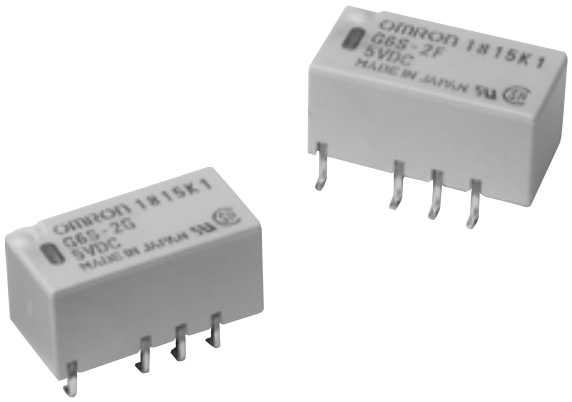
OMRON

Low Signal Relay

G6S

- Third generation surface mount design
- Design is based on worldwide telecommunications, data communications, computer peripheral and office automation relay requirements
- High dielectric withstand voltage of 2,000 VAC between coil and contacts (standard type)
- Meets 2.5kV Bellcore surge requirement
- Offers significant board space savings
- European version certified for EN60950/ EN41003 Supplementary Insulation at 250 V
- Available in PCB through-hole terminal configuration
- Tape and reel packaging option available



Ordering Information

To Order: Select the part number and add the desired coil voltage rating, (e.g., G6S-2F-*DC12*).

■ STANDARD VERSION

Terminal	Contact form	Part number			
		Non-latching	Single coil latching	Dual coil latching	High-sensitivity dual coil latching
Gull-wing	DPDT	**G6S-2F**	**G6SU-2F**	**G6SK-2F**	**G6SK-2F-H**
Inside “L”	DPDT	**G6S-2G**	**G6SU-2G**	**G6SK-2G**	**G6SK-2G-H**
PCB through-hole	DPDT	**G6S-2**	**G6SU-2**	**G6SK-2**	**G6SK-2-H**

■ EUROPEAN VERSION

Certified for EN60950/EN41003 Supplementaty Insulation at 250 V

Terminal	Contact form	Part number
		Non-latching
Gull-wing	DPDT	**G6S-2F-Y**
Inside “L”	DPDT	**G6S-2G-Y**
PCB through-hole	DPDT	**G6S-2-Y**

Specifications

■ CONTACT DATA

Load	Resistive load (cos ø = 1)
Rated load	0.5 A at 125 VAC 2 A at 30 VAC
Contact material	Ag (Au clad)
Max. carry current	2 A
Max. operating voltage	250 VAC, 220 VDC
Max. operating current	2 A
Max. switching capacity	62.5 VA, 60 W
Min. permissible load	10 mVDC, 10 μA

■ COIL DATA

G6S – Standard non-latching (G6S-2F, G6S-2G, G6S-2)

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Pick-up voltage	Dropout voltage	Maximum voltage	Power consumption (mW)
			% of rated voltage			
3	46.7	64.3	75% max.	10% min.	200% max.	140
4.5	31.0	145				
5	28.1	178				
6	23.3	257				
9	15.5	579				
12	11.7	1,028				
24	8.3	2,880	75% max.	10% min.	170% max.	200

G6SU – Standard single coil latching (G6SU-2F, G6SU-2G, G6SU-2)

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Set pick-up voltage	Reset pick-up voltage	Maximum voltage	Power consumption (mW)
			% of rated voltage			
3	33.3	90	75% max.	75% max.	180% max.	100
4.5	22.2	203				
5	20.0	250				
6	16.7	360				
9	11.1	810				
12	8.3	1,440				
24	6.3	3,840	75% max.	75% max.	180% max.	150

G6SK – Standard dual coil latching (G6SK-2F, G6SK-2G, G6SK-2)

Set coil			Reset coil					
Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Rated current (mA)	Coil resistance (Ω)	Set pick-up voltage	Reset pick-up voltage	Maximum voltage	Power consumption (mW)
					% of rated voltage			
3	66.6	45	66.6	45	75% max.	75% max.	170% max.	200
4.5	44.4	101	44.4	101				
5	40.0	125	40.0	125				
6	33.3	180	33.3	180				
9	22.2	405	22.2	405				
12	16.7	720	16.7	720				
24	12.5	1,920	12.5	1,920	75% max.	75% max.	140% max.	300

■ COIL DATA (continued)

G6SK – Standard high-sensitivity dual coil latching (G6SK-2F-H, G6SK-2G-H, G6SK-2-H)

Set coil			Reset coil					
Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Rated current (mA)	Coil resistance (Ω)	Set pick-up voltage	Reset pick-up voltage	Maximum voltage	Power consumption (mW)
					% of rated voltage			
3	46.7	64.3	46.7	64.3	75% max.	75% max.	130% max.	140
4.5	31.0	145	31.0	145				
5	28.1	178	28.1	178				
6	23.3	257	23.3	257				
9	15.6	579	15.6	579				
12	11.7	1,028	11.7	1,028				
24	8.33	2,880	8.33	2,880	75% max.	75% max.	130% max.	200

G6S – European version, non-latching (G6S-2F-Y, G6S-2G-Y, G6S-2-Y)

Rated voltage (DC)	Rated current (mA)	Coil resistance (Ω)	Pick-up voltage	Dropout voltage	Maximum voltage	Power consumption (mW)
			% of rated voltage			
3	66.7	45	75% max.	10% min.	130% max.	200
4.5	44.6	101				
5	40.0	125				
6	33.3	180				
9	22.2	405				
12	16.7	720				
24	9.58	2,504	75% max.	10% min.	110% max.	230

Note: 1. The rated current and coil resistance are measured at a coil temperature of 23°C (73°F) with a tolerance of ±10%.
2. The operating characteristics are measured at a coil temperature of 23°C (73°F) unless otherwise specified.
3. Pick-up voltage is measured with no carry current across the contacts.
4. Pick-up voltage will vary with temperature.

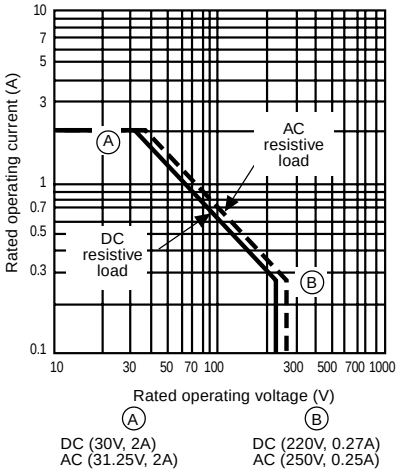
■ CHARACTERISTICS

Contact resistance		75 mΩ max.
Operate (set) time		4 ms max. (mean value approx. 2.5 ms G6S; 2.0 ms G6SU, G6SK)
Release (reset) time		4 ms max. (mean value approx. 1.5 ms G6S; 2.0 ms G6SU, G6SK)
Bounce time		Approx. 0.5 ms
Insulation resistance		1,000 MΩ min. (at 500 VDC)
Dielectric strength		2,000 VAC, 50/60 Hz for 1 minute (G6S, G6SU) between coil and contacts 1,000 VAC, 50/60 Hz for 1 minute (G6SK) between coil and contacts 1,500 VAC, 50/60 Hz for 1 minute between contacts of different poles 1,000 VAC, 50/60 Hz for 1 minute between contacts of same pole
Surge withstand voltage		2,500 V, 2 x 10 μS (conforms to Bellcore specifications) for G6S and G6SU; 1,500 V, 10 x 160 μS (conforms to FCC part 68) for G6SK between coil and contacts 2,500 V, 2 x 10 μS (conforms to Bellcore specs.) between contacts of different poles 1,500 V, 10 x 160 μS (conforms to FCC part 68) between contacts of same pole
Vibration	Mechanical durability	10 to 55 Hz; 5 mm (0.20 in) double amplitude
	Malfunction durability	10 to 55 Hz; 3.3 mm (0.13 in) double amplitude
Shock	Mechanical durability	1,000 m/s^2; approx. 100 G
	Malfunction durability	750 m/s^2; approx. 75 G
Ambient temperature		-40 to +85°C (-40°F + 185°F)
Humidity		35 to 85% RH
Service life	Mechanical	100,000,000 operations min. (at 36,000 operations/hour)
	Electrical	See "Characteristic Data"
Weight		Approx. 2g (0.07 oz)

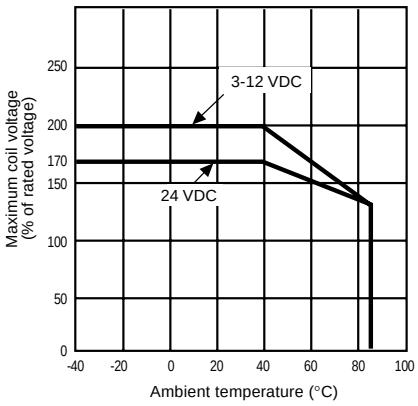
Note: Data shown are of initial value.

■ CHARACTERISTIC DATA

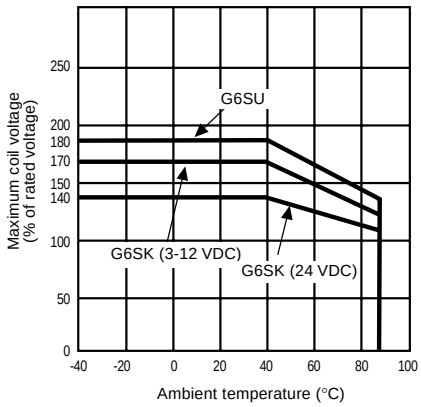
Maximum switching capacity



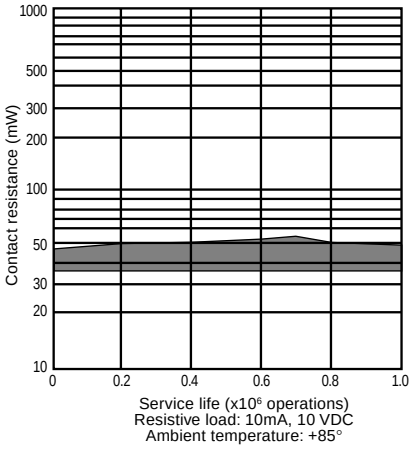
Ambient temperature vs. maximum coil voltage (G6S)

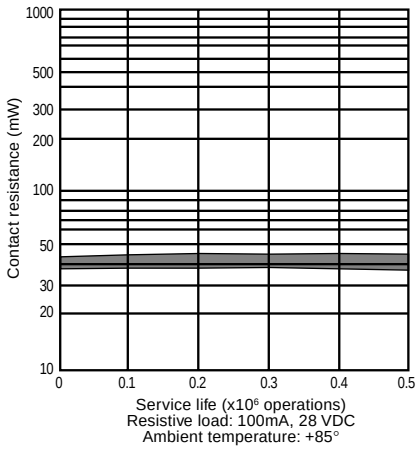


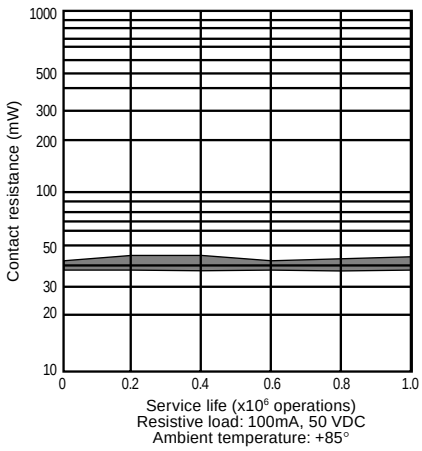
Ambient temperature vs. maximum coil voltage (G6SU, G6SK)



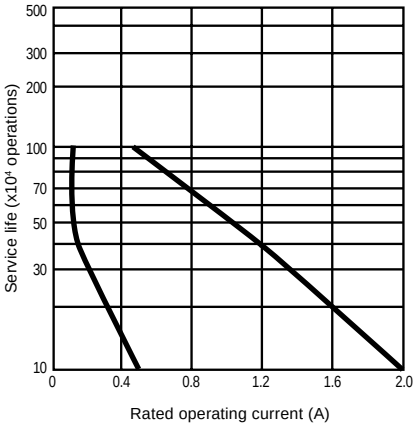
Service Life





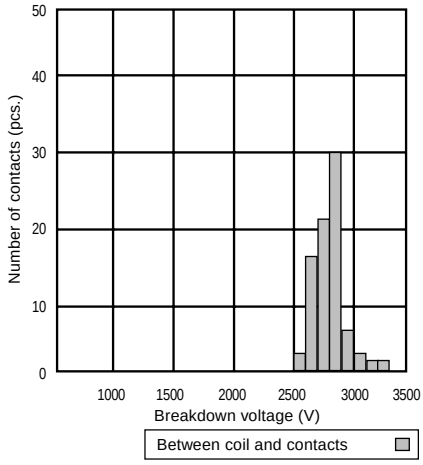


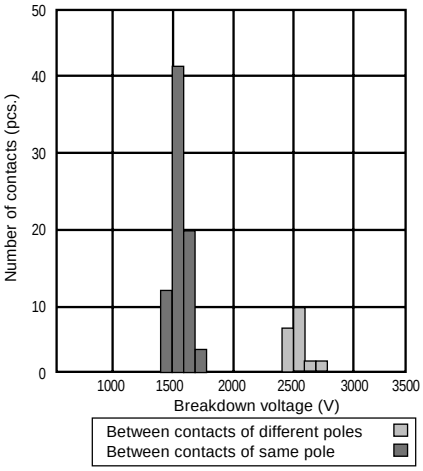
Electrical service life



Dielectric strength (Standard version, non-latching)

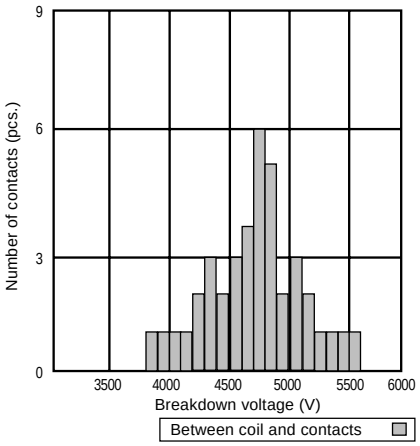
Detecting current: 1mA



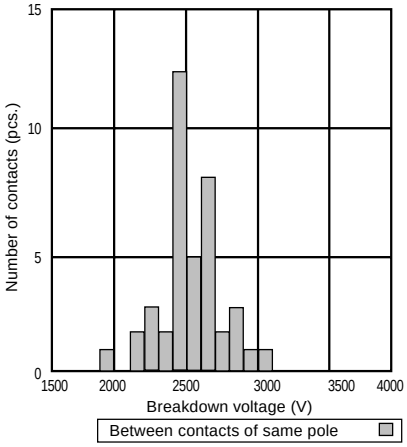


Impulse withstand voltage (Standard version, non-latching)

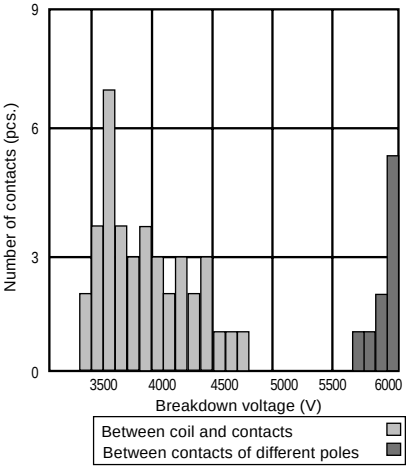
(2 x 10 μs)



(10 x 160 μs)

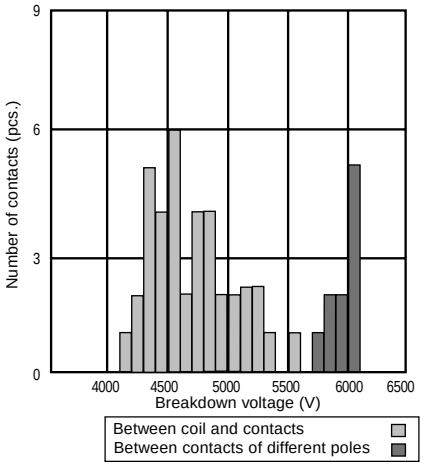


(10 x 160 μs)

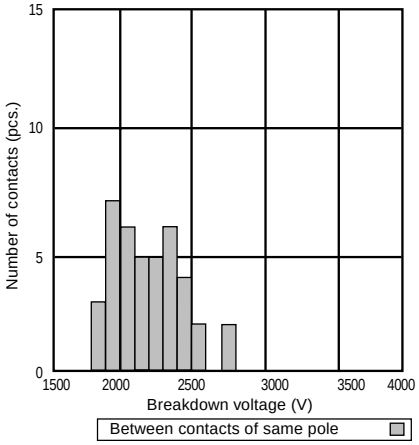


Impulse withstand voltage (European version)

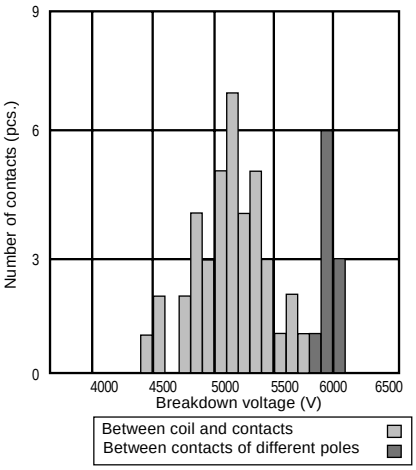
(10 x160 μs)



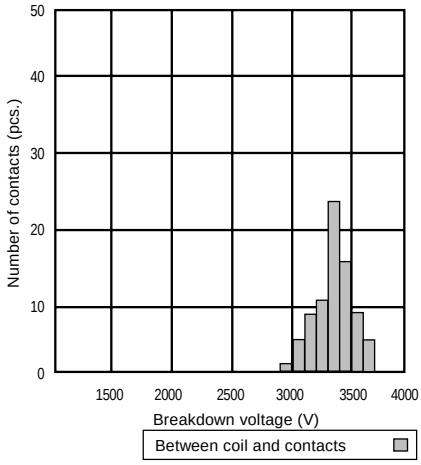
(10 x 160μs)

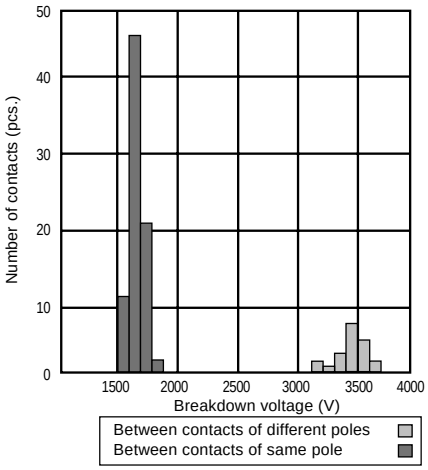


(2 x 10 μs)



Dielectric strength (European version, non-latching)
Detecting current: 1mA



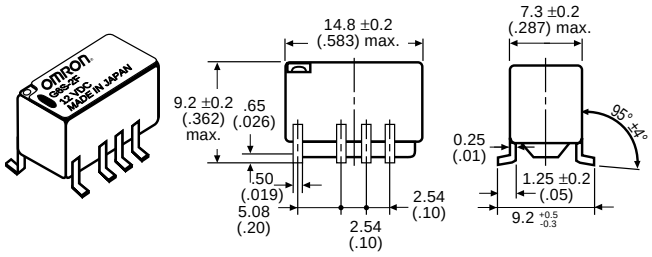


Dimensions

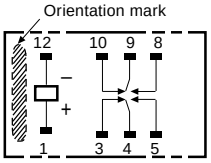
Unit: mm (inch)

■ STANDARD

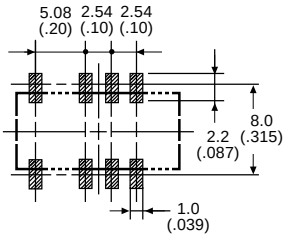
G6S-2F,
G6S-2F-Y



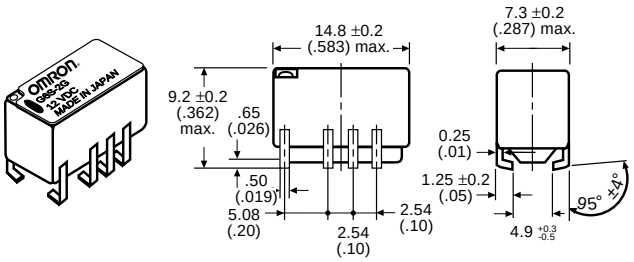
Terminal arrangement/
Internal connections
(Top view)



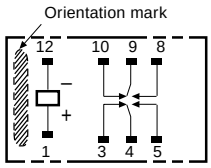
Mounting pads
(Top view)



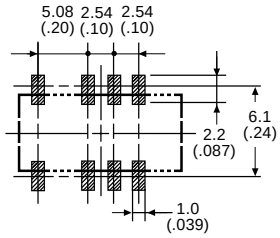
G6S-2G,
G6S-2G-Y



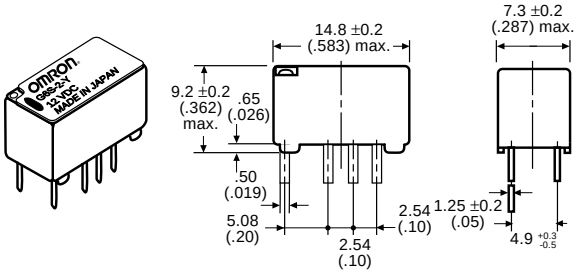
Terminal arrangement/
Internal connections
(Top view)



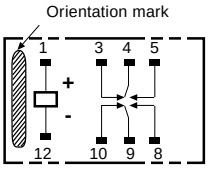
Mounting pads
(Top view)



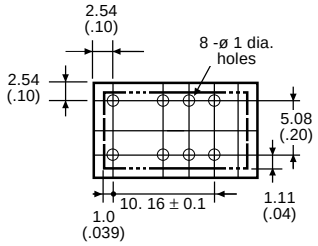
G6S-2,
G6S-2-Y



Terminal arrangement/
Internal connections
(Bottom view)



Mounting holes
(Bottom view)

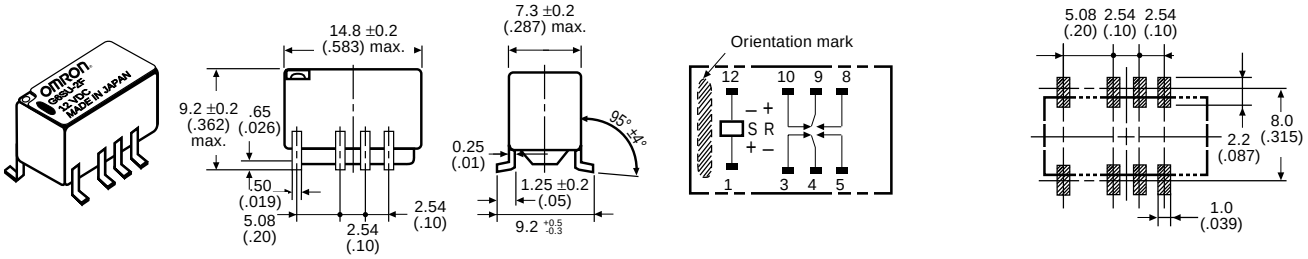


■ SINGLE COIL LATCHING

G6SU-2F

Terminal arrangement/ Internal connections (Top view)

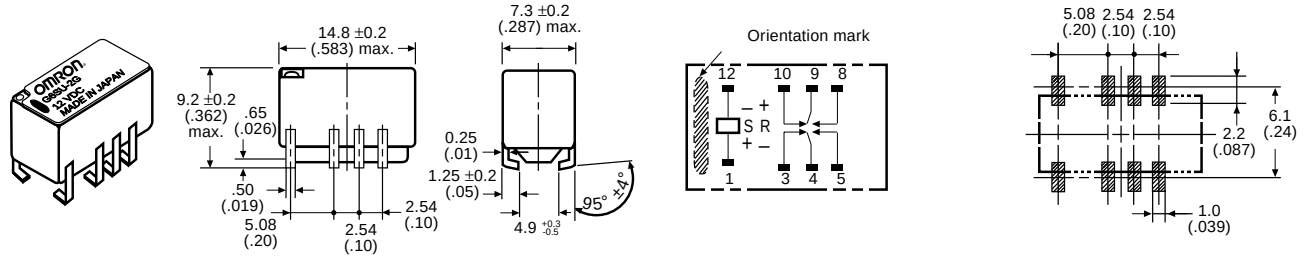
Mounting pads (Top view)



G6SU-2G

Terminal arrangement/ Internal connections (Top view)

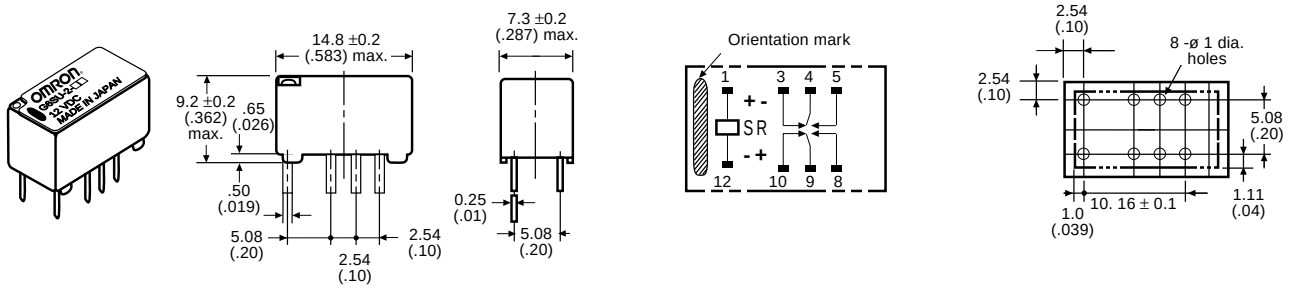
Mounting pads (Top view)



G6SU-2

Terminal arrangement/ Internal connections (Bottom view)

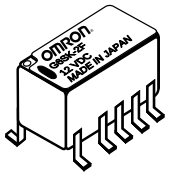
Mounting holes (Bottom view)

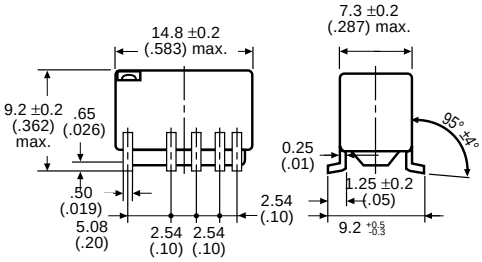


Unit: mm (inch)

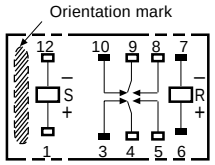
■ DUAL COIL LATCHING

G6SK-2F,
G6SK-2F-H

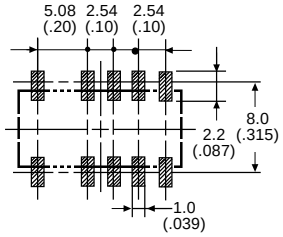




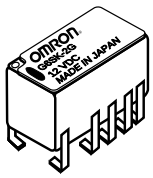
Terminal arrangement/
Internal connections
(Top view)

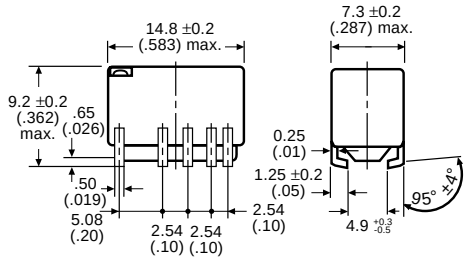


Mounting pads
(Top view)

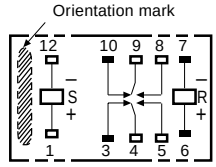


G6SK-2G,
G6SK-2G-H

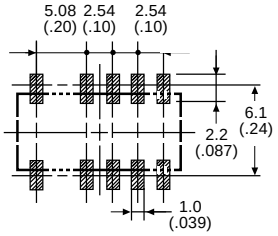




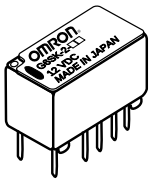
Terminal arrangement/
Internal connections
(Top view)

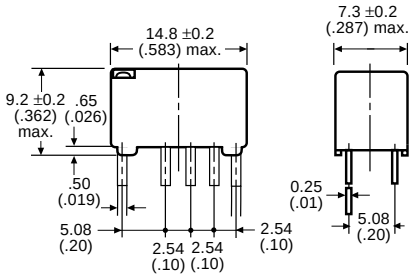


Mounting pads
(Top view)

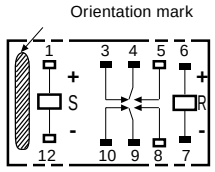


G6SK-2,
G6SK-2-H

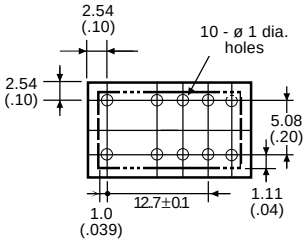




Terminal arrangement/
Internal connections
(Bottom view)



Mounting holes
(Bottom view)



Note: 1. Coplanarity is 0.1 mm max.

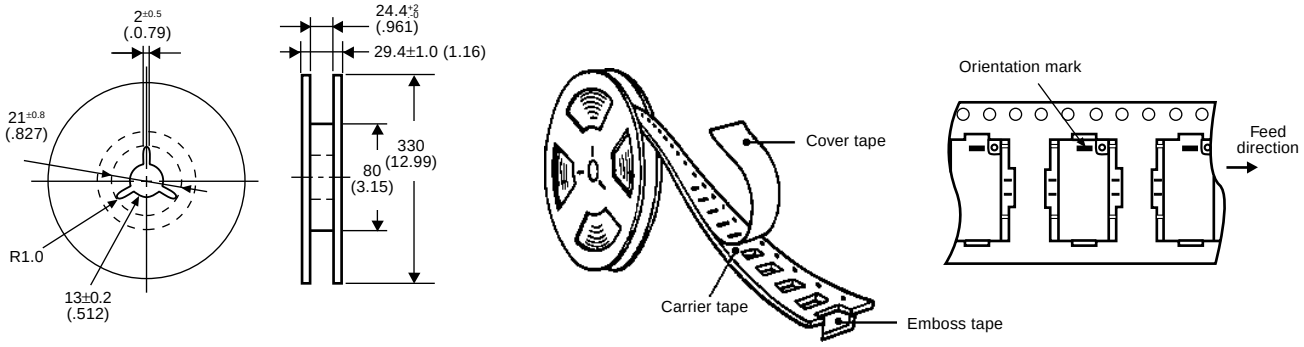
2. ▨ and [ ] indicate mounting orientation marks.

■ ACCESSORIES

Tube packing	Standard nomenclature	50 pcs per anti-static tube
Tape packing	When ordering, add “TR” before the rated coil voltage (e.i., G6S-2F-*TR*-DC12) Note: TR is not part of the relay model number and will not be marked on the relay	

■ DIMENSIONS

Relays per reel: 400
Reels per packing carton: 2 (800 relays)



■ APPROVALS

UL (File No. E41515)/ CSA (File No. LR24825)

Type	Contact Form	Coil Rating	Contact Ratings
G6S-2F	DPDT	1.5 to 48 VDC	0.5 A, 125 VAC
G6S-2F-Y			0.3 A, 110 VDC
G6S-2G			2.0 A, 30 VDC
G6S-2G-Y			
G6S-2			
G6S-2-Y			
G6SU-2F			
G6SU-2G			
G6SU-2			
G6SK-2F			
G6SK-2G			
G6SK-2			
G6SK-2F-H			
G6SK-2G-H			
G6SK-2-H			

Note: 1. The rated values approved by each of the safety standards (e.g., UL and CSA) may be different from the performance characteristics individually defined in this catalog.

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