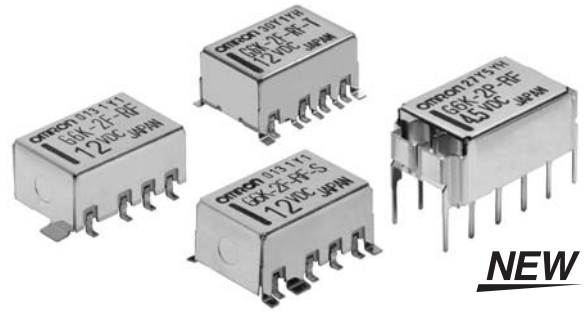


# G6K(U)-2F(P)-RF(-S, -T)

Surface-mounting High-frequency Relay

## Surface-mounting, 1-GHz-Band/ 3-GHz-Band, Miniature, DPDT, High-frequency Relay

- Superior high-frequency characteristics (at 1 GHz), such as an isolation of 20 dB min. between contacts of the same polarity of 30 dB min. between contacts of different polarity with an insertion loss of 0.2 dB max.
- Miniaturized to 10.3 × 6.9 × 5.4 mm (L × W × H).
- Rated power consumption of 100 mW with high sensitivity
- Single-side stable and single-winding latching models are available.
- Models with a smaller footprint (G6K(U)-2F-RF-S) are available to help save space.
- G6K(U)-2F-RF-T models for 3-GHz band join the lineup with a downsized footprint.
- New PCB terminals models are available.



RoHS Compliant

### Model Number Legend

G6K□-□□-□-□  
1 2 3 4 5

#### 1. Relay Function

None: Single-side stable  
U: Single-winding latching

#### 2. Number of poles/ Contact Form

2: 2-pole/ DPDT (2c)

#### 3. Terminal Shape

F: Outside-L surface mounting terminals  
P: PCB terminals

#### 4. Special Function

RF: High-frequency compatible

#### 5. Terminal Shape

None: Standard  
S: Small footprint  
T: Compatible with 3 GHz

### Application Examples

- Communications equipment
- Broadcasting and audio-visual equipment
- Test & measurement equipment

### Ordering Information

#### Standard Models with Surface-mounting Terminals Standard Specifications

| Relay Function          | Enclosure rating | Contact form | Model      | Rated coil voltage    | Minimum packing unit |
|-------------------------|------------------|--------------|------------|-----------------------|----------------------|
| Single-side stable      | Fully sealed     | DPDT (2c)    | G6K-2F-RF  | 3, 4.5, 5, 12, 24 VDC | 300 pcs/tray         |
| Single-winding latching |                  |              | G6KU-2F-RF | 3, 4.5, 5, 12, 24 VDC | 300 pcs/reel         |

#### Board space-saving model

| Relay Function          | Enclosure rating | Contact form | Model        | Rated coil voltage    | Minimum packing unit |
|-------------------------|------------------|--------------|--------------|-----------------------|----------------------|
| Single-side stable      | Fully sealed     | DPDT (2c)    | G6K-2F-RF-S  | 3, 4.5, 5, 12, 24 VDC | 300 pcs/tray         |
| Single-winding latching |                  |              | G6KU-2F-RF-S | 3, 4.5, 5, 12, 24 VDC | 300 pcs/reel         |

#### Compatible with 3 GHz

| Relay Function          | Enclosure rating | Contact form | Model        | Rated coil voltage    | Minimum packing unit |
|-------------------------|------------------|--------------|--------------|-----------------------|----------------------|
| Single-side stable      | Fully sealed     | DPDT (2c)    | G6K-2F-RF-T  | 3, 4.5, 5, 12, 24 VDC | 300 pcs/tray         |
| Single-winding latching |                  |              | G6KU-2F-RF-T | 3, 4.5, 5, 12, 24 VDC | 300 pcs/reel         |

#### PCB terminals

| Relay Function     | Enclosure rating | Contact form | Model     | Rated coil voltage    | Minimum packing unit |
|--------------------|------------------|--------------|-----------|-----------------------|----------------------|
| Single-side stable | Fully sealed     | DPDT (2c)    | G6K-2P-RF | 3, 4.5, 5, 12, 24 VDC | 30 pcs/tube          |

Note 1. When ordering, add the rated coil voltage to the model number.

Example: G6K-2F-RF DC3

Rated coil voltage

However, the notation of the coil voltage on the product case as well as on the packing will be marked as □□ VDC.

Note 2. When ordering Relays in tape packing, add "-TR03" to the end of the model number.

Example: G6K-2F-RF-TR03 DC3

Relays per reel: 300 pcs for -TR03

Be sure since "-TR" is not part of the relay model number, it is not marked on the relay case.

When ordering tape packing, minimum order unit is 1 reel (300 pcs × 1 = 300 pcs).

G6K(U)-2F(P)-RF(-S, -T)

# G6K(U)-2F(P)-RF(-S, -T)

## Surface-mounting High-frequency Relay

### ■ Ratings

#### ● Coil: Single-side Stable (G6K-2F(P)-RF(-S, -T))

| Item          | Rated current (mA) | Coil resistance (Ω) | Must operate voltage (V) | Must release voltage (V) | Maximum voltage (V) | Power consumption (mW) |
|---------------|--------------------|---------------------|--------------------------|--------------------------|---------------------|------------------------|
| Rated voltage |                    |                     | % of rated voltage       |                          |                     |                        |
| 3 VDC         | 33.0               | 91                  | 80% max.                 | 10% min.                 | 150%                | Approx. 100            |
| 4.5 VDC       | 23.2               | 194                 |                          |                          |                     |                        |
| 5 VDC         | 21.1               | 237                 |                          |                          |                     |                        |
| 12 VDC        | 9.1                | 1,315               |                          |                          |                     |                        |
| 24 VDC        | 4.6                | 5,220               |                          |                          |                     |                        |

#### ● Coil: Single-winding Latching Models (G6KU-2F-RF(-S, -T))

| Item          | Rated current (mA) | Coil resistance (Ω) | Must set voltage (V) | Must reset voltage (V) | Maximum voltage (V) | Power consumption (mW) |
|---------------|--------------------|---------------------|----------------------|------------------------|---------------------|------------------------|
| Rated voltage |                    |                     | % of rated voltage   |                        |                     |                        |
| 3 VDC         | 33.0               | 91                  | 75% max.             | 75% max.               | 150%                | Approx. 100            |
| 4.5 VDC       | 23.2               | 194                 |                      |                        |                     |                        |
| 5 VDC         | 21.1               | 237                 |                      |                        |                     |                        |
| 12 VDC        | 9.1                | 1,315               |                      |                        |                     |                        |
| 24 VDC        | 4.6                | 5,220               |                      |                        |                     |                        |

Note 1. The rated current and coil resistance are measured at a coil temperature of 23°C with a tolerance of ±10%.

Note 2. The operating characteristics are measured at a coil temperature of 23°C.

Note 3. The maximum voltage is the highest voltage that can be imposed on the Relay coil instantaneously.

#### ● Contacts

| Item                   | Load | Resistive load                                |
|------------------------|------|-----------------------------------------------|
| Rated load             |      | 125 VAC, 0.3 A<br>30 VDC, 1 A<br>1 GHz, 1 W * |
| Rated carry current    |      | 1 A                                           |
| Max. switching voltage |      | 125 VAC or 60 VDC                             |
| Max. switching current |      | 1A                                            |

\* This value is for a V.SWR of 1.2 max. at the load.

#### ● High-frequency Characteristics \*1

| Model                   |                                        | G6K(U)-2F(P)-RF(-S) | G6K(U)-2F-RF-T |             |
|-------------------------|----------------------------------------|---------------------|----------------|-------------|
| Item                    | Frequency                              | 1GHz                | 1GHz           | 3GHz        |
| Isolation               | Between contacts of the same polarity  | 20 dB min.          | 20 dB min.     | 18 dB min.  |
|                         | Between contacts of different polarity | 30 dB min.          | 30 dB min.     | 25 dB min.  |
| Insertion loss          |                                        | 0.2 dB max.         | 0.2 dB max.    | 0.6 dB max. |
| V.SWR                   |                                        | 1.2 max.            | 1.2 max.       | 1.4 max.    |
| Maximum carry power     |                                        | 3W *2               |                |             |
| Maximum switching power |                                        | 1W *2               |                |             |

Note 1. The impedance of the measurement system is 50 Ω.

Note 2. The above values are initial values.

\*1. Contact your OMRON representative if the Relay will be used in an application that requires high repeatability in high-frequency characteristics for the microload region. (Such applications include testing and measurement equipment and ATE applications.)

\*2. These values are for a V.SWR of 1.2 max. at the load.

### ■ Characteristics

| Relay Function                |                                        | Single-side stable models                                                                                    | Single-winding latching models |
|-------------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------|
| Item                          | Model                                  | G6K-2F(P)-RF(-S, -T)                                                                                         | G6KU-2F-RF(-S, -T)             |
| Contact resistance *1         |                                        | 100 mΩ max.                                                                                                  |                                |
| Operating (set) time *2       |                                        | 3 ms max. (approx. 1.4 ms)                                                                                   | 3 ms max. (approx. 1.2 ms)     |
| Release (reset) time *2       |                                        | 3 ms max. (approx. 1.3 ms)                                                                                   | 3 ms max. (approx. 1.2 ms)     |
| Minimum set/reset pulse time  |                                        | ---                                                                                                          | 10 ms                          |
| Insulation resistance *3      |                                        | 1,000 MΩ min. (at 500 VDC)                                                                                   |                                |
| Dielectric strength           | Between coil and contacts              | 750 VAC, 50/60 Hz for 1 min                                                                                  |                                |
|                               | Between contacts of different polarity | 750 VAC, 50/60 Hz for 1 min                                                                                  |                                |
|                               | Between contacts of the same polarity  | 750 VAC, 50/60 Hz for 1 min                                                                                  |                                |
|                               | Between ground and coil/contacts       | 500 VAC, 50/60 Hz for 1 min                                                                                  |                                |
| Vibration resistance          | Destruction                            | 10 to 55 to 10 Hz, 2.5 mm single amplitude (5 mm double amplitude) and 55 to 500 Hz, 300 m/s <sup>2</sup>    |                                |
|                               | Malfunction                            | 10 to 55 to 10 Hz, 1.65 mm single amplitude (3.3 mm double amplitude) and 55 to 500 Hz, 200 m/s <sup>2</sup> |                                |
| Shock resistance              | Destruction                            | 1,000 m/s <sup>2</sup>                                                                                       |                                |
|                               | Malfunction                            | 750 m/s <sup>2</sup>                                                                                         |                                |
| Durability                    | Mechanical                             | 50,000,000 operations min. (at a switching frequency of 36,000 operations/hour)                              |                                |
|                               | Electrical                             | 100,000 operations min. (at a switching frequency of 1,800 operations/hour)                                  |                                |
| Ambient operating temperature |                                        | -40°C to 70°C (with no icing or condensation)                                                                |                                |
| Ambient operating humidity    |                                        | 5% to 85%                                                                                                    |                                |
| Weight                        |                                        | Approx. 0.95 g                                                                                               |                                |

Note. The above values are initial values.

\*1. The contact resistance was measured with 10 mA at 1 VDC with a voltage drop method.

\*2. Values in parentheses are actual values.

\*3. The insulation resistance was measured with a 500 VDC megohmmeter applied to the same parts as those used for checking the dielectric strength.