

for reference
 for recognition

Spec. No. OMZ-PE-G5V-040621-031

CUSTOMER _____

PRODUCT SPECIFICATION
FOR

NAME OF PRODUCT : Micro Relay

MODEL : G5V-13

SPECIFICATION : DC ALL

Revision	Contents	By/Date

ATTN : _____

Date of Issue : 2004-06-18

Issued by : Song Feng

Checked by : T. Minamizaki

Approved by : H. Huzukawa

1. Classification	Single stable relay		
2. Construction			
2.1 Outline dimensions	Drawing No. 3458472-3		
2.2 Structure drawing	Drawing No. -----		
2.3 Contact configuration	SPDT (1c contact)		
2.4 Contact structure	Crossbar twin		
2.5 Contact material	Face material	Au Alloy	
	Base material	Ag	
2.6 Protective construction	Plastic sealed		
3. Standards			
3.1 Approved by standard(s)	-----		
3.2 Others	-----		
4. Ratings			
4.1 Coil ratings	See table 1		
4.2 Contact ratings			
(1) Rated load	Resistive load	125 V A C	0.5 A
		24 V D C	1 A
	Inductive load	---- V A C ---- A	
		(p. f. =----)	
		---- V D C ---- A	
		(L/R=----ms)	
(2) Rated carry current		2 A	
(3) Maximum rated voltage		125 V A C 60 V D C	
(4) Maximum rated current			
	Resistive load	A C 1 A	D C 1 A
	Inductive load	A C ---- A	
		(p. f. =----)	
		D C ---- A	
		(L/R=----ms)	
(5) Maximum switching capacity			
	Resistive load	A C 6 2.5 V A	D C 3 0 W
	Inductive load	A C ---- V A	
		(p. f. =----)	
		D C ---- W	
		(L/R=----ms)	
(6) Failure rate (reference value)			
		D C 100mV	1 00 μ A
		(P level) (λ 60 = 0.1×10^{-6} /ops.)	
		(Operating frequency 7200ops./h)	
5. Characteristics (initial value)			
5.1 Contact resistance	1 0 0 m Ω max. Measured by the voltage drop method with D C 1 V 1 0 mA applied		
5.2 Must operate voltage (or set voltage)	See table 1		
5.3 Must release voltage (or reset voltage)	See table 1		

- 5.4 Operate time (or set time) 5ms max. (at rated voltage)
- 5.5 Release time (or reset time) 5ms max. (at rated voltage)
- 5.6 Minimum input pulse width --- ms min.
(Applicable to latching relay only, at rated voltage)
- 5.7 Insulation resistance
- (1) Between coil terminals and contact terminals (at 500V DC)
1000 M Ω min.
 - (2) Between non-continuous current-carrying contact terminals
---- M Ω min.
 - (3) Between contact terminals of the same polarity (at 250V DC)
1000 M Ω min.
 - (4) Between set coil and reset coil
---- M Ω min.
 - (5) Between current-carrying terminal and exposed non-current carrying
Metal part. ---- M Ω min.
- 5.8 Dielectric strength (leakage current 1mA 50/60Hz for minute)
- (1) Between coil terminals and contact terminals
A C 1000 V
 - (2) Between non-continuous current-carrying terminals
A C ---- V
 - (3) Between contact terminals of the same polarity
A C 400 V
 - (4) Between set coil and reset coil
A C ---- V
 - (5) Between current-carrying terminal and exposed non-current carrying
Metal part. A C ---- V
- 5.9 Temperature rise
- (1) Coil 50°C max.
(by the coil resistance method) at. ----°C
Applied voltage of coil : 100%
of rated voltage ---- H z
Carry current of contact 2 A
 - (2) Contact 65°C max.
(by the thermometer method) at. ----°C
Applied voltage of coil : 100%
of rated voltage ---- H z
Carry current of contact 2 A
- 5.10 Vibration
- (1) Mechanical durability Must be free from any abnormality in both the construction and characteristics after the relay is subjected to a variable vibration of 1.65 mm single amplitude (3.3 mm double amplitude) at a vibration frequency of 10~55~10 Hz In each direction for 2 hours.
 - (2) Malfunction durability Contacts must not open for 1 ms or longer after the relay is subjected to a variable vibration of 1.65 mm single amplitude (3.3 mm double amplitude) at a vibration frequency of 10~55~10 Hz in each direction for 1 cycle.
(When energized)
or set status
 - (When not energized) Contacts must not open for 1 ms or longer after the relay is subjected to a variable vibration of 1.65 mm single amplitude (3.3 mm double amplitude) at a vibration frequency of 10~55~10 Hz in each direction for 1 cycle.
or reset status

- 5.11 Shock
- (1) Mechanical durability Must be free from any abnormality in both the construction and characteristics after the relay is subjected to a shock of 1000 m/s² in each direction 3 times.
- (2) Malfunction durability
(When energized)
or set status Contacts must not open for 1 ms or longer after the relay is subjected to a shock of 100 m/s² in each direction 3 times.
- (When not energized)
or reset status Contacts must not open for 1 ms or longer after the relay is subjected to a shock of 100 m/s² in each direction 3 times.
- 5.12 Terminal strength Must be free from any abnormality after a tensile stress of 9.8 N is applied to the terminal in any direction vertical to the terminal tip for 10 seconds. Any deformation of the terminal by the load shall not be regarded as a mechanical damage.
- 5.13 Temperature resistance
- (1) Heat resistance Must be free from any abnormality in both the construction and characteristics after the relay is left in a temperature of 85±2 °C for 16 hours and then in room temperature and Humidity for 2 hours.
- (2) Cold resistance Must be free from any abnormality in both the construction and characteristics after the relay is left in a temperature of -55±3 °C for 72 hours and then in room temperature and Humidity for 2 hours.
- 5.14 Moisture resistance Must be free from any abnormality in both the construction and characteristics after the relay is left in a humidity of 90 to 95% RH for 48 hours at a temperature of 40±2 °C, and then in room temperature and humidity for 2 hours. Insulation resistance, however, must be 5 MΩ min.
- 5.15 Soldering heat resistance Must be free from any abnormality in both the construction and characteristics after the terminals are dipped into molten solder at 260±5 °C for 10 seconds and then left in room temperature and humidity for 2 hours.
- 5.16 Endurance
- (1) Mechanical endurance 5,000,000 operations min. under no load at operating frequency of 36000 operations/hour)
- (2) Electrical endurance 100,000 operations min. (under rated load, at operating frequency of 1800 operations/hour)

※Unless otherwise specified, the above mentioned item 4 (Ratings) and 5 (Characteristics) values are under the standard conditions of Ambient temperature 23°C and Humidity 65% RH.

6. Storage conditions

(1) Store in locations in normal temperature, humidity and atmosphere Pressure.

(2) Environments

- Store in locations where the product or container is not exposed to Corrosive gas such as hydrogen sulfide gas or salty air.
- Store in locations where no visible dust exists.
- Store in locations where the product is not exposed to the direct ray Of the sun, rain and snow.

Also please do not apply the force to product which may result In the deformation or a change in quality of the product.

7. Operating conditions Use the product under the following conditions.

7.1 Ambient temperature -40 to +70°C
(without freezing or condensation)

7.2 Relative humidity 5 to 85 %RH

7.3 Mounting direction Free

7.4 Environments

- (1) Use in locations where the product is not exposed to corrosive gas Such as hydrogen sulfide gas or salty air.
- (2) Use in locations where no visible dust exists.
- (3) Store in locations where the product is not exposed to the direct ray Of the sun, rain and snow.
Also please do not apply the force to product which may result in the deformation or a change in quality of the product.

8. Other

8.1 Impulse with stand voltage(Wave form 10x160 us)

- (1) Between Coil terminals and contact terminals 1500V
- (2) Between non-continuous current-carrying contact terminals---V
- (3) Between contact terminals of the same polarity ----V

9. Agreement when placing orders

Thank you for using OMRON products.

Unless otherwise specified in a written estimate, contract, or specifications, the following conditions and warranty information apply when an OMRON control device (hereafter called "OMRON Product") is ordered from catalogs. Ordering an OMRON Product implies consent to these terms and conditions.

9.1 Warranty

a)Warranty Period

The warranty period for an OMRON product is one year from either the date of purchase or the date on which the OMRON product is delivered to the specified location.

b)Extent of Warranty

If an OMRON product is subject to a failure for which OMRON is responsible during the warranty period either a replacement product will be provided or the defective product will be repaired free of charge at the place of purchase. This warranty, however, will not cover problems that occur as a result of any of the following.

- a. Using the OMRON product under conditions or in an environment not described in catalogs or in the specifications, or not operating the OMRON product according to the instructions contained in catalogs or in the specifications.
- b. Problem caused by something other than the OMRON product.
- c. Modifications or repairs performed by a party other than OMRON.
- d. Using the OMRON product for other than its designed purpose.
- e. Problems that could not have been foreseen with the level of science and technology that existed at the time the OMRON product was shipped
- f. Problems caused by an Act of God or other circumstances for which OMRON is not responsible.

This warranty covers only the OMRON product itself. It does not cover and other damages that may occur directly or indirectly as a result of a problem with the OMRON product.

9.2 Limitations of Liability

OMRON shall not be responsible for special, indirect, or consequential damages originating in an OMRON product.

9.3 Applicable Conditions

- a) When using OMRON products in combination with other products.
It is the user's responsibility to confirm compliance with all applicable standards and regulations. It is also the user's responsibility to confirm the suitability of the OMRON products for the system, devices, and equipment that are being used. OMRON accepts no responsibility for the suitability of OMRON products used in combination with other products.
- b) When using OMRON products in any of the following applications, consult an OMRON representative and check specifications to allow sufficient leeway in ratings and performance. And to implement suitable safety measures. Such as safety circuits, to minimize danger in the event of an accident.
 - I) Outdoor applications, applications with potential for chemical contamination or electrical interference, or application under conditions or environments not described in catalogs.
 - II) Nuclear control systems, railroad systems, aviation systems, vehicles, combustion systems, medical equipment amusement machines, or equipment regulated by government or industrial standards.
 - III) Other systems, machines, and equipment that may have a serious influence on human life and property.
 - IV) Equipment requiring a high level of reliability, such as gas, water, or electrical supply systems, and systems that operate 24 hours a day.
 - V) Other applications requiring a high level of safety, corresponding to points I) to IV), above.
- c) When OMRON products are used in an application that could pose significant risk to human life or property. The overall system must be designed so that the required safety can be ensured by providing notice of the danger and incorporating redundancy into the design. Make sure that OMRON products are appropriately wired and mounted to serve their intended purpose in the overall system.
- d) Application examples provided in catalogs are for reference only; confirm functionality and safety before actually using the devices and equipment.
- e) To prevent unexpected problems from arising due to the OMRON product being used incorrectly by the customer or any other party, make sure that you understand and carefully observe all of the relevant prohibitions and precautions.
- f) Each rating and performance value given in catalogs etc. is the value in an independent examination, and does not guarantee simultaneously the compound conditions of each rating and performance value.

9.4 Changes to specifications

Specifications and accessories to the products in catalogs may be changed as needed to improve the products or for any other reason. Check with your OMRON representative for the actual specifications for OMRON products at the time of purchase.

9.5 Treatment of the specifications for reference

When these specifications are issued for reference, please consult with your OMRON representative before actually using the specifications and confirm the latest specifications for the OMRON product.

9.6 Extent of service

The price of an OMRON product does not include service costs, such as dispatching technical staff. If you wish for service, please consult with your OMRON representative.

9.7 Applicability

The above information assumes that business and product application will be conducted in Japan. For business and application outside of Japan, consult with your OMRON representative.

9.8 Effective term

These specifications will be invalid when there is not return or an order for one year from the date of issue.

10. Coil ratings (table 1)

Rated voltage (V)	Rated current (mA)	Coil resistance (Ω)	Must operate voltage	Must release voltage	Rated power consumption (W)	Permissible voltage range
DC 5	30	167	70%max. of rated Voltage.	10%min of rated Voltage.	Approx. 0.15	90~200% of rated Voltage.
DC 6	25	240				
DC 12	12.5	960				
DC 24	6.25	3840				

(1) The value of above list is measured at ambient temperature 23°C with the tolerances of coil resistance $\pm 10\%$.

(2) Range of permissible voltage is value at 50°C. but please avoid to applied voltage continuously.

(3) The other items are value at 23°C.

11. Note

(1) Please avoid to do the ultrasonic cleaning, for this relay.

Because there are afraid of open coil or contact sticking by the vibration of ultrasonic.

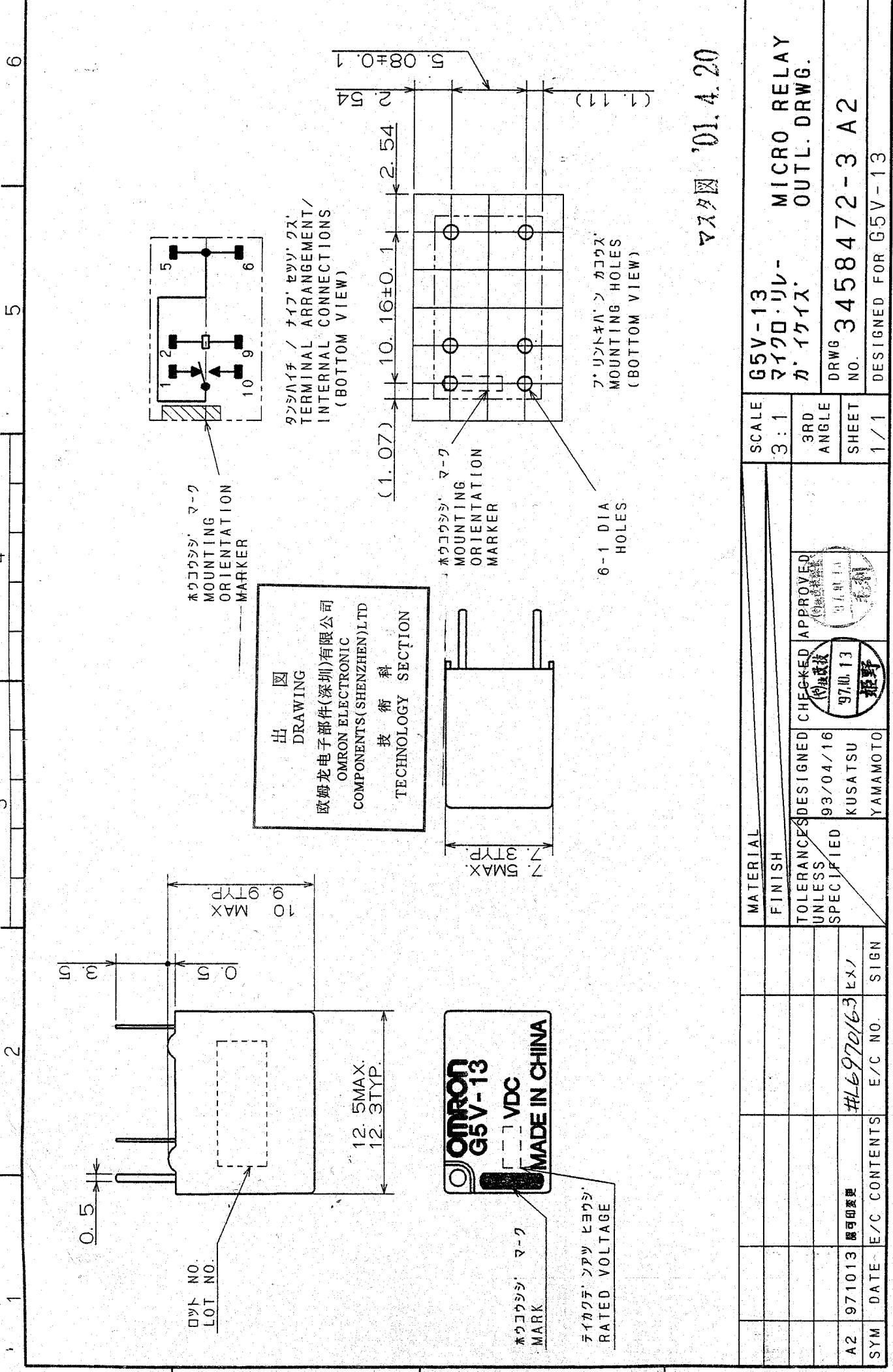
(2) Please pay attention to the drop of relay.

If you dropped the product on the floor, please avoid using it on your unit.

12. Precautions

If wash the product after soldered the relay on PCB, please use water-based solvent or Alcohol-based solvent. At that time, please keep the solvent temp. less than 40 degree C. Do not put the relay in a cold cleaning bath immediately after soldering.

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出 図
DRAWING
欧姆龙电子部件(深圳)有限公司
OMRON ELECTRONIC
COMPONENTS(SHENZHEN)LTD
技 術 科
TECHNOLOGY SECTION

OMRON
G5V-13
VDC
MADE IN CHINA

G5V-13
マイクロリレー
カクイ
MICRO RELAY
OUTL. DRWG.

SCALE 3:1
3RD ANGLE
SHEET 1/1

CHECKED APPROVED
代印
97.10.13
野野

DESIGNED 93/04/16
KUSATSU
YAMAMOTO

TOLERANCES UNLESS SPECIFIED

SYM A2 DATE 971013 許可印変更 #L6970/63 EX/

E/C NO. SIGN

DRWG NO. 3458472-3 A2

DESIGNED FOR G5V-13

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