公司简介/ Introduction

厦门市硅兆光电科技有限公司是专业从事光电继电器(固态继电器)研发及销售的企业。公司遵循“专业，专注，专心”的企业精神。

公司整合了国内外专业光耦合芯片、功率 MOSFET、可控硅等芯片企业的优势，开创性应用多芯片组装，融合了国内外固态继电器应用领域的经验，专注于打造电机控制、通信及仪器仪表应用方面的光电继电器，为客户提供专业的解决方案。坚持创新与研发并重，坚持市场为导向，以产品质量为中心，以客户满意为目标，力争成为全球主要的固态继电器 SSR（光电继电器）的供应商之一。

公司提供了一个多学科融合、集成的平台，为理念相同的有志之士搭建了实现梦想的舞台，共同努力实现中国梦，公司梦，大家的梦。

硅兆公司同时保障客户、员工及股东的利益，确保企业的可持续发展。

Xiamen Silicon-top Opto Electronics Co.,Ltd is a company which is engaged in designing and selling Solid State Relay (SSR or Opto relay),holds the creed of “Profession, Focus, Dedication” as company spirit.

We absorb the latest technologies and advantages from abroad and domestic companies who are the professional manufacturers in the field of Opto-coupler, Triac and MOSFET, develop the multi-chips module in one Package technologies and design the new SSR.

We focus on developing the professional solution of SSR, such as motor control, communication devices and testing equipments.

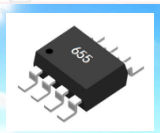
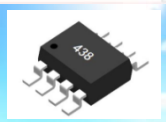
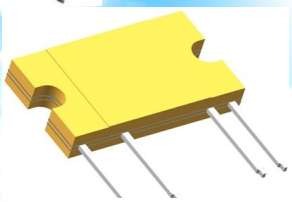
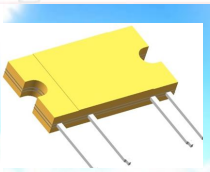
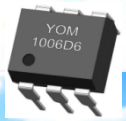
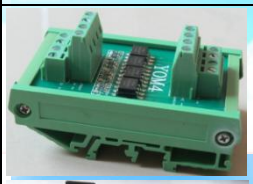
We persist in innovation and creation, on behalf of customer satisfication and product quality, and dedicate to be the major global SSR suppliers.

We dedicate to build a platform for those who have the same ambitions , to develop the latest technologies in the field of semiconductor device,design and research the core patents。

目录/Contents

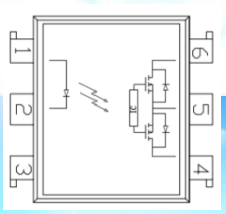
选型指南/Guide for selection					
型号/Type	规格/Part Number	驱动/drive mode	负载电压/Load voltage	额定负载/rating current	备注/note
光 MOS 继电器/opto-MOS	YOM2/1006	电流型/Current	DC 40V	900mA*2 路	
	YOM1006		DC 40V AC 24V	900mA	
	YOM3050		DC 400V AC 220V	300mA	
	YDS1006		DC 60V	2 A	
	YDS1/6060		DC 450V AC 380V	600mA	
	YDS1/9060		DC 450V AC 380V	900mA	
	YDS2/4006		DC 40V	4A	
	YDS2/8006		DC 40V	7A	
	YES2/10A 60V		DC 40V	10A	
固态继电器/SSR	YAS1D1.2P22		AC 220V	1.2A	调相/random
	YAS1D1.2Z22		AC 220V	1.2A	过零/zero cross
	YAS2D2P22		AC 220V	2A	调相/random
	YAS2D2Z22		AC 220V	2A	过零/zero cross
双 MOS 场效应管/MOSFET	YPN438S	电压/voltage	DC 30V	10A	
	Y2N655S		DC 40V	10A	
继电器模块/Relay Module	YOM4/24D2006	电压/voltage 24V	DC 40V	2A*4	
	YSM2/24D5P22		AC 220V	5A*2	调相/random

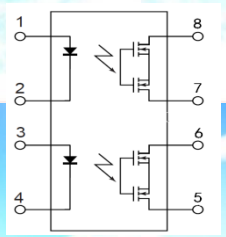
产品简介/Product introduction

产品类别/Type	应用领域/ Field	应用场合/ Applications	推荐型号/Recommend Product
双 MOS 场效应管/MOSFET	小型直流电机/DC Motor	按摩器材、打印机、空调摆叶、玩具、DC-DC 功率变换、直流电机调速/Massage machine、Printer、Toys、High efficiency DC/DC converters、DC motor speed regulation	 
固态继电器/SSR	小功率交流电机、小功率加热、电磁阀控制等/AC motor、heating、Solenoid	空调、微波炉、洗衣机、冰箱、热水器、各类阀门的控制、LED 灯具开关控制、智能卫浴、交流电机调速/Home appliances(air conditioners,microwave ovens,washing machines,refrigerators, inductive heating cooker,water heaters etc.)、Intelligent bathroom、AC motor speed regulation	 
光 MOS 继电器/opto-MOS	隔离通信、工业控制/Isolated communication、Industrial control	高速检测设备、PLC 隔离控制、开关电源、交通信号控制、测试设备、工业设备/High-speed inspection machines、PLC control、Switching Mode Power Supply、Traffic signals 、Measuring instruments Industrial machines	   
继电器模块/Relay Module	PLC 工业控制/PLC Industrial control	自动化设备 、高速检测设备/Auto equipment、High-speed inspection machines	  

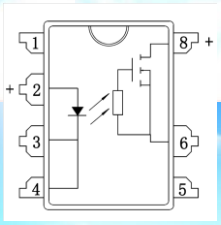
光 MOS 继电器/Opto-MOS Relay

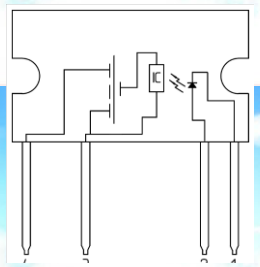
概述/General Features





- ●光电隔离/ Optoelectronic isolation
- ●高可靠性/High reliability
- ●电磁兼容性能好/High EMC
- ●符合 RoHS/ RoHS compliant





应用/Applications

- ●高速检测设备/High-speed inspection machines
- ●程控交换设备/Communication equipment
- ●计算机/Computer

特性参数/Parameter

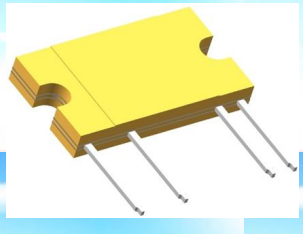
型号/Part Number	封装形式/Package	触发电流/Trigger current(mA)	额定电流/Trigger current(mA)	测试条件/test condition				介质耐压/Diclectric Strength (Vrms)	工作温度/Operating temperature (℃)
				R_{DS} (Ω)	Peak current (A)	T_{on} (ms)	T_{off} (ms)		
YOM 1006	DIP6/SMD6	5	0.9	0.1	1.8	2	1	5000	-40~85
YOM2 1006	DIP8/SMD8	5	0.9	0.1	1.8	2	1	3000	-40~85
YOM 3050	DIP6/SMD6	5	0.3	8	0.9	2	1	5000	-40~85
YDS1 6060	SMD7/DIP7	10	0.6	5	1.2	2	1	1500	-40~85
YDS1 9060		10	0.9	2.5	1.8	2	1	1500	-40~85
YDS1006	SMD7/DIP7	8	2	0.1	4	2	1	4000	-40~85
YDS2 4006	SIP4	10	4	0.1	7	2	1	2500	-40~85
YDS2 8006	SIP4	10	8	0.08	12	2	1	2500	-40~85

订货信息/Ordering information

YOM 订货标记/YOM Ordering information							
	Y	OM	2	100	6	D	6
公司商标代号 Company Symbol							
输出型：OM MOS；SM cool MOS							
组数 group：默认 1 组　2：2 组							
负载电流 load current:10-100mA;16-160mA;30-300mA;40-400mA;100-1000mA							
击穿电压 BVDSS：6-60V；10-100V；20-200V；35-350V；50-500V							
D:DIP　S:SMD							
4:4PIN　6:6PIN　8:8PIN							

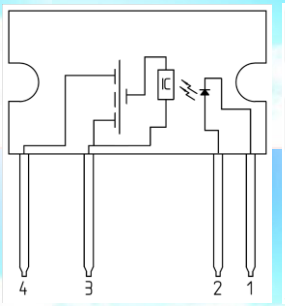
YDS 订货标记/YDS Ordering information						
	Y	DS	1	60	60	D
公司商标代号 Company Symbol						
MOS 输出型 SSR						
1:DIP/SMD8						
负载电流 load current:30-300mA;40-400mA;60-600mA;100-1000mA						
击穿电压 BVDSS：6-60V；10-100V；20-200V；35-350V；60-600V						
D:DIP　S:SMD						

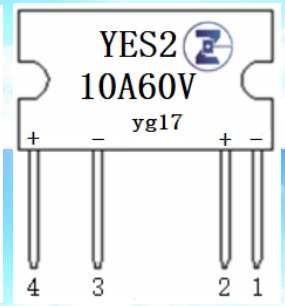
大功率光 MOS 继电器/Opto-Power MOS Relay



概述/General Features

- ●光电隔离/ Optoelectronic isolation
- ●高可靠性/High reliability
- ●电磁兼容性能好/High EMC
- ●符合 RoHS/ RoHS compliant





应用/Applications

- ●开关电源 /Switching Mode Power Supply
- ●交通信号控制/Traffic signals
- ●测试设备/Measuring instruments
- ●工业设备/Industrial machines

特性参数/Parameter

型号/Part Number	封装形式/Package	触发电流/Trigger current(mA)	额定电流/Trigger current(mA)	测试条件/test condition				介质耐压/Diclectric Strength (Vrms)	工作温度/Operating temperature (℃)
				R_{DS} (mΩ)	Peak current (A)	T_{on} (ms)	T_{off} (ms)		
YES2 10A60V	SIP4	10	10	15	20	5	1	2500	-40~85
YES2 5A600V	SIP4	10	5	90	8	2	1	2500	-40~85

订货信息/Ordering information

	Y	ES	2	10 A	60 V

公司商标代号
Company Symbol

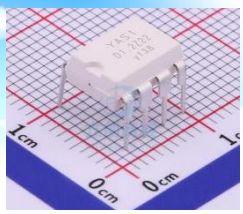
ES：POWER MOS

封装形式：SIP4

负载电流 load current:10-10A;16-16A; 100-100A

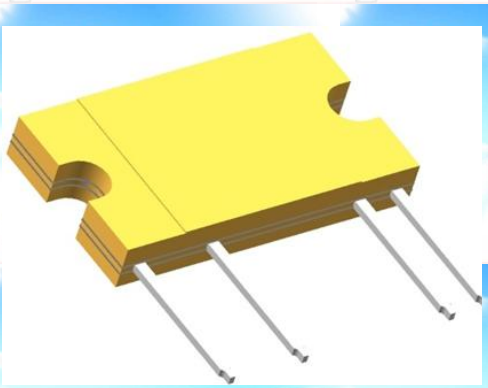
击穿电压 BVDSS: 6-60V; 10-100V; 20-200V; 35-350V; 50-500V

固态继电器/SSR



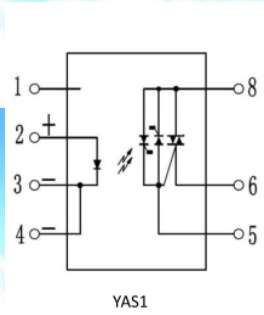
概述/General Features

●高可靠性/ High reliability
●光电隔离/ Optoelectronic isolation
●高阻断电压/ High repetitive peak off-state voltage
●电磁兼容性能好/High EMC
●符合 RoHS/ RoHS compliant
●符合 UL E481250
●符合 TUV - R 50466012

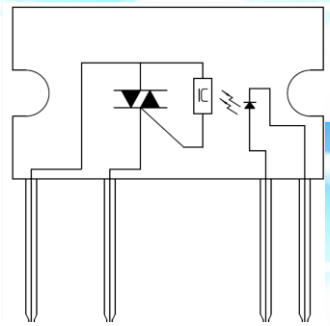


应用/Applications

●家电产品（空调、冰箱、洗衣机微波炉等的风扇、加热、进出水开关、等控制）
●Home appliances (air conditioners, microwave ovens, washing machines, refrigerators, inductive heating cooker, water heaters etc.)
●智能卫浴/Intelligent bathroom



YAS1



YAS2

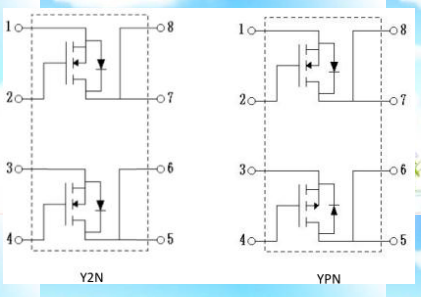
特性参数/Parameter

型号/Part Number	封装形式/Package	触发电流/Trigger current(mA)	额定电流/Trigger current(mA)	测试条件/test condition				介质耐压/Diclectric Strength (Vrms)	工作温度/Operating temperature (℃)
				Output on-state voltage drop(V)	Peak current (A)	T_{on} (ms)	T_{off} (ms)		
YAS1 D0.6P22	DIP7/SMD7	8	0.6	2.5	12	1	1+1/2cycle	2500	-40~85
YAS1 D1.2P22		8	1.2	2.5	12			2500	-40~85
YAS2 D2P22	SIP4	8	2	2.5	15			3000	-40~85
YAS1 D0.6Z22	DIP7/SMD7	8	0.6	2.5	12	1+1/2cycle	1+1/2cycle	2500	-40~85
YAS1 D1.2Z22		8	1.2	2.5	12			2500	-40~85
YAS2 D2Z22	SIP4	8	2	2.5	15			3000	-40~85

订货信息/Ordering information

YAS 订货信息/YAS Ordering information								
	Y	AS	1	D	1.2	P	22	()
公司商标代号 Company Symbol								
交流输出型 AC SSR								
封装 封装形式/Package: 1:DIP7/SMD7; 2:SIP4								
输入电流型 Current driving:D								
负载电流 Load current: 1-1A; 1.2-1.2A; 2-2A								
Z:过零 Zero-cross P:调相 Non zero-cross								
负载电压 Load voltage: 22:220Vac 38:380Vac								
用户特殊编号 Special code								

MOS 场效应管/Power MOSFET



概述/General Features

- ●沟槽技术/Super trench MOSFET
- ●低导通电阻/Low on-resistance $R_{DS(on)}$
- ●低栅极电荷减少开关损耗/Low gate charge minimize switching loss
- ●内置快恢复二极管/Fast recovery body diode

应用/Applications

- ●高效直流/直流转换器/High efficiency DC/DC converters
- ●同步整流器/Synchronous rectification
- ●电机驱动/Motor drive
- ●按摩器材/Massager machine
- ●办公设备/Office equipment
- ●智能卫浴/Intelligent bathroom

特性参数/Parameter

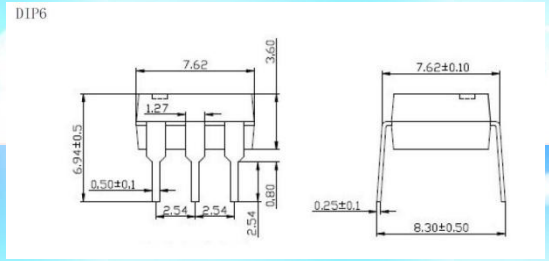
沟道/channel	型号/Part Number	封装形式/Package	$V_{(BR)DSS}$ (V)	I_D(A) T_A=25℃	P_D(W) T_A=25℃	V_{GS}(V)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ) @V_{GS}=10V, T_A=25℃	
							Typ	Typ	Max
N	YPN 438S	SOP8	40	12.2	2.5	20	2.5	15	18
P			40	10	2.8	20	-2.5	27	32
N	Y2N 655S	SOP8	60	16.2	3.1	20	3	43	55

订货信息/Ordering information

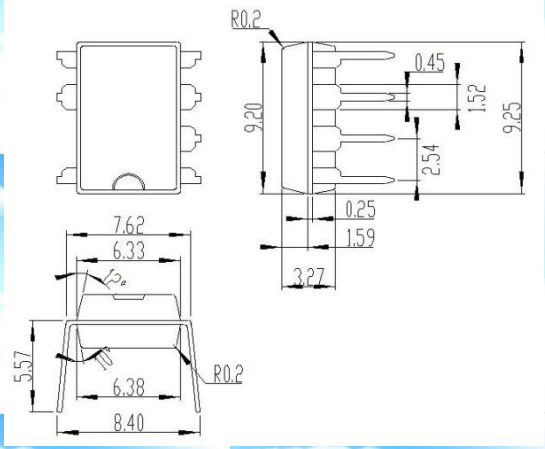
Y2N 订货信息/Y2N Ordering information

	Y	2	N	6	55	S	()
公司商标代号 Company Symbol							
1:NIL 2:2MOS							
P:P MOS N:N MOS							
负载电压 BVDSS：6-60V；10-100V							
$R_{DS(on)}$：56-56mΩ；38-38mΩ；16-16mΩ							
D:DIP S:SOP							
用户特殊编号 Special code							

封装形式/Package dimension



DIP6



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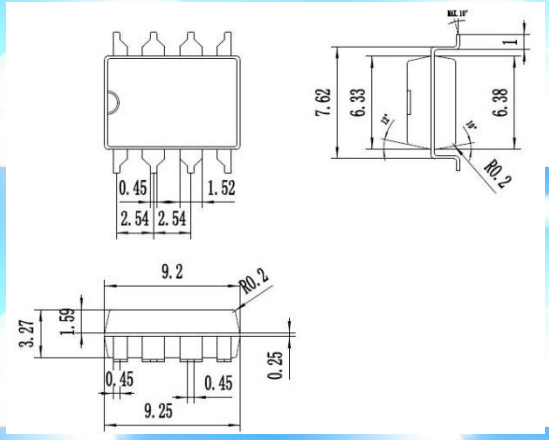
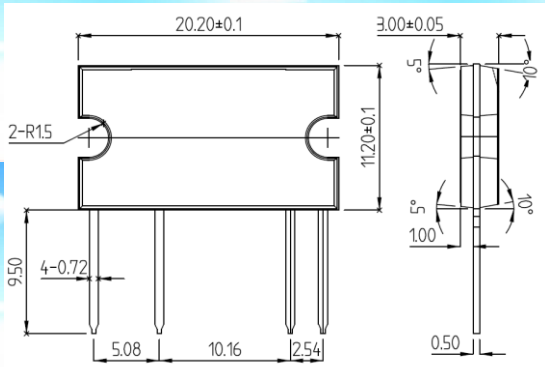
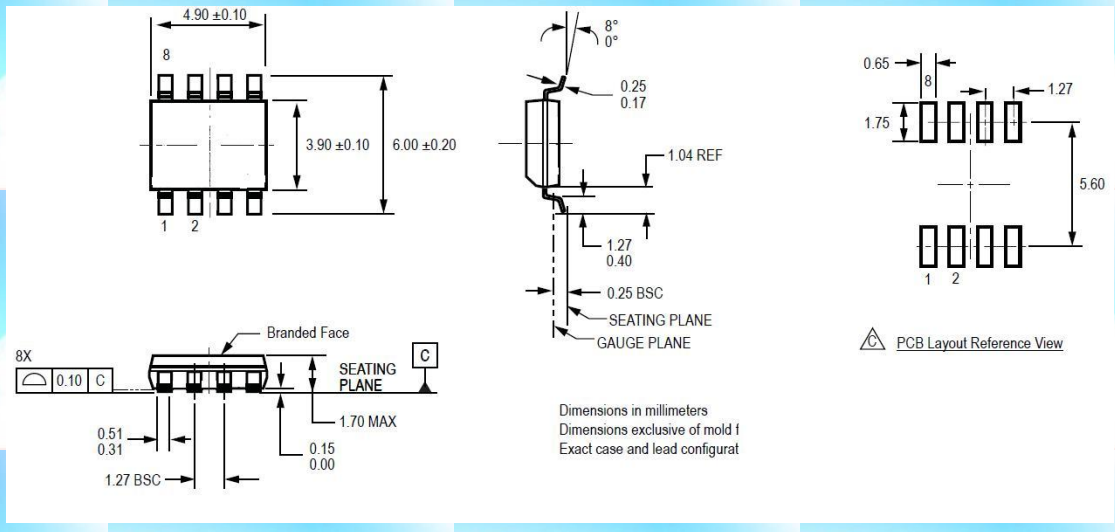


SMD7

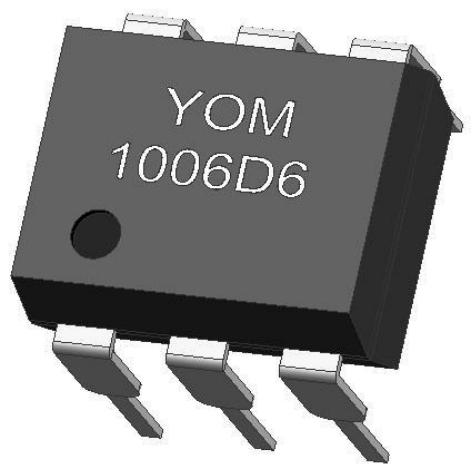
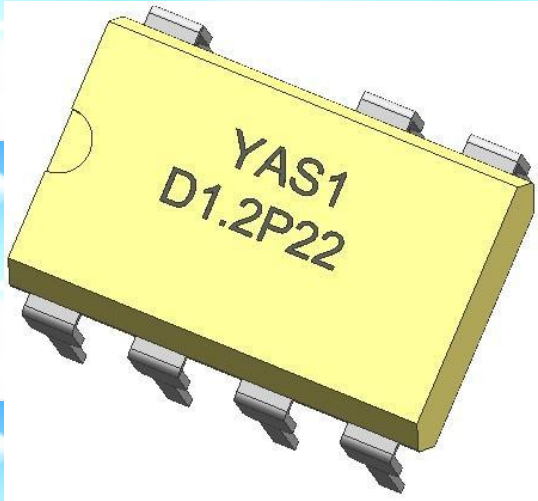
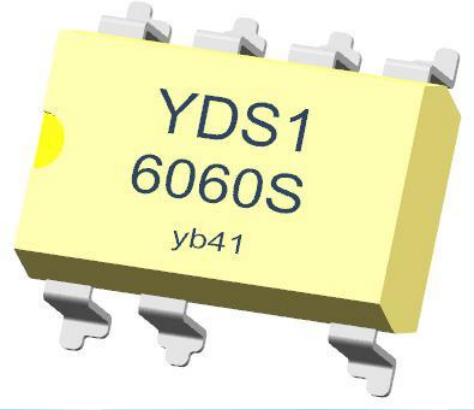
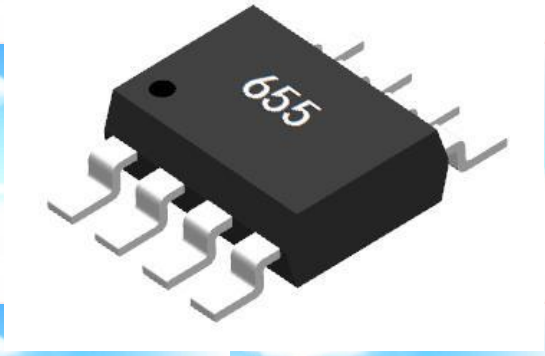
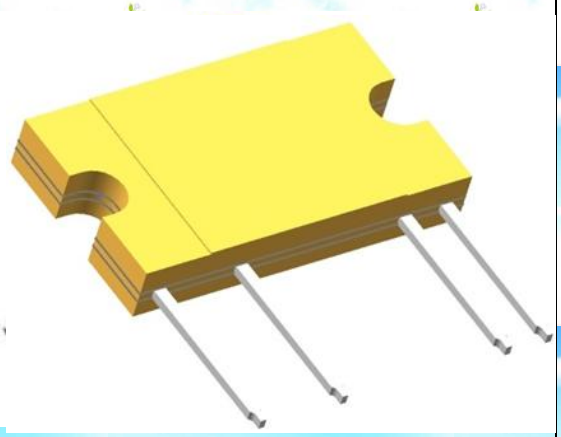
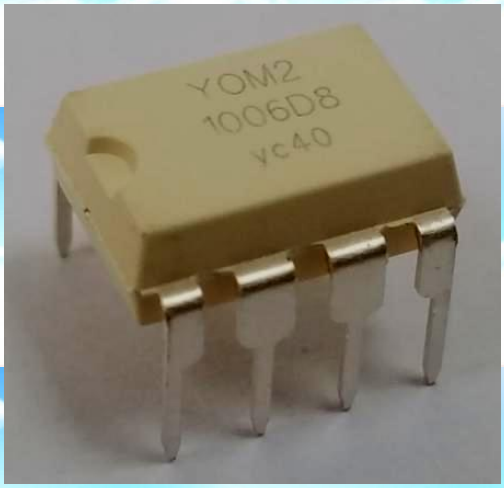


SIP4

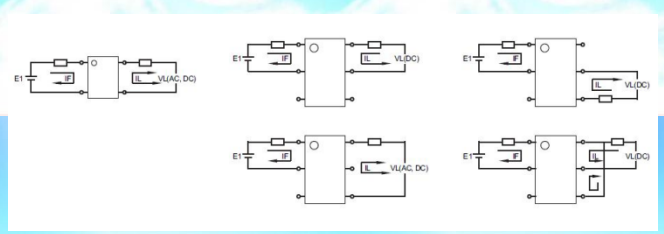


SOP8

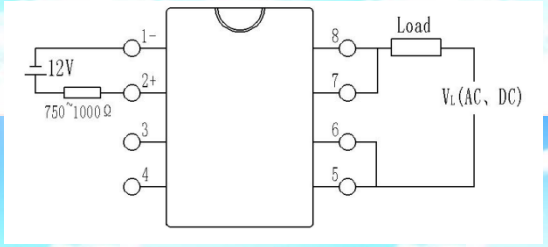
封装外观/Package Top View

	
DIP6	DIP7
	
SMD7	SOP8
	
SIP4	DIP8

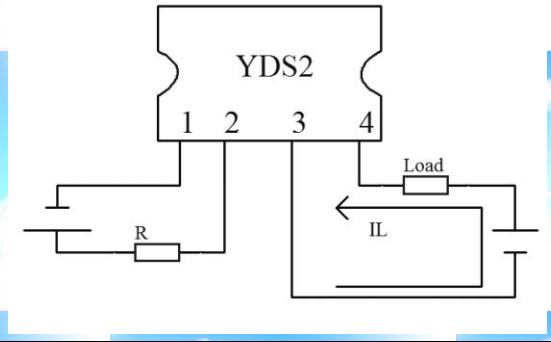
接线图/Wiring diagram:



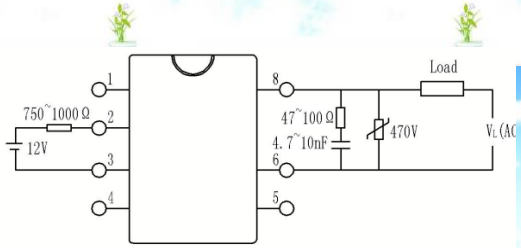
YOM/YSM



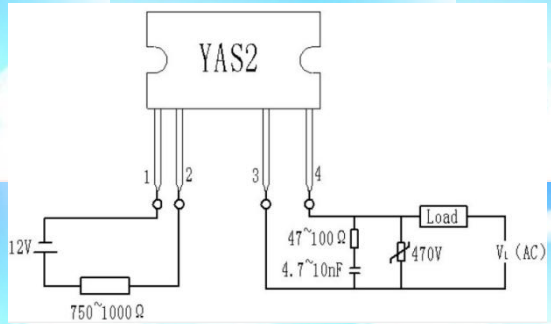
YDS1



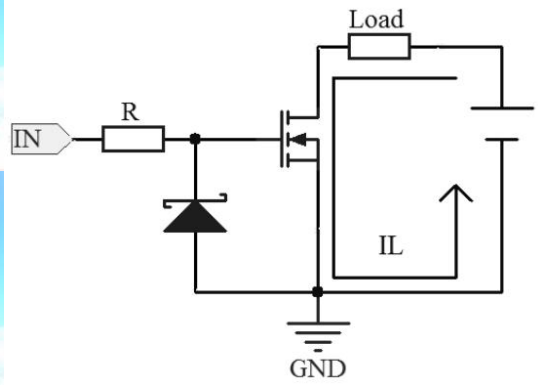
YDS2



YAS1



YAS2



MOS

YOM4 继电器模块/Opto-MOS Relay module

概述/General Features

- ●4 合 1 光 MOS 继电器模块
  4 in 1 opto-MOS module
- ●负载电流最大为 2A/Max load current 2A
- ●负载耐压 60V/load voltage 60V
- ●带工作状态显示/ operating display
- ●带导轨快连接安装卡扣/ rail fast mount

应用/Applications

- ●工业控制/Industrial control

特性参数/Parameter

型号/Part Number	触发电流/Trigger current(mA)	额定电流/Trigger current(mA)	测试条件/test condition				Diclectric Strength (V_{rms})	工作温度/Operating temperature (℃)
			R_{DS} (Ω)	Peak current (A)	T_{on} (ms)	T_{off} (ms)		
YOM4/24D1006	10	2	0.1	2.8	2	1	3000	-40~85

订货信息/Ordering Information :

YOM 订货信息/YOM Ordering information

	Y	OM	4	24D	100	6	()

公司商标代号 Company Symbol

MOS 输出型

SSR 集成数量：4-4 只

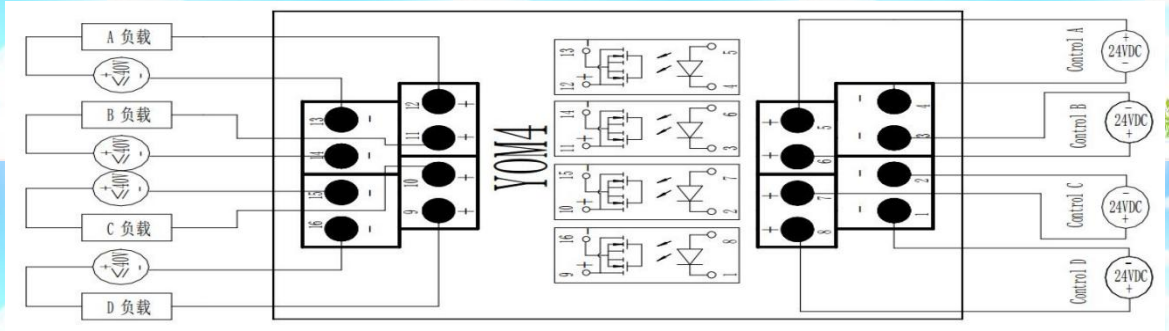
输入控制电压：05D-5V; 12D-12V; 24D-24V

负载电流 Load current:30-0.3A; 100-1A; 200-2A

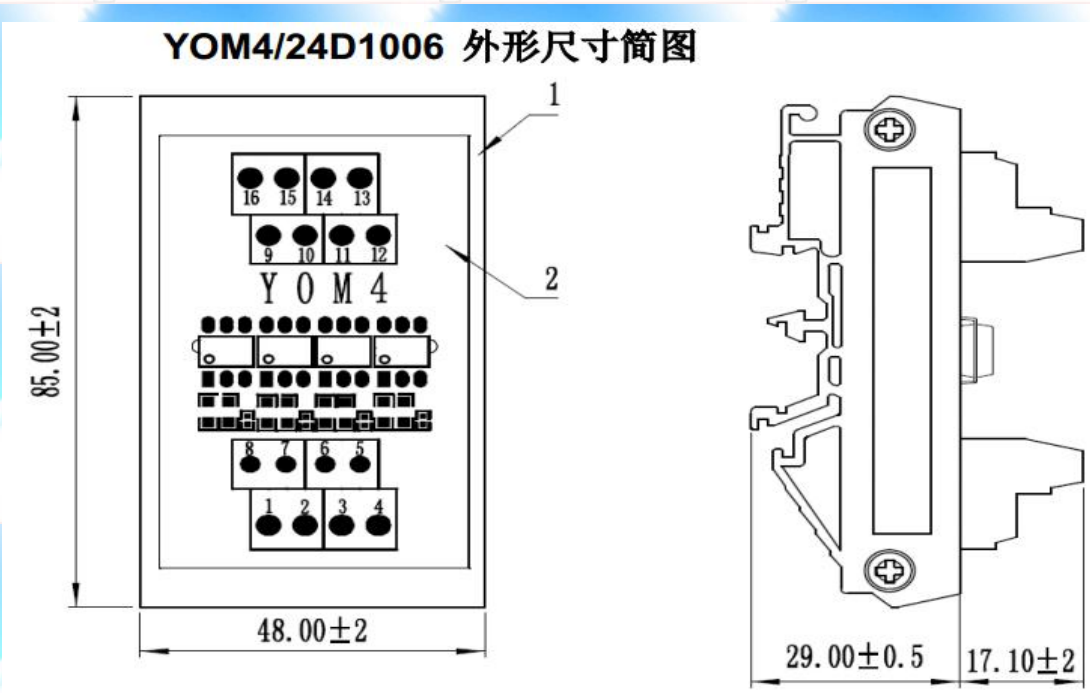
负载电压 Load voltage:6-60Vdc; 50-500Vdc

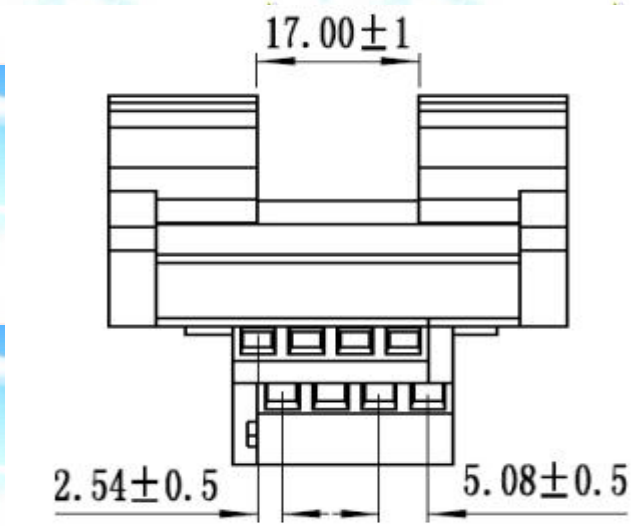
用户特殊编号 Special code

接线图/Wiring diagram



外形尺寸 /Outline dimension ：





YSM2 模块/SSR module

概述/General Features

- ●2 合 1 SSR 模块/2 in 1 SSR module
- ●负载电流最大为 5A/Max load current 5A
- ●阻断电压 700V/Repetitive peak Off-state voltage 700V
- ●带工作状态显示/ operating display
- ●带导轨快连接安装卡扣/ rail fast mount

应用 应用/Applications

- ●工业控制/Industrial control

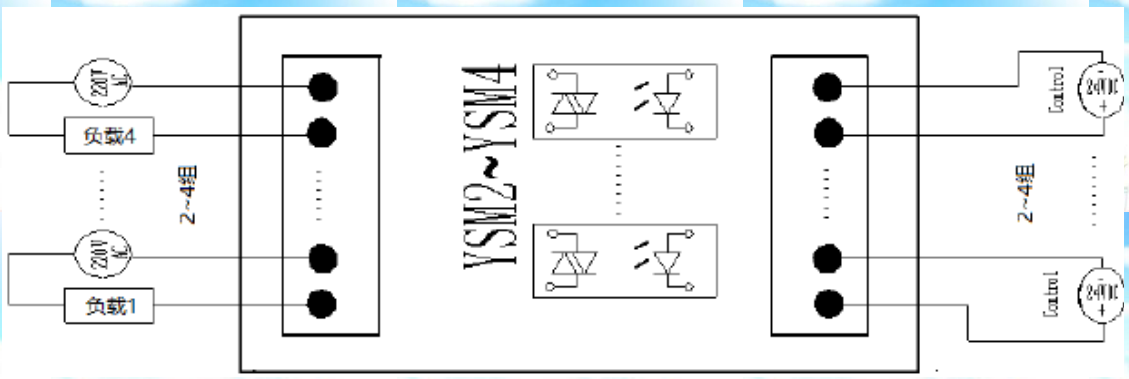
特性参数/Parameter

型号/Part Number	触发电流/Trigger current(mA)	额定电流/Trigger current(mA)	测试条件/test condition				介质耐压/Diclectric Strength (V_{rms})	工作温度/Operating temperature (℃)
			输出压降/Output on-state voltage drop (V)	峰值电流/Peak current (A)	T_{on} (ms)	T_{off} (ms)		
YSM2/24D5P22	10	5	1.2	25	0.1	1+1/2cycle	2500	-40~85

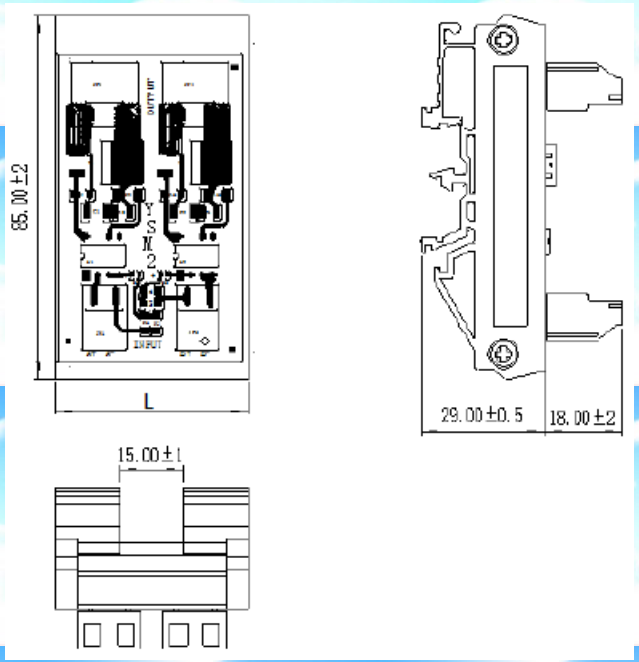
订货信息/Ordering Information

订货信息/Ordering Information							
	Y	SM	2	D	5	P	22
公司商标代号 Company symbol							
交流输出型 SSR 模组							
控制电路数 Number of control circuits： 2：2 路							
输入电压型 Voltage driving：05D—5V;12D—12V;24D—24V；							
负载电流 Load current：5-5A							
P:调相 Non zero-cross							
负载电压 Load voltage ： 22-220Vac;38-380Vac							

接线图/Wiring diagram ：



外形尺寸 /Outline dimension ：



Type	Symbol	Min(mm)	Nor(mm)	Max(mm)
YSM2	L	45	46	47

YL8 集线器

概述/General Features:

●1 分 8 的集线器模组

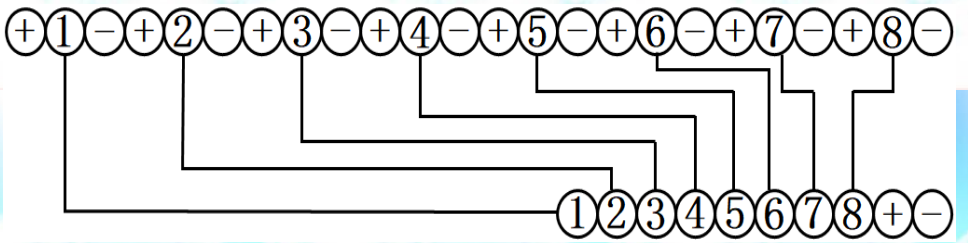
应用 /Applications:

●工业控制/Industrial control

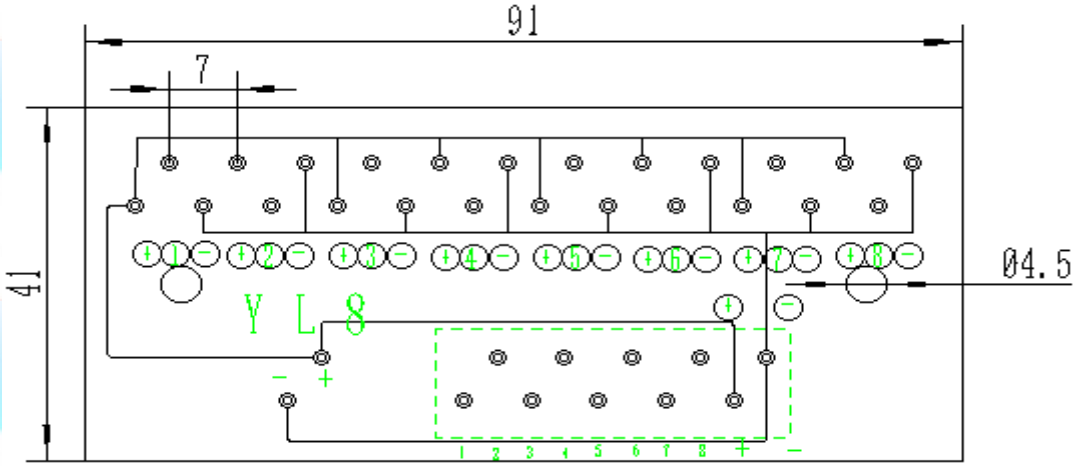
订货信息/Ordering Information :

YL 订货信息/YL Ordering Information			
	Y	L	8
公司商标代号 Company Symbol			
线路 Line			
输出端数量（组） Output Quantity			

接线图/Wiring diagram:



外形尺寸 /Outline dimension :



1、 固体继电器工作原理/Concept

固体继电器（Solid State Relay. 缩写：SSR）是一种无触点电子开关。内部无任何可动部件。完全由固体器件实现负载的通断切换功能。控制回路与负载回路通过光电耦合或变压器进行隔离和传输.

Solid state relay (ab. SSR) is a mechanically passive version of its older counterpart the EMR (electromechanical relay), providing essentially the same performance, but without moving parts. It is a totally electronic device that depends on the electrical, magnetic, and optical properties of semiconductors and electrical components to accomplish its isolation and relay-switching functions.

输入电路多为直流输入，个别的为交流输入，直流输入电路又分为阻性输入和恒流输入。阻性输入电路的输入控制电流随输入电压呈线性变化，恒流输入电路，在输入电压达到一定值时，电流不再随电压的升高而明显增大，这种继电器可适用于相当宽的输入电压范围.

Mostly DC input circuit and individually AC input circuit. DC input circuit is divided into resistive input and constant current input. In resistive input circuit, control current varies linearly with the input voltage; in constant current input circuit, when the input voltage reaches a certain value, the current no longer increases with the rise of the voltage markedly. This relay is suitable for a relatively wide range of input voltages.

输出电路主要由输出器件和起瞬态抑制作用的吸收回路组成，有的还包括反馈电路。目前输出器件主要有晶体三极管(Transistor)、单向可控硅(Thyristor 或 SCR)、双向可控硅(Triac)、MOS 场效应管(MOSFET)、绝缘栅型双极晶体管（IGBT）等.

Output circuit is mainly composed of output devices and transient inhibition absorption circuit, sometimes include a feedback circuit. Currently, main output devices are Transistor, SCR, Triac, MOS field effect transistor (MOSFET), Insulated Gate Bipolar Transistor(IGBT) and etc.

2、固体继电器的特点/Features

1） 输入功率小，直流固体继电器的典型值为 10~15mA，可以和逻辑电路兼容。

The input power is small, typical value of DC solid state relay is 10~15 mA, can be compatible with the logic circuit.

2） 开关速度快，固体继电器的转换速度多为十几到几十微秒，除交流固体继电器需半周期过零切换外，最大的约为几百微秒.

High-speed, high-frequency switching operations. Solid-state relay normal switching speed dozen microseconds, the fastest only need few microseconds; the longest a few hundred microseconds, in addition to AC solid state relay require 1/2cycle zero cross switching.

3） 输入接通电阻稳定，无机械和电磨损造成的接触不良.

Stable output ON resistance, no contact failures caused by mechanical and electrical wear.

4） 抗干扰能力强，固体继电器输入输出间采用光电或变压器隔离，避免了输出输入逻辑电路的影响，同时输出电路具有较高的抗脉冲电流的过负载能力.

High anti-interference ability. Solid state relay input and output using optical or transformer isolation,to avoid influence of the output to the input logic circuit. At the same time, the output

circuit has a high resistance to pulse current overload capacity.

5） 对外界干扰小，固体继电器的输入电流很小，无电磁继电器输入线圈在关断时产生的数百伏甚至几千伏的反电动势，输出电路不存在由于触点抖动、回路和电弧火花所引发的电磁干扰和射频干扰.

Little interference to the outside. The SSR input current is very small. Input coil of electromagnetic relay produce hundreds or even thousands of counter electromotive force when shutting down, but SSR can avoid it. Output circuit does not exist electromagnetic interference and radio frequency interference caused by contact bounce, circuit and arc sparks.

6） 寿命长，固体继电器没有触点，不存在机械和电磨损，它的寿命就是半导体器件的寿命，所以固体继电器在额定负载下的电寿命一般可达上亿次动作.

Long life operation. SSR have no contact, no mechanical and electrical wear, its life equals to the life of semiconductor devices'. Therefore, at rated load condition the electrical life of SSR generally up to hundreds of millions of cycle.

7） 工作可行性高，固体继电器无活动部件，不存在触点回跳、抖动，因此其输出信号不会引发逻辑电路多次动作，采用密封结构，具有耐恶劣的机械和气候环境的能力，只要选择和使用正确，就会实现应用的高可靠.

High reliability. Solid-state relay have no moving parts, no contact bounce and shake, so the output signal will not lead to a logic circuit repeated action. Use sealed structure, high resistance ability to harsh mechanical and climatic environments. If choose and use in the right way, you will achieve high reliability of applications.

注意事项/Notes

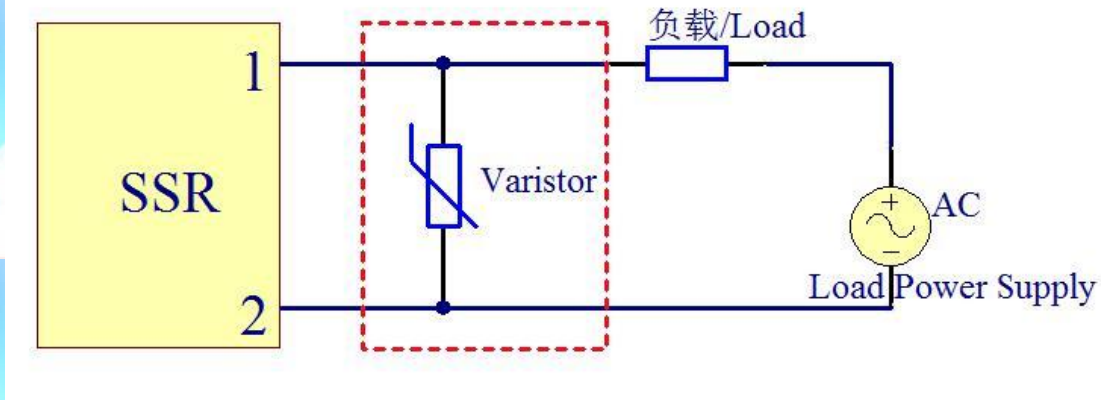
a） 工作环境温度超过 25 ℃ 时请降额使用，降额曲线参考规格书.When ambient temperature is above 25℃ , the load current must be reduced.

b） 继电器接线时，务必保证输入端极性的正确，以免损坏继电器.Ensuring the polarity is correct when connecting the input lines, otherwise the wrong connection will damage the relay.

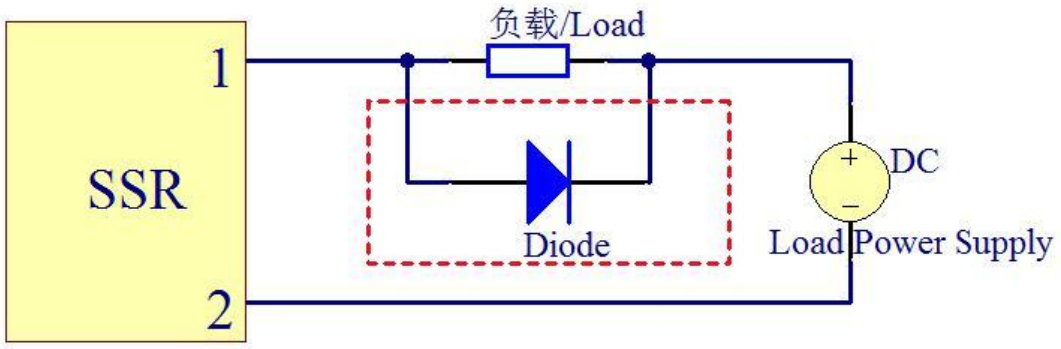
c） 根据负载特性，选择合适的 SSR 很重要。由于负载在切换时会产生浪涌电流和过电压。过高的浪涌电流可造成 SSR 失效的最常见的原因，因此要求冗余设计，电流请参考下表，继电器耐压应选取工作电压的 2~3 倍.It's important to choose the suitable SSR. The different loads bring surge current or overvoltage when the power turns on. The most common SSR failure is caused by high surge current, thus require redundant design. Suggested SSR block voltage is 2 to 3 times higher than the Load voltage. Refer to following chart for current value.

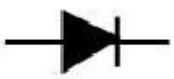
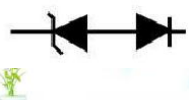
负载种类 Load	阻抗负载 Resistive	继电器线圈 Relay (EMR)	马达 Sdenoid	电磁阀 Motor	灯泡 Incan Descentlamp	电容 Capacitor
冲击电流 Inrush current/ 正常电流 Normal current	1 倍 1 time	2~3 倍 Approx 2 to 3 times	10 倍 Approx 10 times	5~10 倍 Approx 5 to 10 times	10~15 倍 Approx 10 to 15 times	20~50 倍 Approx 20 to 50 times

d) 切换交流感性负载时出现瞬态过电压，有可能会超过 SSR 耐压值，导致 SSR 因过电压而损坏，因此建议在继电器输出端跨接压敏电阻.Switching the AC inductive load may bring over voltage, it may be larger than the SSR voltage value and damage the product, as built-in RC snubber circuit inhibitory capacity is limited. Parallel connection between MOV (metal oxygen varistor) and the SSR output terminals is recommended.



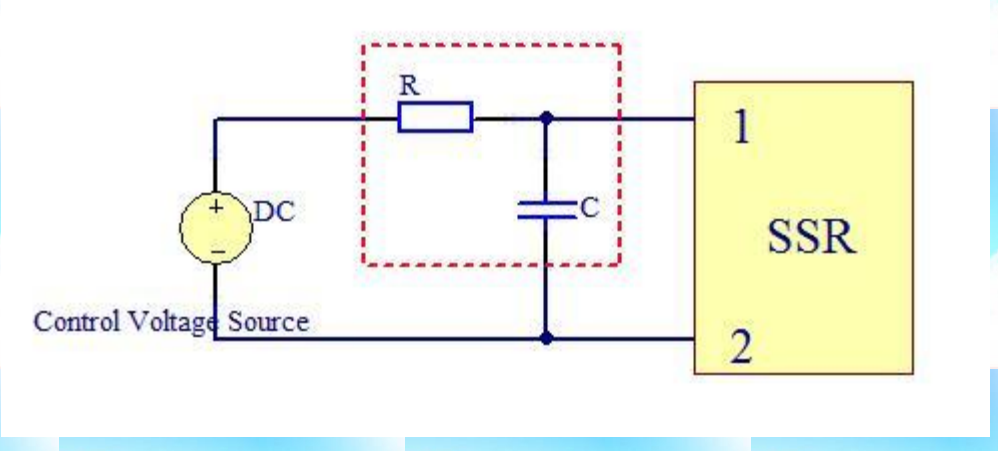
e) 在连接线圈、电磁阀等感性负载时，请在电路中接入逆向保护二极管，超过 SSR 的瞬态电压，会导致 SSR 输出器件的损坏.用反向保护二极管抑制瞬态电压具有最佳效果.但线圈和电磁阀的复位时间会变长，请在实际使用回路上进行确认后再使用.Switching load such as the coil load, electromagnetic valve may bring over voltage, parallel connection between the diode and the load terminals is recommended. Otherwise, over transient voltage will damage SSR output devices. Reverse protection diode have the best transient voltage suppression result. But coil and electromagnetic valve reset time becomes longer, please confirm actual loop before use.



抑制瞬态电压的方法 Device				
	二极管 Diode	二极管 Diode/稳压二极管 Zener diode	压敏电阻 MOV	RC
效果 Effect	好 Good	好 Good	较好 Better	差 Common

f) 在输入端施加较大的干扰或者浪涌时，可能会引发误动作，或者造成破坏.此时，请在 C、R 等中插入吸收干扰的电路.

A high noise surge voltage applied to the SSR input circuit can cause malfunctionor permanent damage to the device. If such a high surge is anticipated, use C or R noise absorber in the input circuit.



关于防静电对策/Cautions for Static Electricity

a.作业人员，请穿戴制电性作业服，通过 500kΩ~1MΩ 左右的保护电阻，实施人体接地。Employees handling relays should wear anti-static clothing and should be grounded through protective resistance of 500kΩ to 1MΩ.

b.请在作业台上粘贴带导电性的金属板或具有防静电的专用板，并对测量仪器和治具等实施接地.

A conductive metal sheet should be placed over the work table. Measuring instruments and jigs should be grounded.

c.使用电烙铁时，对电烙铁前端进行接地。(建议使用低电压用的电烙铁。) When using soldering irons, either use irons with low leakage current, or ground the tip of the soldering iron. (Use of low-voltage soldering irons is also recommended.)

d.组装时使用的设备等也应正确地接地.Devices and equipment used in assembly should also be grounded.

e.对印刷电路板和机器进行包装时，请避免使用发泡苯乙烯、聚乙烯等带电性的高分子材料.When packing printed circuit boards and equipment, avoid using high-polymer materials such as foam styrene, plastic, and other materials which carry an electrostatic charge.

f.对 MOS 输出继电器进行储存和搬运时，请在不易产生静电的环境(例如湿度 45~60%)中通过导电性包装材料进行保护.When storing or transporting relays, the environment should not be conducive to generating static electricity (for instance, the humidity should be between 45 and 60%), and relays should be protected using conductive packing materials.