

Spec. No. G5A21-91048

(1/1)

MESSES. \_\_\_\_\_

PRODUCT SPECIFICATION  
PCR

NAME OF PRODUCT : Micro Relay

MODEL : G5A-234P-53/1~5

SPECIFICATION 4. 5~48 VDC

Revision	Contents	By/Date

ATTN; UK / E. Barrett

Date of Issue : November 19, 1991

Issued by M. Yamamoto

Checked by T. Shimizu

Approved by M. Hill

OMRON Corporation

1. Classification & Type

Single side stable

(2/7)

2. Construction

2.1 Outline dimensions

Drawing NO. G5A-K-4136

2.2 Connection diagram

Drawing NO. G5A-K-4136

2.3 Contact configuration

2PDT

3. Standards

Approved by standard(s)

4. Ratings

4.1 Coil ratings

Relay Code	Rated voltage	Rated current	Coil resistance	Must operate voltage	Must dropout voltage	Maximum voltage	Power consumption
5S/□	V DC	mA	Ω (±10%)	V DC	V DC	V DC (at 50°C)	mW
1	4.5	44.8	101	3.2	0.4	8.1	Approx. 200
2	9	22.2	405	6.3	0.9	16.2	
3	12	16.7	720	8.4	1.2	21.6	
5	24	8.3	2880	16.8	2.4	43.2	

( at 23 °C )

4.2 Contact ratings

(1) Rated load

Resistive load

AC 30 V 0.5 A

DC 30 V 1 A

Inductive load

AC 30 V 0.1 A

( p.f. = 0.4 )

DC 30 V 0.2 A

( L/R = 7 ms )

(2) Rated carry current

1 A

(3) Maximum operating voltage

AC 125 V

DC 125 V

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(4) Maximum operating current

(3/7)

Resistive load	AC	<u>1</u> A	DC	<u>1</u> A
Inductive load	AC	<u>0.5</u> A ( p.f. = 0.4 )		
	DC	<u>0.5</u> A ( L/R = 7 ms )		

(5) Maximum switching capacity

Resistive load	AC	<u>37.5</u> VA	DC	<u>33</u> W
Inductive load	AC	<u>12.5</u> VA ( p.f. = 0.4 )		
	DC	<u>11</u> W ( L/R = 7 ms )		

(6) Minimum permissible load

( reference value ) DC 10 mV 10  $\mu$ A ( P level )

5. Characteristics

5.1 Contact resistance

( initial )

100 m $\Omega$  max.  
with DC 20 mV 10 mA applied.

5.2 Operate time

5 ms max. ( at rated voltage )

5.3 Release time

5 ms max. ( at rated voltage )

5.4 Bounce time

3 ms max. ( at rated voltage )

5.5 Insulation resistance

( initial )

100 M $\Omega$  min. ( at 500V DC )

5.6 Dielectric strength

( initial )

1200 VAC , at 50/60Hz for 1 minute  
between electric circuits of different  
750 VAC , at 50/60Hz for 1 minute  
between open contacts.

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### 5.7 Temperature rise

(4/7)

(1) Coil 50 °C max. ( by the coil resistance method )

Applied voltage of coil : 100 % of rated voltage

Carry current of contact : 1 A

(2) Contact 65 °C max. ( by the thermometer method )

Applied voltage of coil : 100 % of rated voltage

Carry current of contact : 1 A

### 5.8 Vibration

(1) Mechanical durability

The product shall be free from any abnormality in both the construction and characteristics when subjected to a variable vibration of

1.5 mm double amplitude at a vibration frequency of 10 to 55 Hz in each direction for 2 hours.

(2) Malfunction durability

( When energized ) The product shall be free from a contact opening of 1 ms or longer

when subjected to a variable vibration of

1.5 mm double amplitude at a vibration frequency of 10 to 55 Hz for 5 minutes.

( When not energized ) The product shall be free from a contact opening of 1 ms or longer

when subjected to a variable vibration of

1.5 mm double amplitude at a vibration frequency of 10 to 55 Hz for 5 minutes.

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## 5.9 Shock

(5/7)

### (1) Mechanical durability

The product shall be free from any abnormality in both the construction and characteristics when subjected to a shock of 1000 m/s<sup>2</sup> ( approx. 100 G ) in each direction 3 times.

### (2) Malfunction durability

#### ( When energized )

The product shall be free from a contact opening of 1 ms or longer when subjected to a shock of 300 m/s<sup>2</sup> ( approx. 30 G ) in each direction 3 times.

#### ( When not energized )

The product shall be free from a contact opening of 1 ms or longer when subjected to a shock of 300 m/s<sup>2</sup> ( approx. 30 G ) in each direction 3 times.

## 5.10 Terminal strength

The product shall be free from any abnormality after a Tensile Stress of 1 kgf is applied to any of the terminal in the axial direction for 10 seconds. Any deformation of the terminal by the paid load shall not be regarded as a mechanical damage.

## 5.11 Temperature resistance

### (1) Heat resistance

The product shall be free from any abnormality in both the construction and characteristics when left in a temperature of 85 °C for 16 hours and then in room temperature and humidity for 2 hours.

### (2) Cold resistance

The product shall be free from any abnormality in both the construction and characteristics when left in a temperature of -55 °C for 72 hours and then in room temperature and humidity for 2 hours.

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5.12 Moisture resistance

The product shall be free from any abnormality in both the construction and characteristics when left in a humidity of 90 to 95% RH for 48 hours at a temperature of  $40 \pm 2^\circ\text{C}$ , and then in room temperature and humidity for 2 hours. Insulation resistance, however, must be 5 M $\Omega$  min. (6/7)

5.13 Soldering heat resistance

The product shall be free from any abnormality in both the construction and characteristics after the terminals are dipped into molten solder at 280 °C for 10 seconds and then left in room temperature and humidity for 2 hours.

5.14 Service life

(1) Mechanical

12 $\times 10^6$  operations min.

( under no load, at operating frequency of 36000 operations/hour )

(2) Electrical

100 $\times 10^3$  operations min.

( under rated load, at operating frequency of 1800 operations/hour )

6. Standard test conditions Unless otherwise specified, the values described (7/7)  
in this specification shall be obtained those under  
the following standard test conditions.

6.1 Temperature 23 °C

6.2 Humidity 65% RH

7. Conditions Operating/Storage

7.1 Temperature -40 °C to +70 °C ( 40 °F to +158 °F )  
( without freezing or condensation )

7.2 Humidity 45 to 85% RH

7.3 Environments

(1) The product shall not be used and stored in locations subject  
to corrosive gas such as hydrogen sulfide gas or salty air.

(2) Locations where visible dust exists.

(3) Locations subject to direct sunlight.

In no event, any load shall be applied to the product which may  
result in the deformation or deterioration of the product.

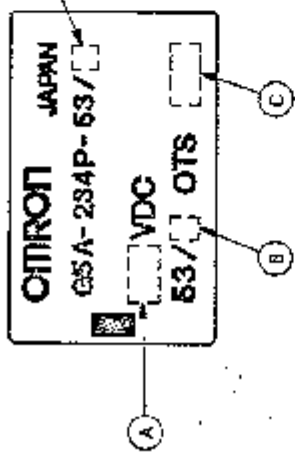
7.4 Mounting direction Free

8. Weight Approx. 3 g

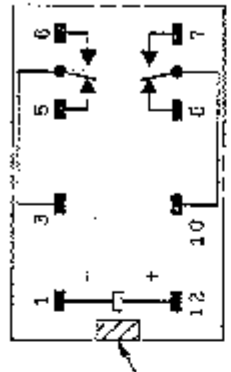
9. Sealing grade Fluorocarbon liquid at 90°C for 1 minute.

1 2 3 4 5 6

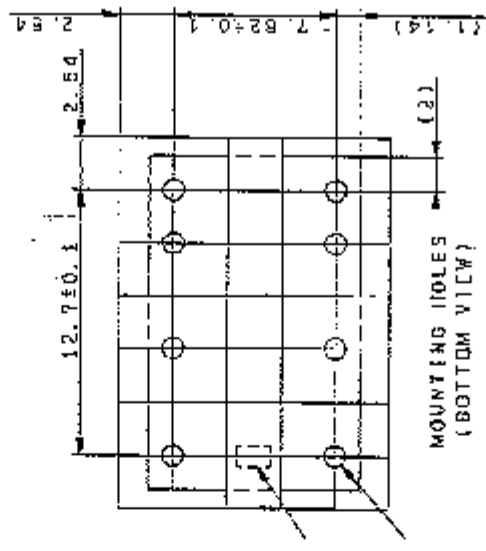
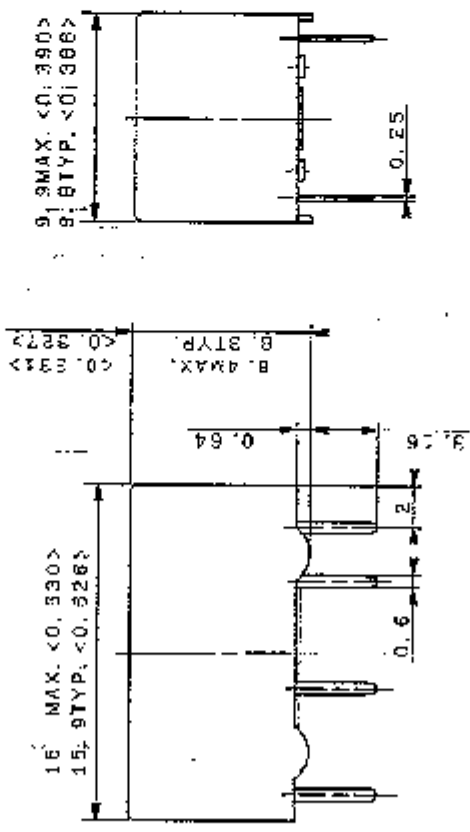
A B C D



- (A) : RATED VOLTAGE
- (B) : RELAY CODE
- (C) : LOT NO.



TERMINAL ARRANGEMENT/  
INTERNAL CONNECTIONS  
(BOTTOM VIEW)

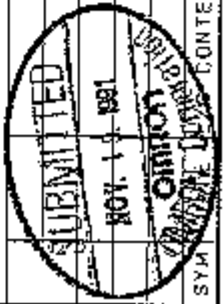


MOUNTING HOLES  
(BOTTOM VIEW)

6-1 DIA HOLES

NOTES > INDICATES "INCH"

SYMBOL	CONTENTS	E/C NO.	SIGN	MATERIAL	FINISH	SCALE	65A-234P-53
	DATE			TOLERANCES UNLESS SPECIFIED	DESIGNED	3:1	MICRO RELAY
	NOV. 1 1981			RB/09/08	CHECKED	3RD	OUTL. DRWG.
	OMRON			KUBATSU	APPROVED	4/16	
	DATE			YASUOKA	SP 7/88	SHEET	
				IMAI	DRWG. NO.	1/1	G5A-K-4135A
					DESIGNED FOR		65A-234P-53



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