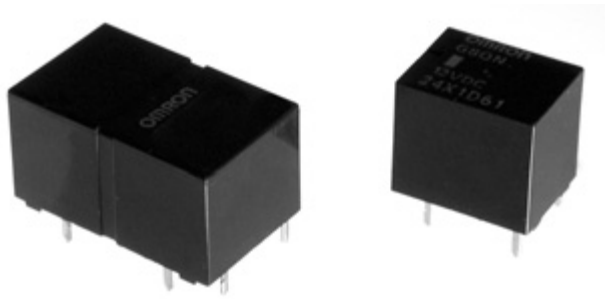
Miniature Automotive PCB Relay
G8QN/G8QW

- SPDT contact form (1C).
- Fully sealed construction.
- Fully automated assembly.
- G8QN suitable for reverse motor applications (2 relays).
- High performance PCB relay.
- Made in USA.



Ordering Information

Description	Model
Standard	**G8QN-1C4-12V**
Standard	**G8QW-2C4-12V**
High temperature (105°C)	**G8QN-1C4-05-12V**
High temperature (105°C)	**G8QW-2C4-05-12V**

■ Typical Applications

- Power windows/power door lock
- Smart junction box and module applications
- Seat adjustment
- Sunroof
- Horn
- Fog lamp
- Heated exterior side mirrors
- Wiper motor
- Washer pump

Specifications

■ Contact Data

Max. switching current	30 A
Max switching voltage	16 V
Max. carry current	30 A (at 20°C for 1 hour)
Min. carry current	100 mA
Contact material	Silver-tin oxide

■ Coil Ratings (at 20°C)

Type	Rated voltage	Coil resistance (±10%)	Nominal power consumption	Pull in voltage	Dropout voltage
G8QN-1C4-12V	12 VDC	210 Ω	685 mW	< 6.6 V	> 0.6 V
G8QW-2C4-12V					
G8QN-1C4-05-12V					
G8QW-2C4-05-12V					

Characteristics

		G8QN	G8QW
Max. initial contact voltage drop/resistance		250 mV @ 10 A/25 mΩ @ 1 A	
Operate time		10 ms max. (3.5 ms typical) @ 12 VDC	
Release time		5 ms max. (1.5 ms typical) (see Note)	
Bounce time	**Operate**	5 ms max. (0.5 ms typical)	
	Release	5 ms max. (1.0 ms typical)	
Switching frequency	**Mechanical**	18,000 operations per hour	
Insulation resistance		100 MΩ min. at 500 VDC	
Dielectric strength		1.0 mA max leakage at 440 VAC/60 Hz for 1 minute between coil & contacts and between NO & NC contacts	
Vibration	**Mechanical durability**	10-500 Hz, 5 G, 1.5 mm total amplitude	
	Malfunction durability	10-500 Hz, 5 G, 1.5 mm total amplitude	
Shock	**Mechanical durability**	100 G half sine 6 ms duration (980 m/s^2)	
	Malfunction durability	100 G half sine 6 ms duration (980 m/s^2)	
Operating ambient temperature range		-40°C to 85°C (105°C for high temp type)	
Humidity		35% to 85% RH	
Service life	**Mechanical**	1,000,000 operations min.	
	Electrical	100,000 operations min. (load dependant)	
Mass		5.9 g (approx.)	11 g (approx.)

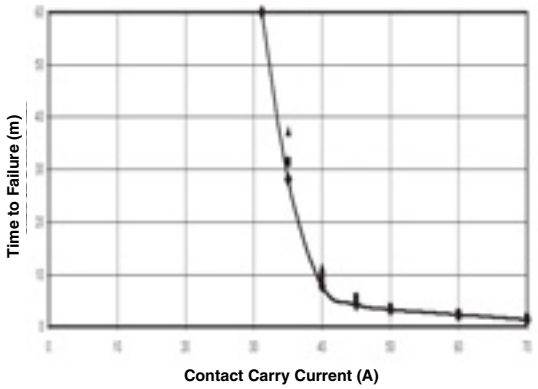
Note: External coil suppression will cause a measurable increase in release times and may cause the relay's characteristic to fall out of the specifications given here.

Characteristics Reference Data

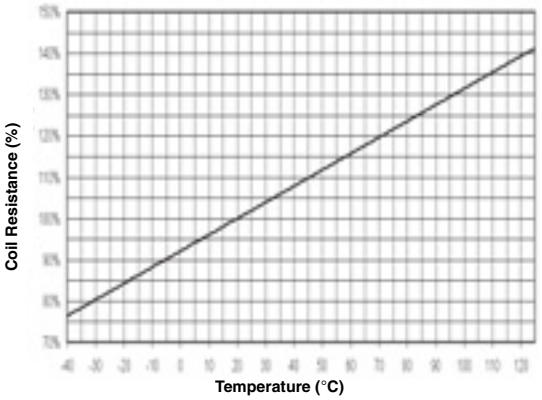
■ Durability Test Data

Relay	Load type	Current	Cycles tested
G8QN & G8QW	Door lock motor	18 - 20 A inrush	200,000
	Power window motor (locked)	34 A	200,000
	Power window motor (locked)	23 A	200,000
	Sun roof motor (free)	27 A inrush 3 A steady state -19 A breaking current	100,000
	Horn load	14 A	200,000

Current Withstand (20°C)



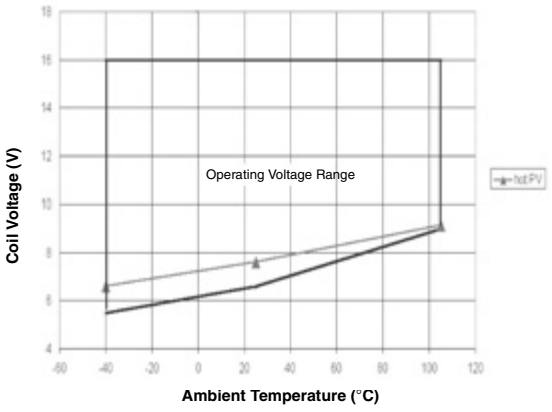
Normalized Coil Resistance vs. Temperature (20°C reference)



Example: Resistance of 210Ω coil
= 75% of 210Ω at -40°C, or 158Ω
= 100% of 210Ω at 20°C, or 210Ω
= 125% of 210Ω at 85°C, or 263Ω

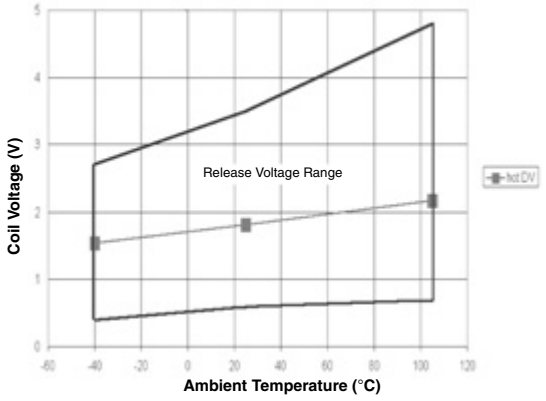
Operating Voltage Range

with “hot” PV shown
(210Ω coil - High Temperature Type)



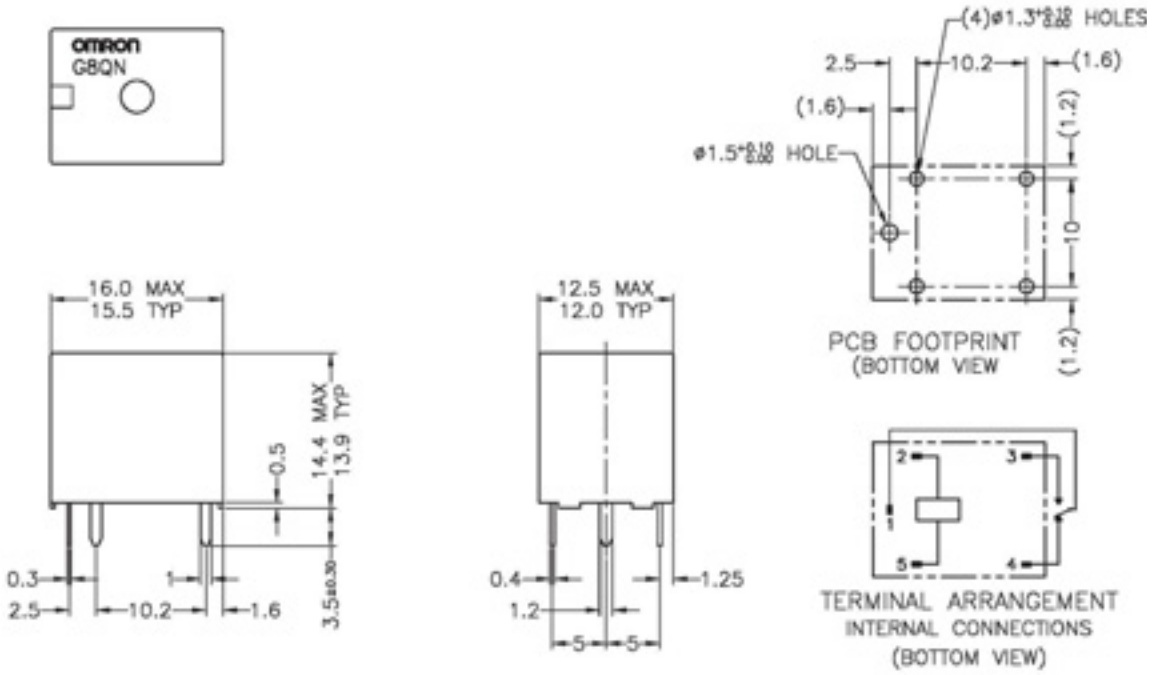
Release Voltage Range

with “hot” DV shown
(210Ω coil - High Temperature Type)

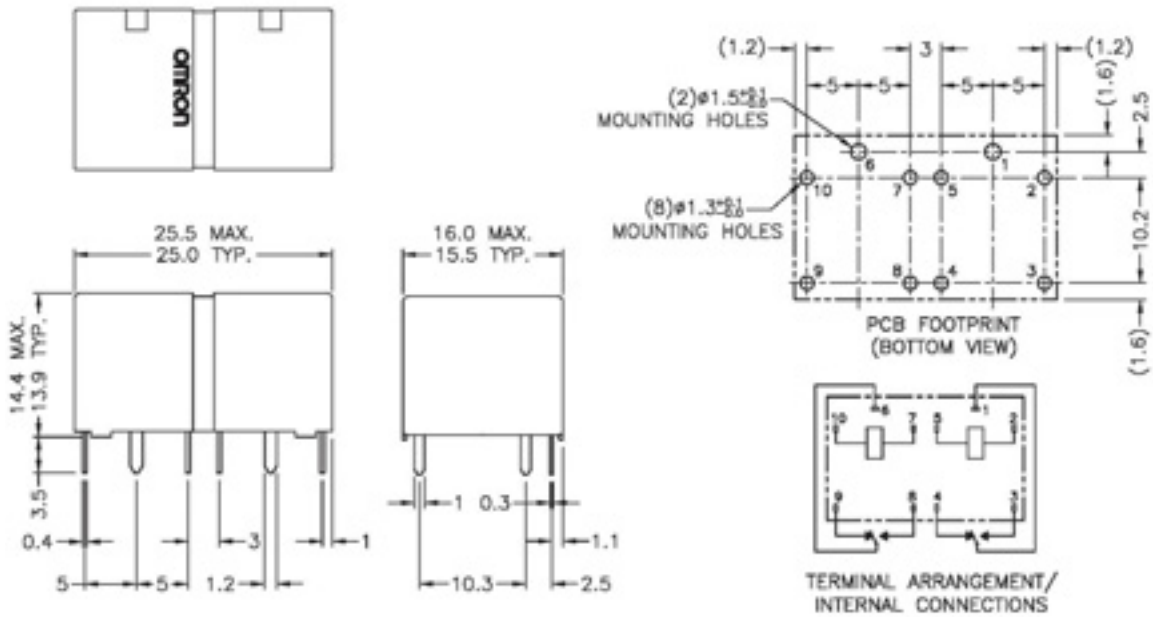


Dimensions

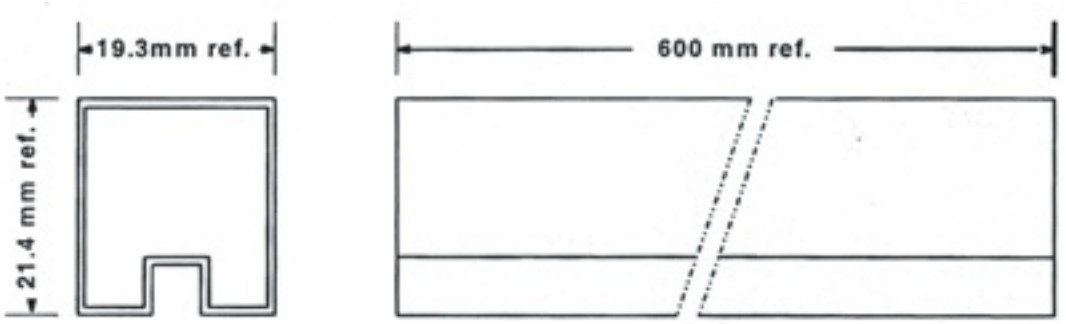
■ G8QN



■ G8QW



■ Tube Packaging



G8QN: 47 relays per tube, 36 tubes per box (1692 relays per box).

G8QW: 22 dual relays per tube, 36 tubes per box (792 relays per box).

Note: 1. For additional information, please contact Omron.

2. Prior to receipt of order, specifications subject to change without notice.

3. This specification sheet is intended to be a guideline for application of this product. The information contained is believed to be correct. However, it is impossible for Omron to evaluate every possible use. It is the user's responsibility to determine product suitability in any application.

4. Omron can meet some special performance characteristics upon request.

5. All data at 20°C unless otherwise noted.

6. If several relays are to be mounted on a single PCB, they must be given at least 3 mm clearance on all sides.