

Product Specification Sheet

☐ For confirmation ☐ For estimate
☐ For meeting ☐ For reference

Spec. sheet No. : OMB - G5LE - 06002B (1 / 7)

Issued on : 27/02/2006

Prepared by SYAHRUL	Checked by 	Approved by 
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CUSTOMER : _____

PRODUCT NAME : PCB POWER RELAY

TYPE : G5LE - 1A - HA




SPECIFICATION : DC 12V

Attached is a specification sheet for your perusal. Please examine it carefully,
and upon confirmation, send one copy back to our company by _____

For receipt confirmation stamp

Specification sheet No. _____


Record of revisions (for use by Omron only)

Copies sent to	No.of copies	Code	Date of revision	Description of revision
Customer			09/05/2006	Correction, TÜV change to VDE
Marketing ()			25/11/2011	Simplify CSA Safety Standard file no., Remove structure drawing & Change Item 4.2(6) from minimum permissible load to failure rate (reference value)
Marketing ()			28/12/2011	Correction for Item 8.1 & Item 9.1.




1. CLASSIFICATION

PC BOARD USE RELAY

2. CONSTRUCTION

- 2.1 Outline drawing Drawing No. 0412386 
- 2.2 Structure drawing Drawing No. -
- 2.3 Contact structure SPST-NO
- 2.4 Contact configuration SINGLE
- 2.5 Contact material Surface material - Base material AgSnO₂
- 2.6 Protective construction ☐ Plastic seal ☒ Flux protection ☐

3. STANDARDS

- 3.1 Approved by standard (s)
- | | | |
|---|-----|---------------------|
|  | UL | File No. : E 41643 |
|  | CSA | File No. : LR 34815 |
|  | VDE | File No. : 6850ÜG |
- 3.2 Others -

4. RATINGS

- 4.1 Operating coil ☒ Refer to Table 1 (initial values)
- (1) Rated voltage and frequency - V - Hz
- (2) ☒ Rated current ☐ Setting current - mA \pm - %
(at - V - Hz)
- ☐ Resetting current - mA \pm - %
(at - V - Hz)
- (3) ☒ Coil Resistance ☐ Setting resistance - Ω \pm - %
- ☐ Resetting resistance - Ω \pm - %
- (4) Operate voltage - ~ - % of rated voltage
- (5) Rated power consumption Approx. - W
- 4.2 Contact ratings
- (1) Rated load
- | | | |
|----------------------------|-----------------------|--|
| Resistive load | AC <u>120</u> V | <u>10</u> A |
| | DC <u>30</u> V | <u>8</u> A |
| Inductive load | AC <u>-</u> V | <u>-</u> A |
| | (P.f = <u>-</u>) | |
| | DC <u>-</u> V | <u>-</u> A |
| | (L/R = <u>-</u> ms) | |
| TV Load (N.O Contact only) | AC <u>120</u> V | Steady state current <u>3</u> A
(<u>TV-3</u>) |
- (2) Rated carry current 10 A
- (3) Maximum rated voltage AC 250 V DC 125 V
- (4) Maximum rated current AC 10 A, DC 8 A
AC - A, (P.f = -)
DC - A, (L/R = - ms)

(Optional items are indicated by a check mark.)

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(5) Maximum switching capacity

Resistive load

AC 1200 VA DC 240 W

Inductive load

AC - VA(P.f = -)DC - W(L/R = - ms)

(6) Failure rate (reference value)

DC 5 V 100mA

(P level) (λ_{60} = - / ops.)

5. CHARACTERISTIC (initial value)

5.1 Contact resistance

100 m Ω MAX☒ Measured by the voltage drop method with
DC 5 V 1 A applied☐ Measured by -5.2 ☒ Operating voltage☐ Resetting voltage- V MAX.☒ Refer to Table 15.3 ☒ Releasing voltage☐ Resetting voltage- V MIN.☒ Refer to Table 15.4 ☒ Operating time☐ Setting time10 ms MAX. (when operated with
the rated voltage)5.5 ☒ Releasing time☐ Resetting time5 ms MAX. (when operated with
the rated voltage)5.6 Insulation resistance (☒ 500 VDC☐ 250 VDC)

(1) Between coil terminals and contact terminals

100 M Ω MIN.

(2) Between non - continuous current - carrying terminals

- M Ω MIN.

(3) Between contact terminals of same polarity.

100 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.5.7 Dielectric strength (Leakage current 1 mA 50/60Hz for 1 min.)

(1) Between coil terminals and contact terminals.

2000 VAC

(2) Between non - continuous current - carrying terminals.

- VAC

(3) Between contact terminals of the same polarity.

750 VAC

(4) Between set coil and reset coil.

- VAC(5) Between current - carrying terminal and exposed
non - current - carrying metal part.- VAC

5.8 Temperature rise

(1) Coil

50 °C MAX. (by the coil resistance method)Apply voltage of coil : 100 % , - Hz of the rated voltageCarry current of contact : 10 A

(2) Contact

55 °C MAX. (by the thermometer method)Apply voltage of coil : 100 % , - Hz of the rated voltageCarry current of contact : 10 A

(Optional items are indicated by a check mark.)

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- 5.9 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 1.5 mm double amplitude at vibration, frequency of 10 to 55 Hz in each direction for 2 h.
- (2) Malfunction durability
(When energized)
or set status Contact must not open for 1 ms or longer after the relay is subjected to a variable vibration of 1.5 mm double amplitude at a vibration frequency of 10 to 55 Hz for 5 min.
- (When not energized)
or reset status Contacts must not open for - ms or longer after the relay is subjected to a variable vibration of - mm double amplitude at a vibration frequency of - to - Hz for - min.
- 5.10 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)
of 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 - ms or longer after the relay is subjected to a shock of - m/s² in each direction - times.
- 5.11 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.
- 5.12 Temperature resistance
- (1) Heat resistance Must be free from any abnormality in both the construction and characteristics after the relay left in a temperature of 85±2 °C for 16 h and then in room temperature and humidity for 2 h.
- (2) Cold resistance Must be free from any abnormality in both the construction and characteristics after the relay left in a temperature of -55±3 °C for 72 h and then in room temperature and humidity for 2 h.
- 5.13 Moisture resistance Must be free from any abnormality in both the construction and characteristics after the relay left in a humidity of 90 to 95 %RH for 48 h at a temperature of 40 ± 2°C, and then room temperature and humidity for 2 h. Insulation resistance, however, must be 5 MΩ MIN.

(Optional items are indicated by a check mark.)

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5.14 Soldering heat resistance

Must be free from any abnormality in both the construction and characteristic after the terminals are dipped into molten solder at $260 \pm 5^\circ\text{C}$ for 10 ± 1 seconds and then left in room temperature and humidity for 2 h.

5.15 Service life

(1) Mechanical Life

10 000 000 operations MIN.
(under no load at operating frequency of 18 000 operations/h)

(2) Electrical Life

100 000 operations MIN.
(under rated load AC120V 10A at operating frequency of 1 800 operations/h)

(3) TV Life

25 000 operations MIN.
(under TV-3 load at operating frequency of 1 seconds ON, 59 seconds OFF)

5.16 Impulse withstand voltage

Between coil ~ contact : $1.2 \times 50 \mu\text{s}$ 4.5 kV MIN
The surge voltage is the standard impulse voltage wave of $\pm (1.2 \times 50) \mu\text{s}$ that is in accordance with JEC - 212 - 198.

6. STANDARD TEST CONDITION

Unless otherwise specified, the values described in this specification obtained under the following conditions as standard.

6.1 Temperature

23°C

6.2 Humidity

65% RH

7. STORAGE CONDITIONS

Use the product under the following conditions.

7.1 Temperature

☐ - 25 to + 55°C ☒ - 40 to + 85 °C
(without freezing or condensation)

7.2 Humidity

☒ 35 to 85 %RH ☐ - to - % RH

7.3 Environments

(1) Use in locations where the product or container is not exposed to corrosive gas such as hydrogen sulfide gas or salty air.

(2) Use in locations where no visible dust exists.


(3) Use in locations not subject to direct sunlight.

Do not apply a load to the product which may result in the deformation of the product.

8. OPERATING CONDITION

Use the product under the following conditions.

8.1 Temperature

- 40 to + 85 °C 
(without freezing or condensation)

8.2 Humidity

5 to 85 % RH

8.3 Mounting direction

THE RELAY TERMINAL SHOULD FACE DOWNWARD

8.4 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) Use in locations not subject to direct sunlight.

Do not apply a load to the product which may result in the deformation or deterioration of the product.

9. OTHERS

9.1 Class of coil insulation : Class F 

9.2 Glow Wire

This product has been certified by EN 60335-1 Edition 4 Clause 30.

10. CHANGES OF INDICATIONS

Specification other than the ratings, performance, structure and external dimensions and mounting dimensions are subject to change.

11. VALIDITY OF SPECIFICATION SHEET

11.1 When no confirmation is received within one year of the issuing date of this specification sheet, this specification sheet will be invalidated.

11.2 This specification sheet is valid for 3 years after the date of receiving confirmation.

12. WARRANTY PERIOD

12.1 Warranty period

1 year from the date on which the products are delivered to the location designated by the customer.

12.1 Scope of warranty

The warranty is limited only to repairs or replacement of defective parts, when Omron is responsible for the malfunctioning or defect that occurs during the warranty period.

The warranty applies only to individual products delivered by Omron. Therefore, the warranty does not cover any other damages induced by the malfunctioning of Omron products.

13. LIST OF RATINGS

Table 1

Rated Voltage (V)	Rated Current (mA)	Coil Resistance (Ω)	Operating Voltage	Releasing Voltage	Maximum Voltage	Power Consumption (mW)
			% OF RATED VOLTAGE			
12 VDC	33.3	360	75 MAX	10 MIN.	130 MAX	400

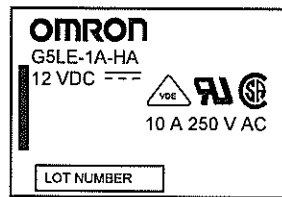
Notes :

- (1) The rated current and coil resistance values indicated are those at a temperature of 23°C, and the tolerance is $\pm 10\%$.

(Optional items are indicated by a check mark.)

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13.1 Case Marking



14. HANDLING CAUTIONS

14.1 Do not use ultrasonic cleaning, since it causes resonance inside the relay and can result in coil disconnection and contact sticking.

14.2 Do not drop products to avoid deterioration of the initial performance.

15. SEAL ABILITY

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16. WEIGHT

Approximately 12g

Revision and Out Going History

Product Specification Sheet No. : OMB-G5LE-06002

Product Type : G5LE-1A-HA

Specification : DC 12V

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