

High Frequency Relay

G6K-RF

Compact High Frequency Relays with 2 Form C (DPDT) Contacts

- Handles 1 A, 30 VDC discrete load and 1 W at 1 GHz high frequency load.
- Single-coil latching models available.
- Gullwing surface mount terminals.
- Ambient temperature range: -40° to 70°C.
- Low coil power consumption: 100 mW.
- Ideal for instrumentation and high-speed LAN network equipment.
- RoHS Compliant.



Ordering Information

Contact form	Max. load	Coil voltage	Non-latching part number	Single-coil latching part number
DPDT (2 Form C)	1 A at 30 VDC, 0.3 A at 125 VAC	3 VDC	G6K-2F-RF DC3	G6KU-2F-RF DC3
		4.5 VDC	G6K-2F-RF DC4.5	G6KU-2F-RF DC4.5
		5 VDC	G6K-2F-RF DC5	G6KU-2F-RF DC5
		6 VDC	G6K-2F-RF DC6	G6KU-2F-RF DC6
		9 VDC	G6K-2F-RF DC9	G6KU-2F-RF DC9
		12 VDC	G6K-2F-RF DC12	G6KU-2F-RF DC12
		24 VDC	G6K-2F-RF DC24	G6KU-2F-RF DC24

Specifications

CONTACT DATA

Contact form	DPDT (2 Form C)	
Contact material	Au alloy on Ag base	
Contact resistance	100 mΩ max.	
Contact rating	High frequency	1 GHz, 1 W (See note)
	Resistive load	0.3 A, 125 VAC; 1 A, 30 VDC
Operate (set) time	3 ms max.	
Release (reset) time	3 ms max.	
Max. switching voltage	60 VDC, 125 VAC	
Max. switching current	1 A	
Max. switching capacity	37.5 VA (AC); 30 W (DC)	

Note: This value is for a load with V.S.W.R. ≤1.2

■ COIL DATA

Rated voltage	Rated current	Coil resistance	Must operate voltage	Must release voltage	Rated power consumption	Maximum voltage
3 VDC	33.0 mA	91 Ω	80% max. of rated voltage	10% min. of rated voltage	Approx. 100 mW	150% of rated voltage
4.5 VDC	23.2 mA	194 Ω				
5 VDC	21.1 mA	237 Ω				
6 VDC	17.6 mA	341 Ω				
9 VDC	11.3 mA	795 Ω				
12 VDC	9.1 mA	1315 Ω				
24 VDC	4.6 mA	5220 Ω				

- Note:**
1. The value of the above list is measured at ambient temperature 23°C with the tolerance of rated current and coil resistance ±10%.
 2. The maximum voltage is the highest voltage that can be applied on the relay coil and it is on the ambient temperature under the operating conditions.
 3. Other items are measured at 23°C.

■ HIGH FREQUENCY CHARACTERISTICS

Isolation	20 dB min. at 1 GHz between continuous contact 30 dB min. at 1 GHz between non-continuous contact
Insertion loss	0.2 dB max. at 1 GHz
V.S.W.R. return loss	1.2 max. at 1 GHz
Maximum transmission capacity	3 W
Maximum switching capacity	1 W

Note: Measured with 50 Ω and V.S.W.R. ≤1.2

■ CHARACTERISTICS

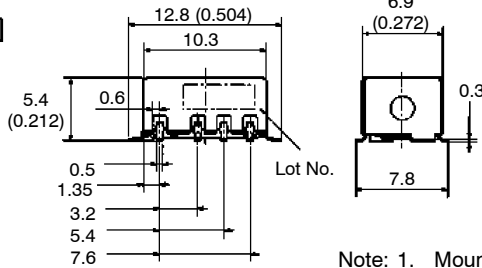
Dielectric strength	Between open contacts	750 VAC, 50/60 Hz for 1 minute
	Between contact sets	750 VAC, 50/60 Hz for 1 minute
	Between contacts and coil	750 VAC, 50/60 Hz for 1 minute
	Contacts and ground	500 VAC, 50/60 Hz for 1 minute
Insulation resistance		1000 MΩ min. at 500 VDC
Operation (set) time	At 20°C	3 ms max.
Release (reset) time	At 20°C	3 ms max.
Shock resistance	Malfunction	750 m/s ² (approx. 75G)
	Destruction	1000 m/s ² (approx. 100G)
Vibration resistance	Malfunction	0.01 ms min., 10 Hz to 55 Hz (3.3 mm double amplitude)
	Destruction	2 hours, 55 Hz to 500 Hz (5 mm double amplitude)
Mechanical life expectancy		50 million operations min.
Electrical life expectancy	Resistive load	100,000 operations min. (0.3 A, 125 VAC or 1 A, 30 VDC)
Ambient temperature		-40° to 70°C with no icing
Ambient humidity		5% to 85% RH
Weight		Approx. 0.95 g

Dimensions

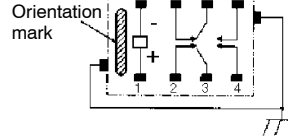
Unit: mm (inch)

RELAYS

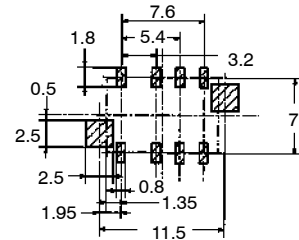
G6K-2F-RF



Terminal arrangement/
Internal connections
(top view)

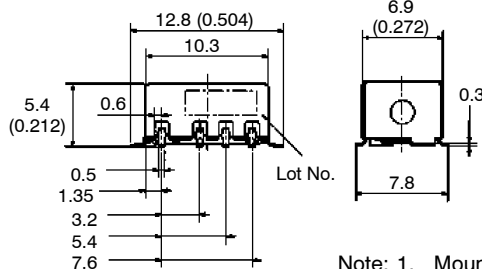


Mounting pads
(top view)

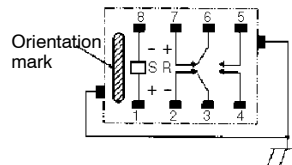


- Note: 1. Mounting pads tolerance: ± 0.1 mm
- 2. Tolerance for other parts: ± 0.3 mm
- 3. Coplanarity: Max. 0.15

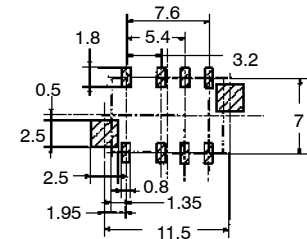
G6KU-2F-RF



Terminal arrangement/
Internal connections
(top view)



Mounting pads
(top view)



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- 2. Tolerance for other parts: ± 0.3 mm
- 3. Coplanarity: Max. 0.15

Precautions

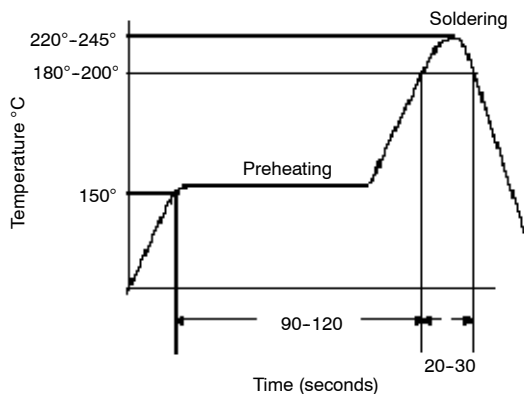
SOLDERING CONDITIONS

Do not unpack the relay until ready to mount it.

Solder type: JIS Z3282, H63A or equivalent

The temperature profile for infrared reflow soldering (IRS) was measured on the surface of the PCB.

The recommended thickness of solder paste is from 150 μ m to 200 μ m.



Coating

The relay mounted on the PCB may be coated or washed, but do not apply silicone coating or detergent containing silicone, otherwise, the silicone coating or detergent may remain on the surface of the relay.