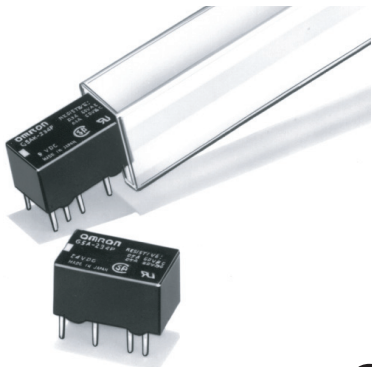


Low Signal Relay  
**G5A**

- Subminiature 8.40 H x 9.90 W x 16 L mm
- Unique moving-loop armature reduces relay size, magnetic interference, and contact bounce time.
- Low nominal power consumption.
- Bifurcated crossbar contact assures reliable switching of loads as low as 10 mVDC, 0.1 mA (reference value).
- Available in standard and ultrasonic cleaning versions.
- Highly stable magnetic circuit for latching endurance and excellent resistance to vibration and shock.
- Single or double coil winding types available.



**Ordering Information**

To Order: Select the part number and add the desired coil voltage rating (e.g., G5AU-234P-DC12).

■ **Non-Latching**

Type	Contact form	Construction	Model
Standard	DPDT	Sealed	G5A-234P

■ **Latching**

Type	Contact form	Construction	Model	
			Single-winding latching	Double-winding latching
Standard	DPDT	Sealed	G5AU-234P	G5AK-234P

**Model Number Legend**

G5A   -         -   DC    
1     2     3     4     5     6     7

**1. Relay Function**

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

**2. Contact Form**

- 2: DPDT

**3. Contact Type**

- 3: Bifurcated crossbar Ag (Au-Alloy)

**4. Enclosure Ratings**

- 4: Fully sealed

**5. Terminals**

- P: Straight PCB  
C: Self-clinching PCB

**6. Special Function**

- None: General-purpose  
FC: FCC part 68 compliance  
U: For ultrasonically cleanable

**7. Rated Coil Voltage**

- 3, 5, 6, 9, 12, 24, 48 VDC

# Specifications

## ■ Contact Data

Load	Resistive load (p.f. = 1)	Inductive load (p.f. = 0.4) (L/R = 7 ms)
Rated load	0.50 A at 30 VAC, 1 A at 30 VDC	0.10 A at 30 VAC, 0.20 A at 30 VDC
Contact material	Ag (Au clad)	
Carry current	1 A	
Max. operating voltage	125 VAC, 125 VDC	
Max. operating current	1 A (AC) 1 A (DC)	0.50 A (AC) 0.50 A (DC)
Max. switching capacity	37.50 VA, 33 W	12.50 VA 11 W
Min. permissible load (See note)	10 $\mu$ A, 10 mVDC	

**Note:** P level:  $\lambda_{60} = 0.1 \times 10^{-6}$ /operation

This value was measured at a switching frequency of 120 operations/min and the criterion of contact resistance is 100  $\Omega$ . This value may vary depending on the switching frequency and operating environment. Always double-check relay suitability under actual operating conditions.

## ■ Coil Data

### Standard Non-latching (G5A-234P)

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Coil inductance (ref. value) (H)		Pick-up voltage	Dropout voltage	Maximum voltage	Power consumption (mW)
			Armature OFF	Armature ON				
3	66.7	45	0.048	0.043	70% max	10% min.	200%	Approx. 200
5	40	125	0.13	0.12				
6	33.30	180	0.17	0.16				
9	22.20	405	0.43	0.40				
12	16.70	720	0.71	0.68				
24	8.30	2,880	2.76	2.70				
48	5.80	8,230	7.44	7.25			170%	Approx. 280

### Latching (G5AU-234P, G5AK-234P)

Rated voltage (VDC)	Rated current (mA)	Coil resistance (Ω)	Coil inductance (ref. value) (H)		Set pick-up voltage	Reset dropout voltage	Maximum voltage	Power consumption (mW)
			Armature OFF	Armature ON				
3	66.70	45	0.02	0.02	80% max.	80% min.	200%	Approx. 200
5	40	125	0.06	0.05				
6	33.30	180	0.08	0.07				
9	22.20	405	0.17	0.14				
12	16.70	720	0.29	0.24				
24	8.30	2,880	1.10	0.85				

**Note:** 1. The rated current and coil resistance are measured at a coil temperature of 23°C (73°F) with a tolerance of  $\pm 10\%$ .

2. The operating characteristics are measured at a coil temperature of 23°C (73°F).

3. The maximum voltage is the highest voltage that can be imposed on the relay coil

## ■ Characteristics

Type		Non-latching	Latching
Contact resistance (See note 2)		50 mΩ max.	
Operate (set) time		5 ms. max. (mean value approx 2.4 ms)	5 ms. max. (mean value approx. 2.0 ms)
Release (reset) time		5 ms. max. (mean value approx. 1.1 ms)	5 ms. max. (mean value approx. 1.8 ms)
Operating frequency (max.)	Mechanical	36,000 operations/hour	
	Electrical	18,000 operations/hour (under rated load)	
Insulation resistance (See note 3)		1,000 mΩ min. (at 250 VDC)	
Dielectric strength	Standard	1,000 VAC, 50/60 Hz for 1 minute between coil and contacts (See note 4)	
		1,000 VAC, 50/60 Hz for 1 minute between contacts of different poles (See note 4)	
		500 VAC, 50/60 Hz for 1 minute between contacts of same pole (See note 5)	
	Set and reset coils	--	100 VAC, 50/60 Hz for 1 minute
Impulse Withstand Voltage (See notes 4 & 5)		1,500 V (10 x 160 μs) between contacts of the same polarity (conforms to FCC Part 68)	
Vibration	Mechanical durability	10 to 55 Hz; 1.50 mm (0.06 in) double amplitude	
	Malfunction durability	10 to 55 Hz; 1.50 mm (0.06 in) double amplitude	
Shock	Mechanical durability	1,000 m/s <sup>2</sup> (approx. 100 G)	
	Malfunction durability	300 m/s <sup>2</sup> (approx. 30 G)	
Ambient temperature		-40 to 70°C (-40 to 158°F) with no icing	
Humidity		5% to 85% RH	
Service life	Mechanical	50 million operations min. at 36,000 operations/hour	50 million operations min. at 36,000 operations/hour
	Electrical	100,000 operations min. (at 1,800 operations/hr) See “Characteristic Data”	
Weight		Approx. 3 g (0.11 oz)	

Note: 1. Data shown are of initial value.

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

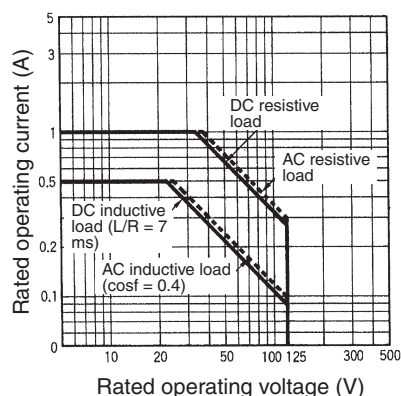
3. The insulation resistance was measured with a 250-VDC megohmmeter applied to the same parts as those used for checking the dielectric strength (except between the set and reset coil).

4. Models with FC suffix: 1,200 VAC, 50/60 Hz for 1 min, impulse withstand voltage of 1,500 V (10 x 160 μs)

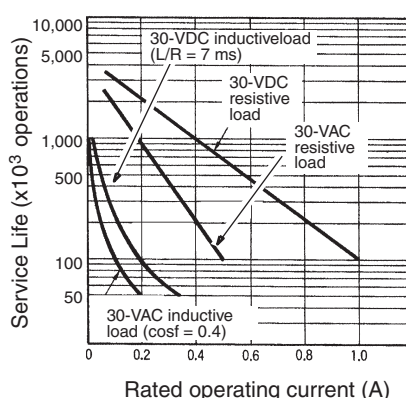
5. Models with FC suffix: 750 VAC, 50/60 Hz for 1 min, impulse withstand voltage of 1,500 V (10 x 160 μs)

## ■ Characteristic Data

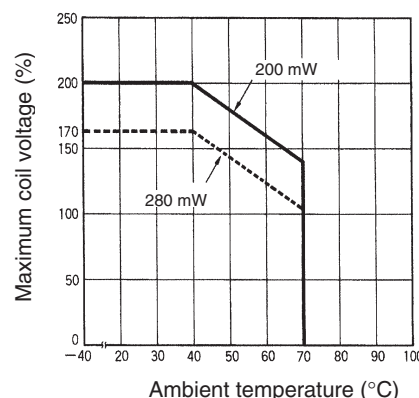
Maximum Switching Capacity



Electrical Service Life



Ambient Temperature vs. Maximum Coil Voltage

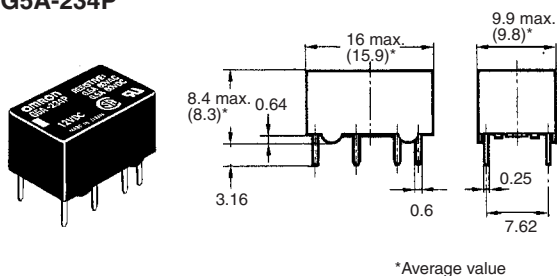


Note: The maximum coil voltage refers to the maximum value in a varying range of operating power voltage, not a continuous voltage.

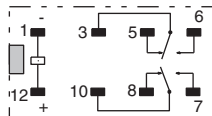
# Dimensions

**Note:** 1. All units are in millimeters unless otherwise inciated. To convert millimeters into inches, multiply by 0.03937.  
2. Orientation marks are indicated as follows:  

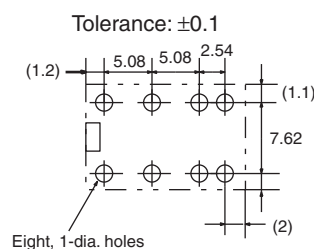
## G5A-234P



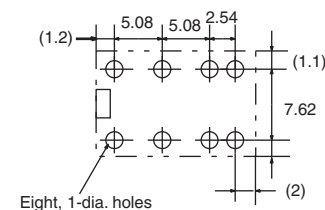
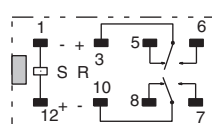
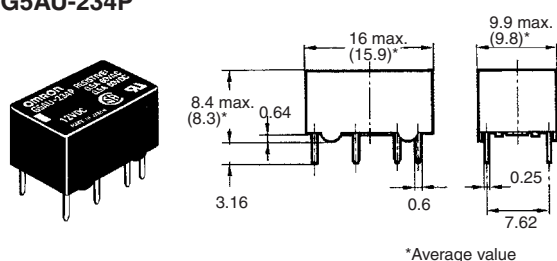
### Terminal Arrangement/ Internal Connections (Bottom View)



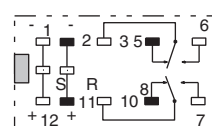
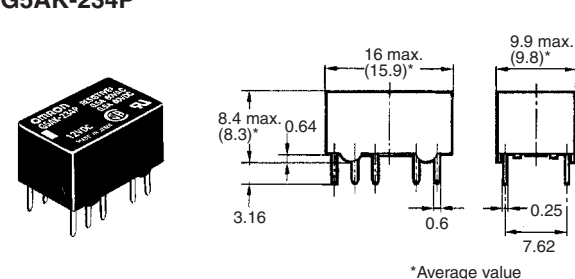
### Mounting Holes (Bottom View)



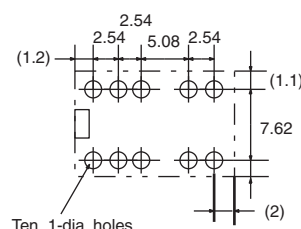
## G5AU-234P



## G5AK-234P



S: Set coil  
R: Reset coil



## Approvals

UL Recognized (File No. E41515)/CSA Certified (File No. LR24825) - - Ambient Temp. = 40°C

Type	Contact form	Coil ratings	Contact ratings
G5A-234P	DPDT	3 to 48 VDC	0.5 A, 60 VAC
G5AU-234P		3 to 24 VDC	0.5 A, 60 VDC
G5AK-234P			1 A, 30 VDC

**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.  
2. In the interest of product improvement, specifications are subject to change.