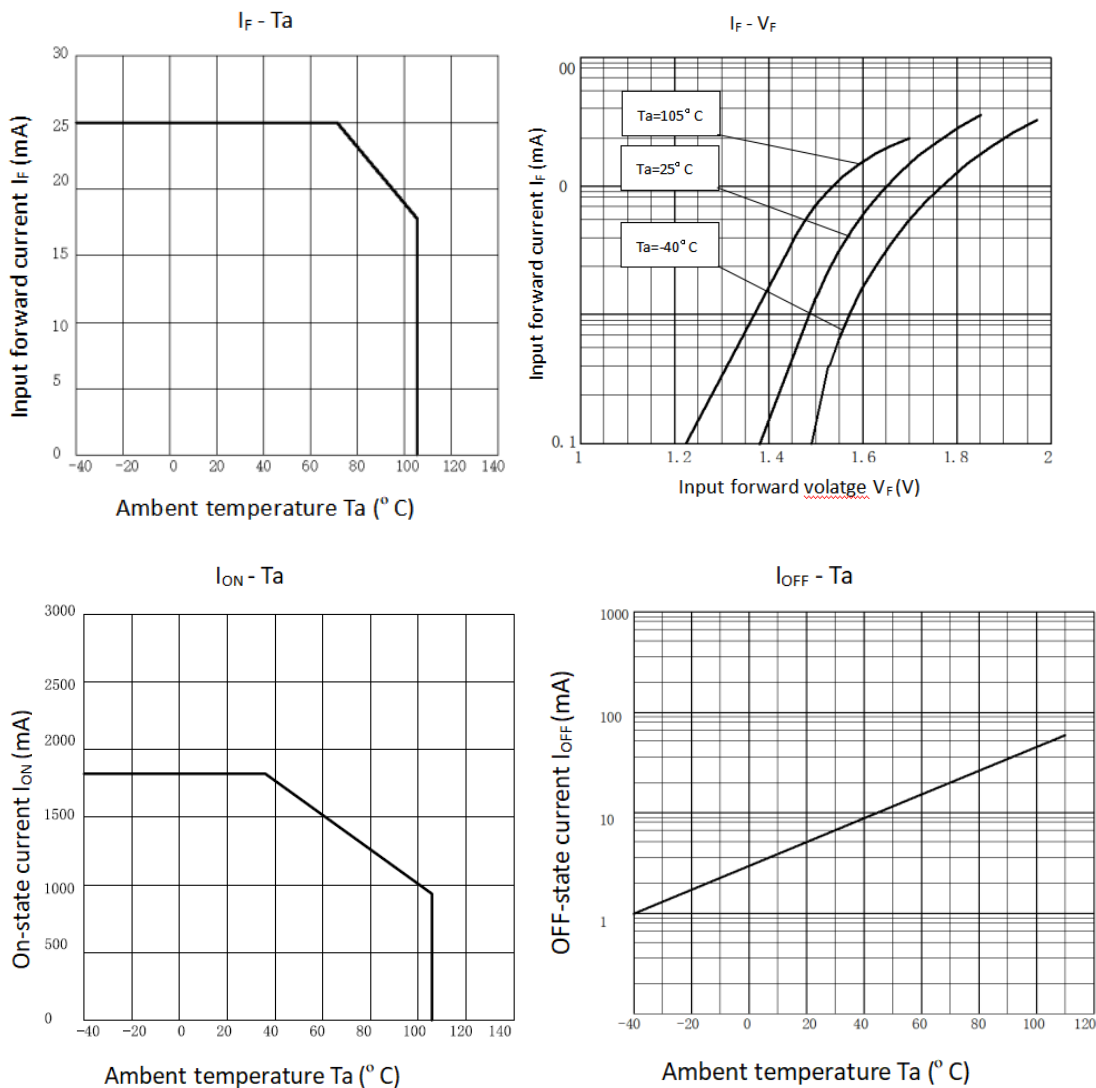
$T_a=25^{\circ}C$

参数名称 Characteristic	符号 Symbol	测试条件 Test conditions	最小值 Min.	典型值 Typ.	最大值 Max.	单位 Unit
输入端 Input	正向电压 Forward voltage	V_F	$I_F=10mA$	1.2	1.4	V
	反向电流 Reverse current	I_R	$V_R=5V$		10	uA
	动作电流 Action Current	$I_{F(ON)}^a$	$I_O=1800mA$	0.5	3	mA
	复位电流 Reset Current	$I_{F(OFF)}$	$I_O=1800mA$	0.35	0.5	mA
输出端 Output	断态漏电流 OFF-State Leakage Current	I_{OFF}	$V_O=30V$		1	uA
	导通电阻 ON Resistance	R_{ON}	$I_O=1800mA, I_F=10mA$ $t < 1s$		100	mΩ
	输出电容 Output Capacitance	C_O	$V_{OFF}=0V,$ $f_o = 1MHz$	500		pF
传输 Xfer	动作时间 Action Time	T_{ON}	$I_F=10mA, I_O=1800mA$		0.5	ms

	复位时间 Reset Time	T_{OFF}	$I_F=10mA, I_O=1800mA$		0.2	ms
	耦合电容 Coupled Capacitance	$C_{I/O}$		0.5		pF
隔离 Isolation	绝缘电压 Isolation voltage	V_{ISO}	$I_{off} \leq 0.3mA,$ AC, 60s	3750		V

^a 保证所有器件在 I_F 值小于或等于最大的 $I_{F(ON)}$ 时动作。
It is guaranteed that all devices active when I_F value is less than or equal to the maximum value of $I_{F(ON)}$.

7 特性曲线 Performance Curves



8 外形尺寸及电原理图 Dimensions and Circuit Diagram

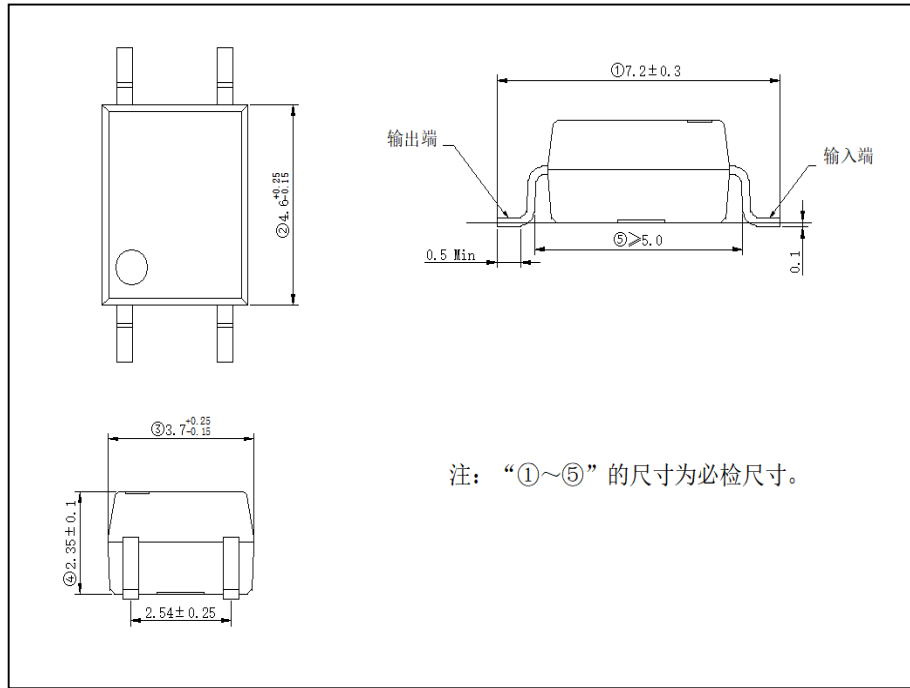


图 3 HSSR-S1A0A-2 外形尺寸

Figure 3- The dimensions of HSSR-S1A0A-2

9 标志 Mark

产品上应有型号、公司商标、生产日期代码、引出端识别标记。例如：HSSR-S1A0A-2 产品印章如图 4。

Print type characters, trade mark and Lot.No.on the Photo Coupler. For example the marking of product HSSR-S1A0A-2 is shown as figure 4.



图 4 产品印章

Figure 4- Marking