

### ● Description

WORO1006LA is a 60V/1A, AC and DC universal Opto-MOS solid-state relay, isolated through optoelectronics, with a dielectric withstand voltage of 5000V. The maximum load current is 1A, and the breakdown voltage at the output can reach 60V. Mainly used in high-speed detection equipment, program-controlled switching equipment, computers and other fields.



### ● Features

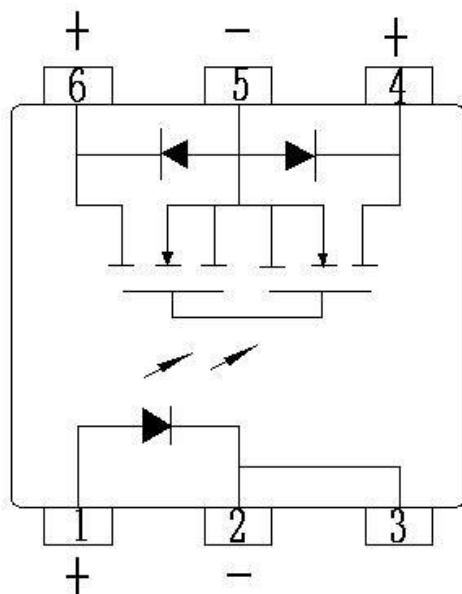
- AC&DC output
- Maximum load current is 1 A
- Breakdown voltage 60V
- Maximum isolation voltage is up to 5000V
- UL508-E548370
- Package form: SMD6
- HF & Pb free & RoHS



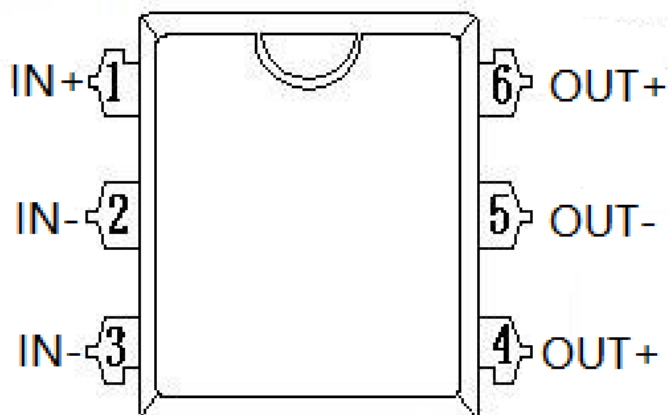
### ● Applications

- High-speed detection equipment
- Program-controlled switching equipment
- computers

### ● Internal Electrical Schematic



## Module Pin-Out Description



Pin Number	Pin Name	Pin Description
1	IN+	Input diode P terminal
2&3	IN-	Input diode N terminal
4	OUT1+	Output P1 terminal ends
5	OUT-	Output N terminal ends
6	OUT2+	Output P2 terminal ends

## Absolute Maximum Ratings (T<sub>J</sub>=25°C, Unless otherwise Specified)

	Parameter	Symbol	Condition	Min	Type	Max	Unit
Input	Reverse voltage	V <sub>R</sub>				6	V
	Forward current	I <sub>F</sub>				50	mA
	Power dissipation	P <sub>IN</sub>				50	mW
Output	Breakdown voltage	BV <sub>DSS</sub>				60	V
	Power dissipation	P <sub>IN</sub>				800	mW
	On-state current	I <sub>L</sub>				1	A
	Peak current	I <sub>PEAK</sub>	100mS (1 shot) ,VL=DC		1.8		A
Isolation Voltage*		V <sub>ISO</sub>	I <sub>ISO</sub> ≤0.3mA	I <sub>ISO</sub> ≤0.3mA	5000		
Operating temperature		T <sub>OPT</sub>			-30		85
Storage temperature		T <sub>STG</sub>			-40		125

\*: RH=40 to 60%, T=20~30°C, AC for 1 minute.

## Electrical Characteristics (T<sub>J</sub>=25°C, Unless otherwise Specified)

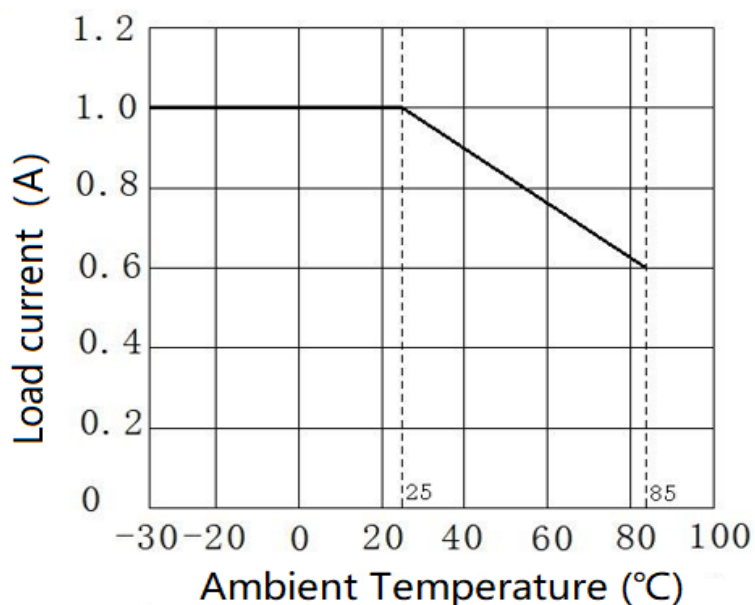
	Parameter	Symbol	Condition	Min	Type	Max	Unit
Input	Forward voltage	V <sub>F</sub>	I <sub>F</sub> =10mA		1.2	1.3	V
	Reverse current	I <sub>R</sub>	V <sub>R</sub> =5V			10	μA

Output	Output off-state leakage current	$I_{LEAK}$	$V_O=60V$			10	$\mu A$
Transfer characteristics	LED trigger current	$I_{FT}$			3	8	mA
	Recommend operating current	$I_{IN}$		10		18	mA
	Output on-state resistance	$R_{on}$	$I_{IN}=10mA, I_D=1A$			0.2	$\Omega$
	Turn on time	$T_{on}$	$I_{IN}=10mA, I_D=1A$			4	mS
	Turn off time	$T_{off}$	$I_{IN}=10mA, I_D=1A$			4	mS
	I/O capacitance	C				10	pF

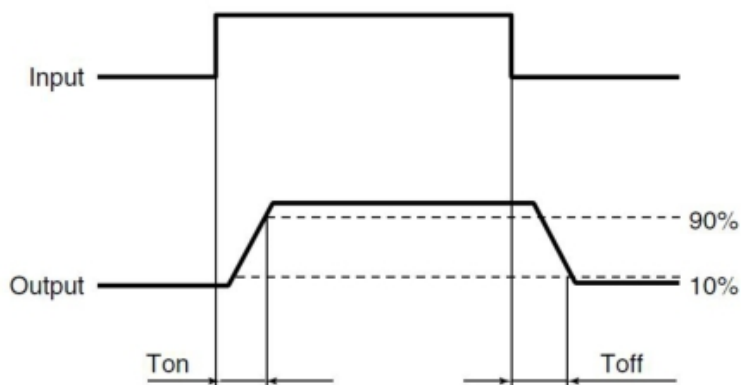
"\*" is the key parameter.

## Typical Curve

- Load current (RMS) VS Ambient Temperature

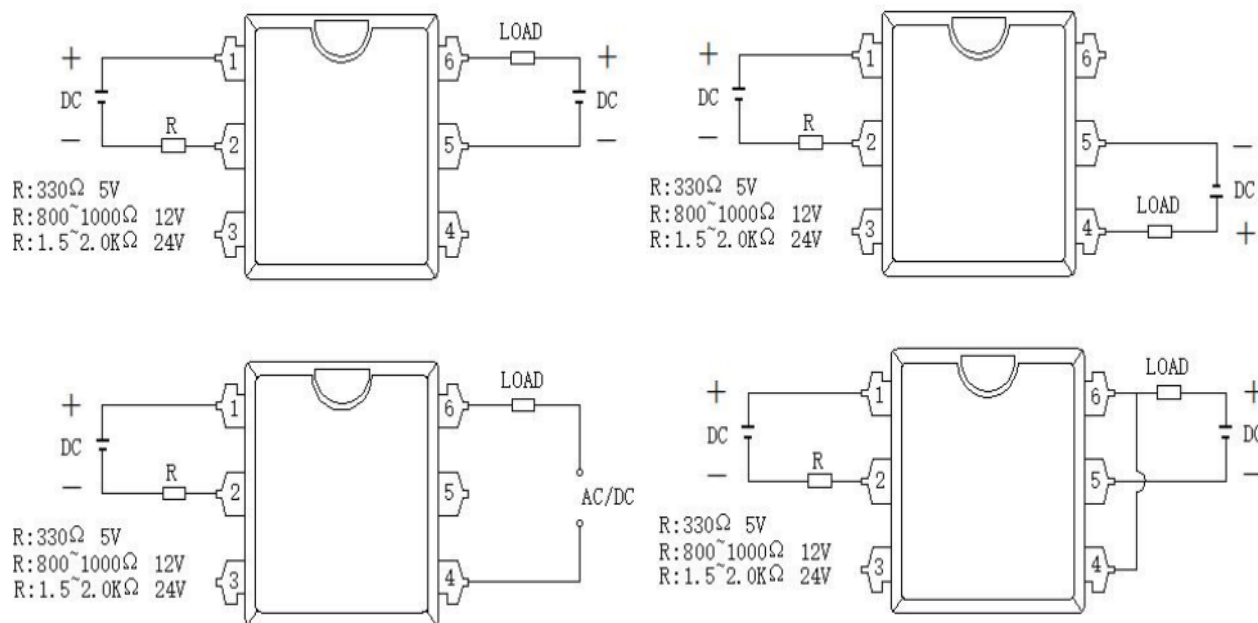


- Turn-on and turn-off time



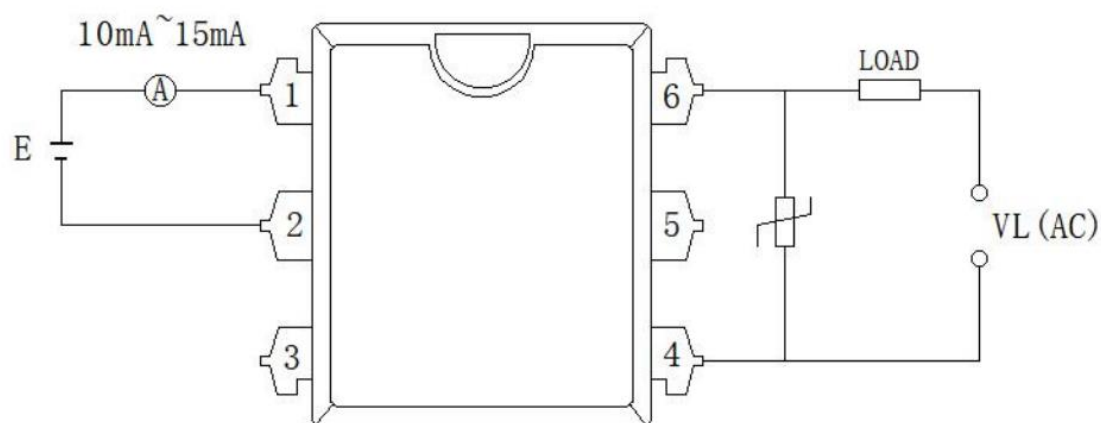
## ● Typical Application and Description

### ● Application circuit



### ● Recommended driving condition

Please make sure the input current more 10 mA, Recommending input current 15mA.



- Application description

- A. When the operating temperature exceeds 25 ° C, the load current must be Reduced (Based on the Load current VS Ambient Temperature typical curves)
- B. Relay wiring, be sure to ensure that the input polarity is correct, so as not to damage the relay;

- ESD protection measures

- A. Operators, please wear anti-static work clothes and implement human grounding through a protective resistor of about 500k  $\Omega$ ~1M  $\Omega$ .
- B. Please install conductive metal plates or specialized plates with anti-static properties on the workbench, and ground the measuring instruments and fixtures.
- C. When using an electric soldering iron, ground the front end of the iron. (It is recommended to use a low voltage soldering iron.)
- D. The equipment used in assembly should also be correctly grounded.
- E. When packaging PCB and machines, please avoid using charged polymer materials such as foamed styrene and polyethylene.
- F. When storing and handling Opto-MOS relays, please protect them with conductive packaging materials in an environment that is not prone to static electricity (such as humidity of 45-60%).

- Soldering

Flow soldering should be completed at 260°C and within 10s.

Flow soldering should be completed at 350°C and within 5s.

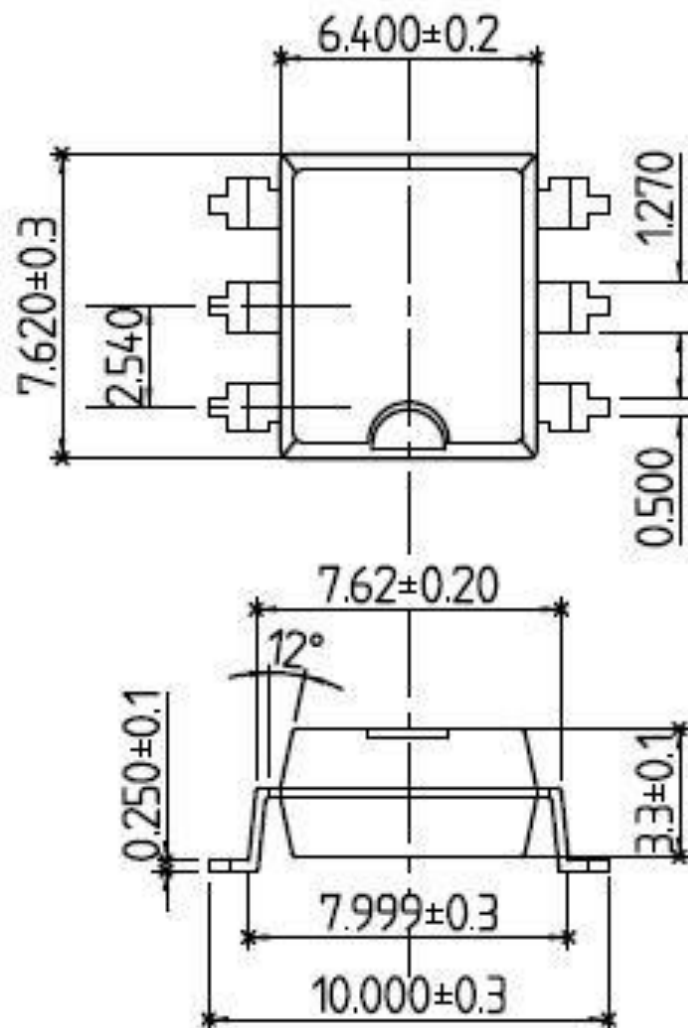
- Order Code

W OR O 10 06 LA  
① ② ③ ④ ⑤ ⑥

- ① Company Code(W: WAYON)
- ② Product Series (OR)
- ③ O:AC&DC OUT
- ④ Load current:1A
- ⑤ Breakdown voltage 60V
- ⑥ Package (LA: SMD6)

## ● Mechanical Dimensions (Unit:mm)

- Package SMD6

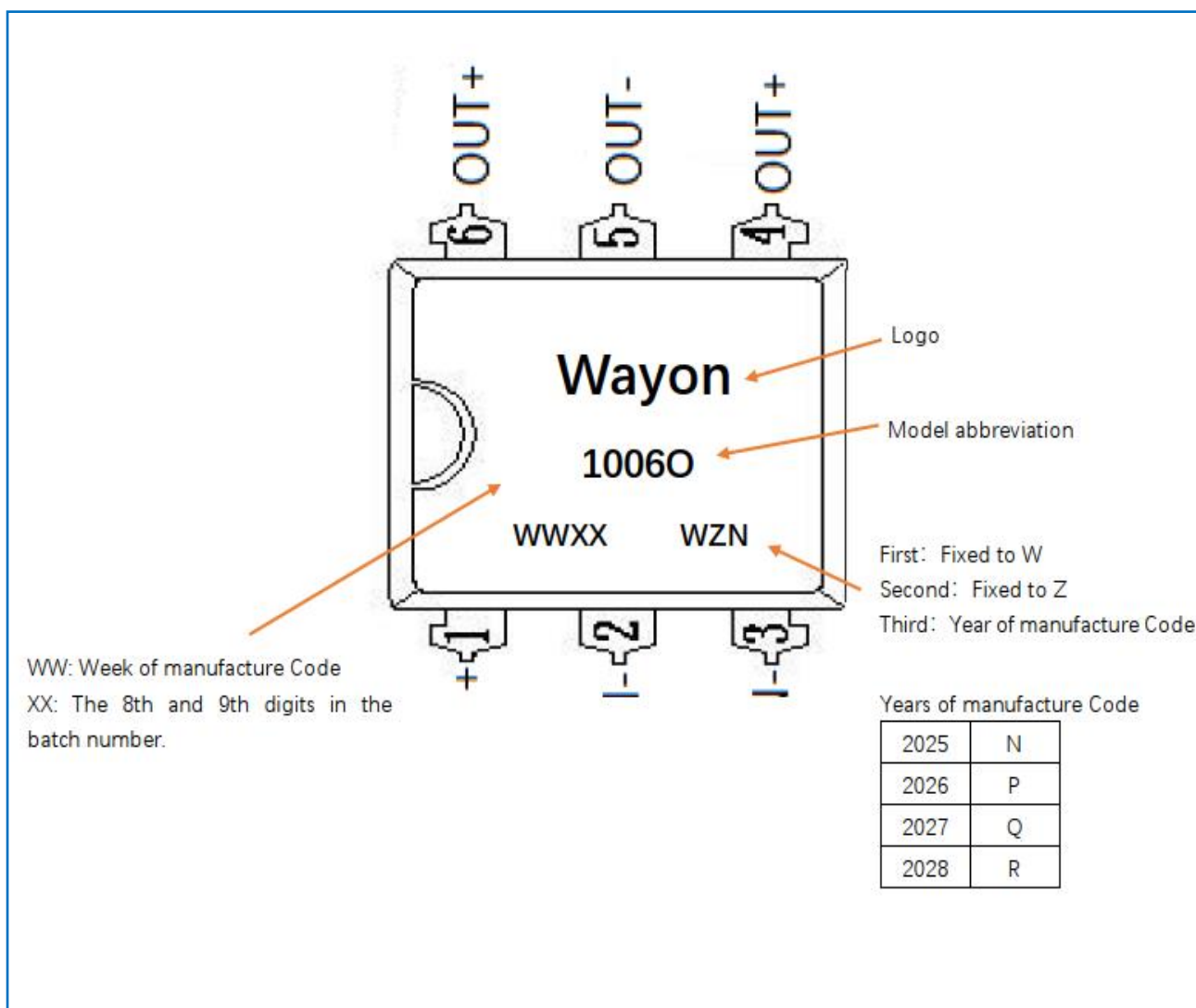


Note: No tolerance is marked as  $\pm 0.05$ mm.

## ● Ordering Information

Model	Package	Marking	Packing method	QTY(PCS)
WORO1006LA	SMD6	1006O	Tape and reel	TBD

## ● Marking Information



## Contact Information

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For additional information, please contact your local Sales Representative.

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## Product Specification Statement

1.The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

2.The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. WAYON shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and WAYON assumes no responsibility for the application of the product.

3.WAYON strives to provide accurate and up-to-date information to the best of our ability. However, due to technical, human, or other reasons, WAYON cannot guarantee that the information provided in the product specification is entirely accurate and error-free. WAYON shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications. WAYON reserves the right to revise or update the product specification and the products at any time without prior notice, and the user's continued use of the product specification is considered an acceptance of these revisions and updates. Prior to purchasing and using the product, users should verify the above information with WAYON to ensure that the product specification is the most current, effective, and complete. If users are particularly concerned about product parameters, please consult WAYON in detail or request relevant product test reports. Any data not explicitly mentioned in the product specification shall be subject to separate agreement.

4.Users are advised to pay attention to the parameter limit values specified in the product specification and maintain a certain margin in design or application to ensure that the product does not exceed the parameter limit values defined in the product specification. This precaution should be taken to avoid exceeding one or more of the limit values, which may result in permanent irreversible damage to the product, ultimately affecting the quality and reliability of the system or equipment.

5.The design of the product is intended to meet civilian needs and is not guaranteed for use in harsh environments or precision equipment. It is not recommended for use in systems or equipment such as medical devices, aircraft, nuclear power, and similar systems, where failures in these systems or equipment could reasonably be expected to result in personal injury. WAYON shall assume no responsibility for any consequences resulting from such usage.

6.Users should also comply with relevant laws, regulations, policies, and standards when using the product specification. Users are responsible for the risks and liabilities arising from the use of the product specification and must ensure that it is not used for illegal purposes. Additionally, users should respect the intellectual property rights related to the product specification and refrain from infringing upon any third-party legal rights. WAYON shall assume no responsibility for any disputes or controversies arising from the above-mentioned issues in any form.