Spec. NO. DS - G5Y - 254P

257-140/151/163

PRODUCT SPECIFICATION

FOR

CUSTOMER: _____

NAME OF PRODUCT: RADIO FREQUENCY RELAY

MODEL: G5Y-254P-1

SPECIFICATION: DC 5,6,9,12,24,48 V

ATTN: (Location)

(a person in charge)

Revision	Contents	by/date

Date of Issue: _____

Issued by Nakata

Checked by _____

Approved by T. Okamura

OMRON Corporation

1. Clasification — Radio frequency relay

2. Construction

2.1 Outline dimensions — Drawing NO. 3496303-1

2.2 Connection diagram — Drawing NO. -

2.3 Contact configuration — DP-DT (2 form C)

2.4 Contact structure — Double break twim contacts

2.5 Contact material

	Movable contact	Fixed contact
Face material	AuAg10	Au
Base material	Beryllium copper	Phosphor bronze

2.6 Protective construction — ☒ Plastic sealed ☐ Flux tight

☐ _____

3. Standards

3.1 Approved by standard(s) -

3.2 Conforms to standard(s) -

3.3 Others -

4. Ratings

4.1 Coil ratings

☒ See table 1

(1) Rated voltage & freguency _____ V ___-___ Hz

(2) ☒ Rated current ☐ Set Rated current _____ mA ± 10 %

(at ___-___ V, on ___-___ Hz)

☒ Reset Rated current _____ mA ± 10 %

(at ___-___ V, on ___-___

(3) ☒ Coil resistance ☐ Set coil resitsance _____ Ω ± 10 %

☐ Reset coil resistance ___-___ Ω ± ___-___ %

(4) Operate voltage ~~(or current)~~

85 ~ 110 % of rated voltage ~~(current)~~

(5) Rated power consumption

Approx. 0.36 ~~VA~~ W ~~(AC at 60 Hz)~~

4. 2 Contact ratings

(1) Rated load

Resistive load 24 VAC 0.01 A

24 VDC 0.01 A

Inductive load - VAC - A
(P. f. = -)

- VDC - A
(L / R = - ms)

(2) Rated carry current 0.5 A

(3) Maximum rated voltage 30 VAC 30 VDC

(4) Maximum rated current

Resistive load AC 0.5 A DC 0.5 A

Inductive load AC - A
(P. f. = -)
DC - W
(L / R = - ms)

(5) Maximum switching capacity

Resistive load AC 10 VA DC 10 W

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

(6) Minimum permissible load (reference value)

DC 10 mV 0.01 mA (P level,
λ60= 0.1x10^{-6}/op)

5. Characteristics (initial value)

5. 1 Contact resistance 100 mΩ max.

☒ Measured by the voltage drop method
with DC 5 V 0.1 A applied

☐ Measured by _____

5. 2 ☒ Must operate voltage (or current)

☐ Must set voltage (or current)
_____(☒ V ☐ mA) max. ☒ See table 1

5. 3 ☒ Must dropout voltage (or current)

☐ Must reset voltage (or current)
_____(☒ V ☐ mA) ☒ min. ☐ max.
☒ See table 1

5. 4 ☒ Operate time ☐ Set time 10 ms max. (at rated voltage)

5. 5 ☒ Release time ☐ Reset time 5 ms max. (at rated voltage)

5. 6 Insulation resistance (☒ 500 VDC ☐ 250 VDC

(1) Between coil terminals and contact terminals 100 MΩ mini.

(2) Between non-continuous current-carrying contact terminals 100 MΩ mini.

(3) Between contact terminals of the same polarity 100 MΩ mini.

(4) Between set coil and reset coil - MΩ mini.

(5) Between current-carrying terminal and exposed non-current-carrying metal part. 100 MΩ mini.

5. 7 Dielectric strength (reakage current 10 mA 50/60 Hz for 1 minute)

(1) Between coil terminals and contact terminals 1000 VAC

(2) Between non-continuous current-carrying terminals 500 VAC

(3) Between contact terminals of the same polarity 500 VAC

(4) Between set coil and reset coil - VAC

(5) Between current-carrying terminal and exposed non-current-carrying metal part 500 VAC

5. 8 Temperature rise

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

Applied voltage of coil: 100% of rated voltage - Hz

Carry current of contact: ____ A

(2) Contact - ℃ max. (by the thermometer method)

Applied voltage of coil: ___% of rated voltage___Hz

Carry current of contact: ___A

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 a vibration, frequency of 10 to 55 Hz in each direction for 2 hours.

(2) Malfunction durability

(When energized) or set status

Contacts must not open for 0.01 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 minutes.

(When not energized) or reset status

Contacts must not open for 0.01 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 minutes.

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 5 times

(2) Malfunction durability

(When energized) or set status: Contacts must not open for 0.01 ms or longer after the relay is subjected to a shock of 200 m/s² in each direction 3 times

(When not energized) or reset status: Contacts must not open for 0.01 ms or longer after the relay is subjected to a shock of 200 m/s² in each direction 3 times.

5.11 Terminal strength: Must be free from any abnormality after a tensile stress of 0.5 kgf 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 regared 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 is left in a temperature of 85 ℃ 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 ℃ for 72 hours and then in room temperature and humidity for 2 hours.

5.13 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℃, and then in room temperature and humidity for 2 hours. Insulation resistance, however, must be 10 MΩ min.

5.14 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 (360) ℃ for 10 (4) seconds and then left in room temperature and humidity for 2 hours.

5. 15 Service life

(1) Mechanical life — 1,000,000 operations min.
(under no load at operating frequency of 1,800 operations / hour)

(2) Electrical life — 300,000 operations. min. (under rated load, at operating frequency of 1,800 operations / hour)

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

6. 1 Temperature — 23 ℃

6. 2 Humidity — 65% RH

7. Storage conditions — Use the product under the following conditions.

7. 1 Temperature — ☐ −25 to +55℃ ☒ −25 to +60 ℃
(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 conditions — Use the product under the following conditions.

8.1 Temperature — -30 to +60 ℃
(without freezing or condensation)

8.2 Humidity — 35 to 85 % RH

8.3 Mounting direction — -

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 deteration of the product.

9. Others

9.1 Frequency characteristics

Isolation : 900MHz;60 dB min.
Insertion loss : 900MHz;1.0dB max.
VSWR : 900MHz;1.8 max.
Rated load : 1 W at 900MHz 50ohm (VSWR=1.2)
Max carry power : 10W at 900MHz 50ohm (VSWR=1.2)
Max switching capacity : 10W at 900MHz 50ohm (VSWR=1,2)

9.2 Sealability

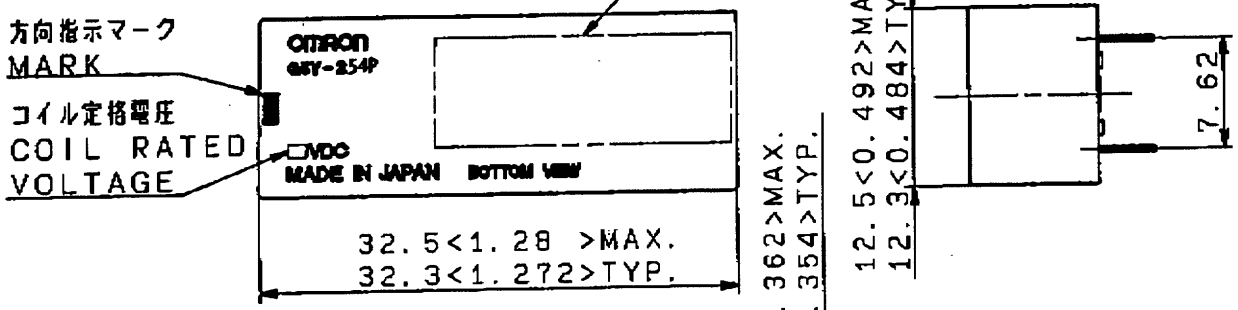
No bubbles in Freorocarbon liquid at 70 ℃ for 60 seconds.

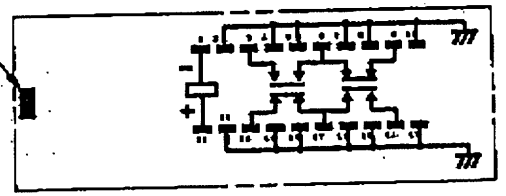
9.3 Table 1.

Rated voltage(V)	5	6	9	12	24	48
Rated current(mA)	71.9	60.0	40.0	30.0	15.0	7.5
Coil resistance(Ω)	69.5	100	225	400	1600	6400
Must operated voltage(V)	3.75	4.5	6.75	9.0	18.0	36.0
Must dropout voltage(V)	0.25	0.3	0.45	0.6	1.2	2.4

端子配置/内部接続図
TERMINAL ARRANGEMENT/
INTERNAL CONNECTIONS
(BOTTOM VIEW)

注1. < >ハ、INCH ヲ示ス。
NOTE1. < > INDICATES "INCH".





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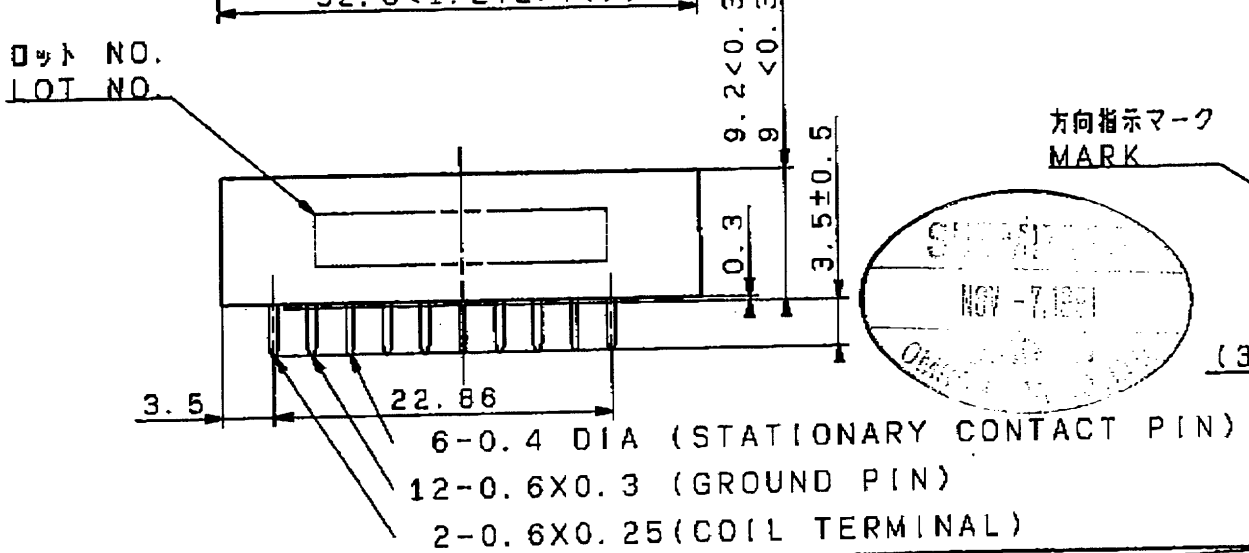

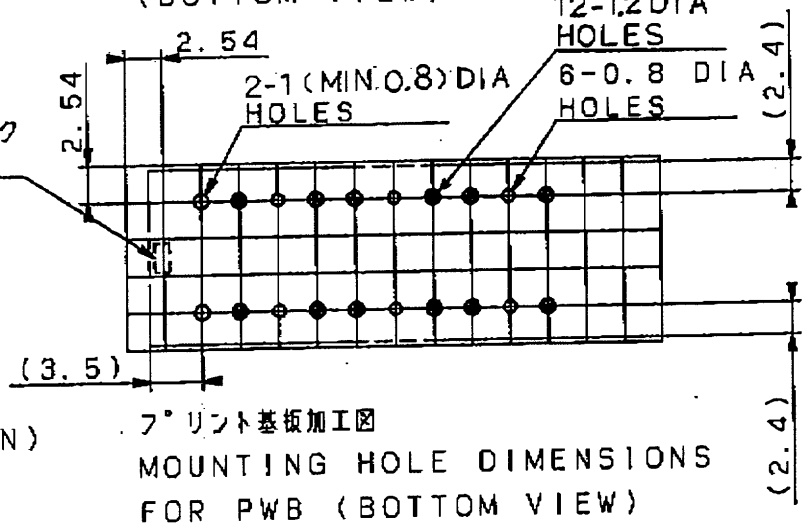

プリント基板加工図
MOUNTING HOLE DIMENSIONS
FOR PWB (BOTTOM VIEW)

SYM	DATE	E/C CONTENTS	E/C NO.	SIGN
A1	90.09.14	形式変更		仲田

MATERIAL
FINISH
TOLERANCES UNLESS SPECIFIED

DESIGNED	CHECKED	APPROVED
89/06/01 CR Y. NAKANISHI	CR T. TANAKA	

SCALE
3RD ANGLE
SHEET

G5Y-254P RADIO FREQUENCY
高周波リレー RELAY
カ"イケイス" OUTL. DRWG

DRWG NO. 3496303-1 A1
DESIGNED FOR G5Y-254P-1

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