G2RL
PCB Power Relay

Low Profile Power Relay with 15.7 mm height, ideal for incorporation in miniature equipments

- A wide variety of single pole, double pole, high-capacity (16 A) type and high-sensitivity type (250 mW) Relays are available.
- Low profile; 15.7 mm max. in height.
- Conforms to VDE (EN61810-1), UL508 and CSA22.2.
- IEC/EN 60335-1 conformed. (-HA Model)
- Satisfies ambient operating temperature requirement of 85°C and 105°C (-CV Model).
- Clearance and creepage distance: 8 mm / 8 mm min.
- Coil insulation system: Class F (UL1446).
- G2RL-1A-E-ASI: TV3 Rating models available.

RoHS Compliant

■Model Number Legend

G2RL-□□□-□-□-□-□
(1 2 3 4 5 6 7)

1. Number of poles
1 : 1 pole
2 : 2 pole

2. Contact Form
None : SPDT (1c)
A : SPST-NO (1a)

3. Enclosure rating
None : Flux protection
4 : Sealed

4. Classification
None : Standard
E : High-capacity
H : High-sensitivity

5. Special Requirement
None : Standard
CV : 16 A, pinning 5 mm,: switching at 105 C

6. Market Code
None : General purpose
HA : Home Appliance according to IEC/EN60335-1

7. Contact material
None : Standard (Ag-alloy, Cd free)
ASI : AgSnIn

■Application Examples

- Home appliances
- OA equipments
- Industrial machinery

■Ordering Information

Terminal Shape	Market Code	Classification	Contact form	Enclosure rating	Model	Rated coil voltage	Minimum packing unit
PCB terminals	General purpose	Standard	SPST-NO (1a)	Flux protection	G2RL-1A	5 VDC 12 VDC 24 VDC 48 VDC	20 pcs/tube
				Sealed	G2RL-1A4		
			SPDT (1c)	Flux protection	G2RL-1		
				Sealed	G2RL-14		
			DPST-NO (2a)	Flux protection	G2RL-2A		
				Sealed	G2RL-2A4		
			DPDT (2c)	Flux protection	G2RL-2		
				Sealed	G2RL-24		
		High-capacity	SPST-NO (1a)	Flux protection	G2RL-1A-E		
					G2RL-1A-E-ASI		
				Sealed	G2RL-1A4-E		
			SPDT (1c)	Flux protection	G2RL-1-E		
				Sealed	G2RL-14-E		
		High-sensitivity	SPST-NO (1a)	Flux protection	G2RL-1A-E-CV	12 VDC 24 VDC	
					G2RL-1A-H		
			SPDT (1c)		G2RL-1-H		
	Home Appliance	Standard	DPST-NO (2a)		G2RL-2A-HA		
			DPDT (2c)		G2RL-2-HA		
		High-capacity	SPST-NO (1a)		G2RL-1A-E-HA		
			SPDT (1c)		G2RL-1-E-HA		

Note 1. When ordering, add the rated coil voltage to the model number.
Example: G2RL-1A DC5
(DC5: Rated coil voltage)
However, the notation of the coil voltage on the product case will be marked as □□VDC.
Note 2. Place your order in tube (20 pcs/tube) units.
Note 3. Contact your OMRON sales representative for sealed models.

■Ratings

●Coil

Item / Rated voltage	Rated current (mA)	Coil resistance (Ω)	Must operate voltage (V)	Must release voltage (V)	Max. voltage (V)	Power consumption (mW)
			% of rated voltage			
Standard: 5 VDC	80.0	62.5	70% max.	10% min.	130% (at 85°C)	Approx. 400
Standard: 12 VDC	33.3	360				
Standard: 24 VDC	16.7	1,440				
Standard: 48 VDC	8.96	5,358				Approx. 430
High-sensitivity: 12 VDC	20.8	576	75% max.			Approx. 250
High-sensitivity: 24 VDC	10.42	2,304				

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 “Max. voltage” is the maximum voltage that can be applied to the relay coil.

●Contacts

Classification / Item / Model	Standard type (resistive load)				High-capacity type (resistive load)		High-sensitivity type (resistive load)	
	G2RL-1A	G2RL-1	G2RL-2A	G2RL-2	G2RL-1A-E (-CV, -ASI)	G2RL-1-E	G2RL-1A-H	G2RL-1-H
Contact type	Single							
Contact material	Ag-alloy (Cd free)							
Rated load	12 A at 250 VAC 12 A at 24 VDC (See note)		8 A at 250 VAC 8 A at 30 VDC (See note)		16 A at 250 VAC 16 A at 24 VDC (See note)		10 A at 250 VAC (See note)	
Rated carry current	12 A (See note)		8 A (70°C)/5 A (85°C) (See note)		16 A (See note)		10 A (See note)	
Max. switching voltage	440 VAC, 300 VDC							
Max. switching current	12 A		8 A		16 A		10 A	
Failure rate (P level) (reference value*)	40 mA at 24 VDC							

* This value was measured at a switching frequency of 120 operations/min.
Note: Contact your OMRON representative for the ratings on sealed models.

■Characteristics

Classification / Item / Number of poles		Standard type		High-capacity type	High-sensitivity type
		1-pole	2-pole	1-pole	
Contact resistance *1		100 mΩ max.			
Operate (set) time		15 ms max.			
Release (reset) time		5 ms max.			
Insulation resistance *2		1,000 MΩ min.			
Dielectric strength	Between coil and contacts	5,000 VAC, 50/60 Hz for 1min			
	Between contacts of the same polarity	1,000 VAC, 50/60 Hz for 1min			
	Between contacts of different polarity	–	2,500 VAC, 50/60 Hz for 1min	–	
Impulse withstand voltage		10 kV (1.2 x 50 μs)			
Vibration resistance	Destruction	10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)			
	Malfunction	10 to 55 to 10 Hz, 0.75 mm single amplitude (1.5 mm double amplitude)			
Shock resistance	Destruction	1,000 m/s²			
	Malfunction	Energized: 100 m/s², De-energized: 100 m/s²			
Durability	Mechanical	20,000,000 operations (at 18,000 operations/hr)			
	Electrical *3 (resistive load)	G2RL-1(A): 50,000 operations at 250 VAC, 12 A 30,000 operations at 24 VDC, 12 A	G2RL-2(A): 30,000 operations at 250 VAC, 8 A 30,000 operations at 30 VDC, 8 A	G2RL-1(A)-E, G2RL-1A-E-ASI: 30,000 operations at 250 VAC, 16 A 30,000 operations at 24 VDC, 16 A G2RL-1A-E-CV: 50,000 operations at 250 VAC, 16 A at 105 C	G2RL-1(A)-H: 50,000 operations at 250 VAC, 10 A
Ambient operating temperature	-40°C to 85°C (with no icing or condensation) -40°C to 105°C (with no icing or condensation) by G2RL-1A-E-CV				
Ambient operating humidity	5% to 85% (with no icing or condensation)				
Weight	Approx. 12 g				

Note. Values in the above table are the initial values at 23 C.
*1. Measurement conditions: 5 VDC, 1 A, voltage drop method
*2. Measurement conditions: Measured at the same points as the dielectric strength using a 500 VDC ohmmeter.
*3. 1,800 operations per hour.