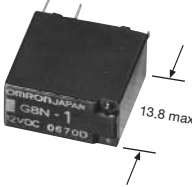
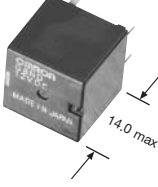
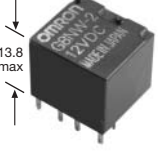

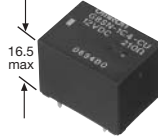
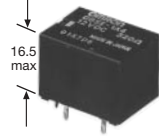

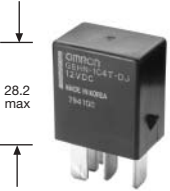
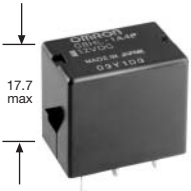




Classification		Ultra-Miniature PCB Relay									
Model	G8N1	G8ND2	G8NW								
Features	Fully sealed construction Fully automated assembly 25A motor lock load		Twin automotive relay suitable for polarity reversal control								
Appearance											
Dimensions (LxW)	14.3 x 7.5 max	14.5 x 14.1 max	15.7 x 14.3 max								
Contact Ratings	Contact Form	SPDT	Dual Contact	SPDT x 2							
	Contact Type	Single	Single	Twin Contact							
	Max switching current (motor lock condition)	30 A	30 A	30 A							
	Max switching current (under resistive load)	–	–	–							
Coil ratings	Rated Voltage	12VDC	12VDC	12VDC							
	Endurance	<table border="1"> <tr> <td>Electrical (under rated load)</td> <td colspan="3">100,000 operations</td> </tr> <tr> <td>Mechanical</td> <td colspan="3">1,000,000 operations</td> </tr> </table>			Electrical (under rated load)	100,000 operations			Mechanical	1,000,000 operations	
Electrical (under rated load)	100,000 operations										
Mechanical	1,000,000 operations										
Ambient temperature (operating)	-40°C to 85°C			-40°C to 85°C							
Variations	<ul style="list-style-type: none"> • High sensitivity • High temperature 	<ul style="list-style-type: none"> • Suppression resistor • Suppression diode • Mounting bracket with resistor • Weatherproof with Resistor 	<ul style="list-style-type: none"> • High sensitivity • High temperature 								
Magazine Packaging	80	40	36								
Weight	4.1g	7.5g	8.0g								
Page	290	295	300								

Classification		Sub-miniature Automotive PCB Relay		
Model	G8QN	G8SN	G8SE	
Features	Fully sealed construction Fully automated assembly		High capacity, high heat resistance relay	
Appearance				
Dimensions (LxW)	16 x 12.5 max	22.5 x 16.5 max	22.5 x 16.5 max	
Contact Ratings	Contact Form	SPDT	SPDT	SPST
	Contact Type	Single	Single	Single
	Max Switching Current (A) (under resistive load)	5A	10A	20A
Coil ratings	Rated Voltage	12VDC	12VDC	12VDC
Endurance	Electrical (under rated load)	100,000 operations (14V; continuous carry current)		
	Mechanical	10,000,000 operations (at frequency of 18,000 operations/hour)		
Ambient temperature (operating)		-40°C to 85°C		-40°C to 110°C
Variations	-	-	-	
Magazine Packaging	100	100	25	
Weight	5.5 g	13 g	16	
Page	305	307	309	

Classification		High Current Automotive PCB Relay			
Model		G8PE			
Features		40A, fully sealed, PCB power relay			
Appearance					
Dimensions (WxLxH)		21 x 22.6 x 21.2			
Contact Ratings	Contact Form	SPST/SPDT			
	Contact Type	Silver Tin Alloy			
	Max switching current (motor lock condition)	40A			
	Max switching current (under resistive load)	–			
Coil ratings	Rated Voltage	12VDC			
	Endurance	<table border="1"> <tr> <td>Electrical (under rated load)</td> <td>100K</td> </tr> <tr> <td>Mechanical</td> <td>1,000,000 operations</td> </tr> </table>	Electrical (under rated load)	100K	Mechanical
Electrical (under rated load)	100K				
Mechanical	1,000,000 operations				
Ambient temperature (operating)		-40°C to 85°C			
Variations		Normally open and normally closed			
Magazine Packaging		100			
Weight		20g			
Page		311			

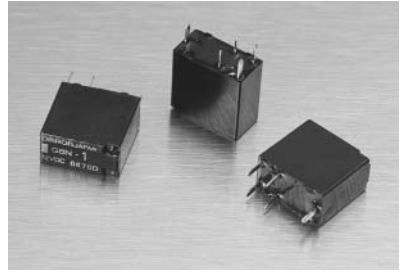
Classification		Micro ISO Automotive PCB relay	
Model		G8HN-J	G8HL
Features		Sealed and unsealed 20 A / 35 A relay Handles heavy loads Micro ISO	Low height micro ISO 20 A relay
Appearance			
Dimensions (LxW)		23 x 15.5 max	22.5 x 15
Contact Ratings	Contact Form	SPST / SPDT	SPST
	Contact Type	Single	Single
	Max switching current (motor lock condition)	–	–
	Max switching current (under resistive load)	20 A (35 A version available)	20 A
Coil ratings	Rated Voltage	12 & 24 VDC	12 VDC
Endurance	Electrical (under rated load)	100,000 operations	
	Mechanical	1,000,000 operations	
Ambient temperature (operating)		-40°C to 125°C	-40°C to 100°C
Variations		<ul style="list-style-type: none"> Sealed & unsealed 	<ul style="list-style-type: none"> PCB terminals Solder terminals
Magazine Packaging		100	20
Weight		20g	13g
Page		314	320

Selection Guide – Automotive Relays

Classification		General Purpose	Special Purpose
Model		G8JN	G8JR
Features		Standard ISO terminal footprint Handles heavy load High current path Fully welded	Standard ISO terminal footprint. High power (70A)
Appearance			
Dimensions (LxW)		25 x 25 max	25 x 25 max
Contact Ratings	Contact Form	SPDT	SPST
	Contact Type	Single	Single
	Max switching current (motor lock condition)	–	–
	Max switching current (under resistive load)	35A	70A
Coil ratings	Rated Voltage	12VDC	12VDC
Endurance	Electrical (under rated load)	100,000 operations	
	Mechanical	1,000,000 operations	
Ambient temperature (operating)		-40°C to 125°C-	-40°C to 135°C
Variations		<ul style="list-style-type: none"> • Suppression resistor • Suppression diode • Mounting bracket with resistor • Weatherproof with resistor 	<ul style="list-style-type: none"> • Suppression resistor • Mounting bracket with resistor
Magazine Packaging		48	48
Weight		40g	40g
Page		325	327

Features

- Compact size
- High performance PCB relay
- 25A motor lock load
- Fully sealed construction
- Fully automated assembly
- SPDT contracts
- Pre-solder as for all terminal
- PWB pattern design is easy
- ISO9001/QS9000 series approval



Available Types

	Type
G8N-1 12VDC	Standard
G8N-1S 12VDC	High Sensitivity
G8N-1L 12VDC	High Temperature (105°C)
G8N-1H 12VDC	High Temperature/High Sensitivity

Contact Data

Max Switching Current	30A
Rated Current	25A Motor load
Max Switching Voltage	16V
Contact Material	Silver tin alloy (Cadmium Free)

Coil Ratings

Type	Coil Resistance	Pull in Voltage
G8N-1 12VDC	225Ω	<7.2
G8N-1S 12VDC	180Ω	<6.5
G8N-1L 12VDC	225Ω	<7.2
G8N-1H 12VDC	180Ω	<6.5

Specifications

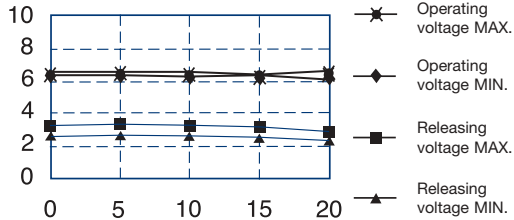
Temperature Range	-40 to +85°C (-1L, -1H: -40 to +105°C)
Mechanical Life	1,000,000 Operations
Electrical Life	100,000 Operations
Weight	4.1g

Application Examples

- Power windows
- Power door lock
- Seat adjustment
- Sunroof
- Wiper controls

LIFE TEST I (Power window motor: G8N-1 12VDC)

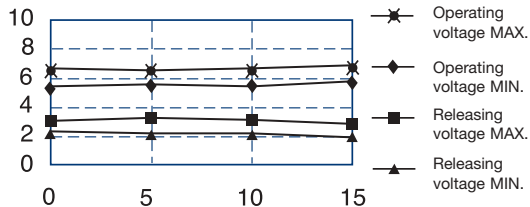
- Test item
 - 14VDC-26A
 - Motor Lock 200,000
 - Operations minimum
- Shift of pick-up drop-out voltage



Characteristics		Specification		Before the Test	After the Test
Contact Resistance	N.O. Contact	100(mΩ) or lower	MAX	4.1	7.2
			MIN	2.8	3.5
			AVE	3.36	5.00
	N.C. Contact	100(mΩ) or lower	MAX	5.6	11.8
			MIN	3.9	5.0
			AVE	4.44	8.00
Insulation Resistance		100(mΩ) or higher		1000 or higher	1000 or higher
Structure		No abnormal condition		Good	Good

LIFE TEST II (Door lock motor: G8N-1 12VDC)

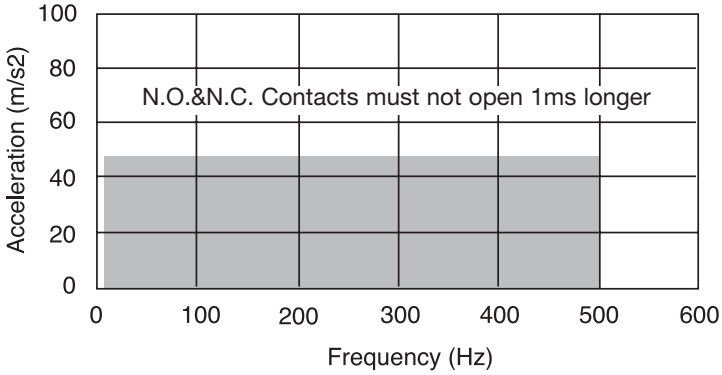
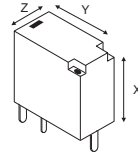
- Test item
 - 16VDC-22A
 - 200,000
 - Operations minimum
- Shift of pick-up drop-out voltage



Characteristics		Specification		Before the Test	After the Test
Contact Resistance	N.O. Contact	100(mΩ) or lower	MAX	4.7	6.8
			MIN	3.2	3.5
			AVE	3.89	4.50
	N.C. Contact	100(mΩ) or lower	MAX	5.3	7.2
			MIN	3.7	4.0
			AVE	4.46	6.20
Insulation Resistance		100(mΩ) or higher		1000 or higher	1000 or higher
Structure		No abnormal condition		Good	Good

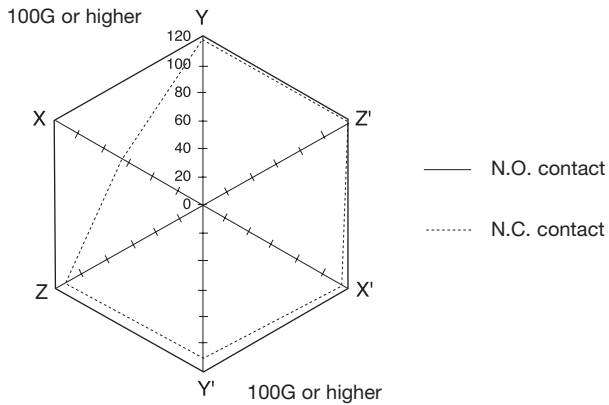
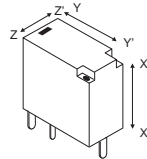
VIBRATION RESISTANCE CHARACTERISTICS

- Test condition
 Frequency: 10Hz-500Hz-10Hz
 Acceleration: 43.1m/s²
 Direction of vibration: see right diagram
 Detection level: Contacts must not open 1ms or longer



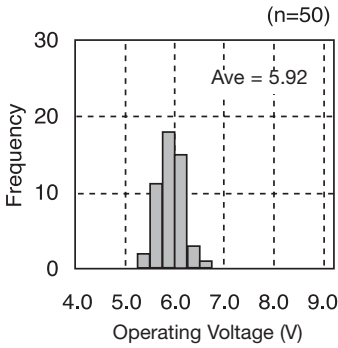
SHOCK RESISTANCE CHARACTERISTICS

- Test condition
 Shock application time: 11ms, half-sine wave
 Shock direction: see right diagram
 Detection level: Contacts must not open 1ms or longer

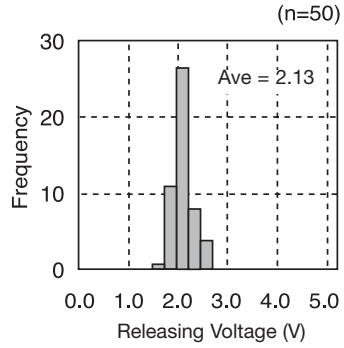


REFERENCE DATA (G8N-1 12VDC)

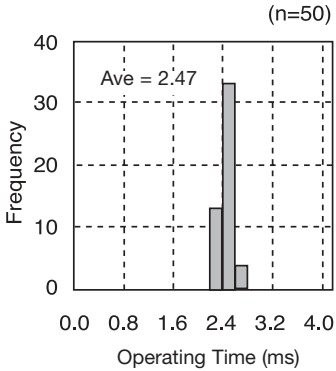
Distribution of operating voltage



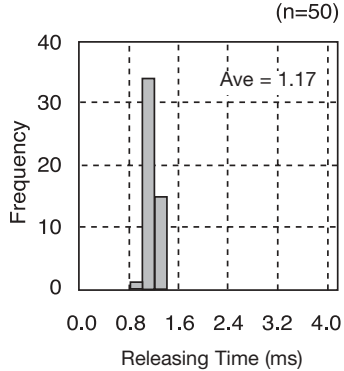
Distribution of releasing voltage



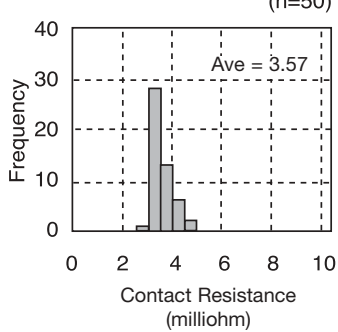
Distribution of operating time



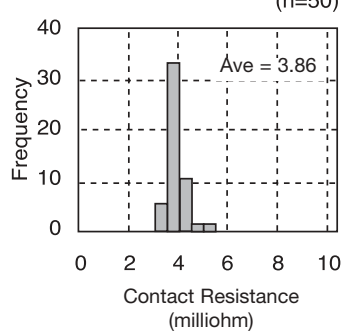
Distribution of releasing time



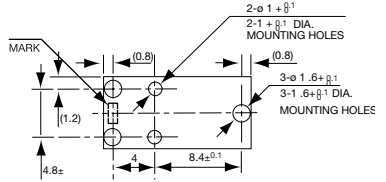
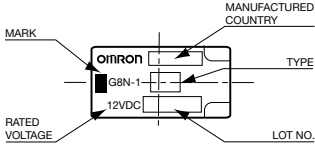
N.O. contact – Distribution of contact resistance



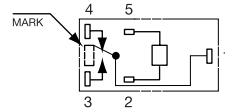
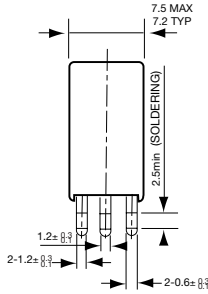
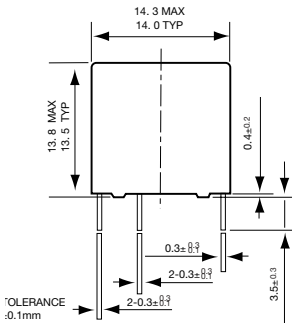
N.O. contact – Distribution of contact resistance



Dimensions



MOUNTING HOLES (BOTTOM VIEW)

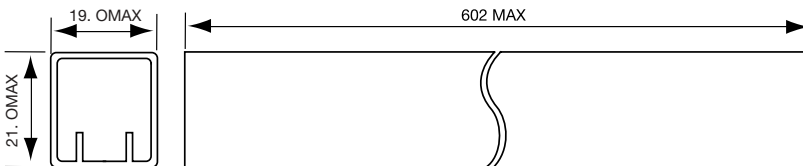


TERMINAL ARRANGEMENT/
INTERNAL CONNECTIONS
(BOTTOM VIEW)

• Omron PCB relays may be mounted in any convient location that is dry and not exposed to excessive dust, SO₂, H₂S or organic gases.

• Omron PCB relays may be oriented in any desired direction. Whenever possible, however, care should be taken that they are not subjected to vibration along the direction of contact movement.

Tube Carrier



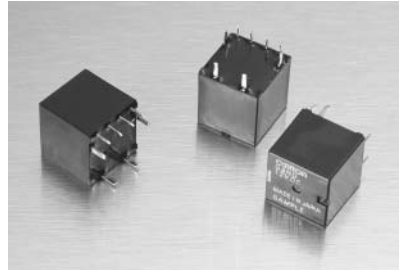
Remarks

For use on any of the products, please contact your sales representative and confirm with spec sheet and actual usage condition.

We constantly endeavor to enhance the quality of our products and update our product offering; therefore, specifications and product availability are subject to change without notice.

Features

- Compact size
- High performance PCB relay
- 25A motor lock load
- Fully sealed construction
- Fully automated assembly
- DPDT (“H” Bridge) contracts
- Pre-solder as for all terminal
- PWB pattern design is easy
- ISO9001/QS9000 series approval



Specifications

■ Available Types

	Type
G8ND-2 12VDC	Standard
G8ND-2S 12VDC	High Sensitivity

■ Contact Data

Max Switching Current	30A
Rated Current	25A Motor load
Max Switching Voltage	16V
Contact Material	Silver tin alloy (Cadmium Free)

■ Coil Ratings

Type	Coil Resistance	Pull in Voltage
G8ND-2 12VDC	225Ω	<7.2
G8ND-2S 12VDC	180Ω	<6.5

■ Specifications

Temperature Range	-40 to +85°C
Mechanical Life	1,000,000 Operations
Electrical Life	100,000 Operations
Weight	7.5g

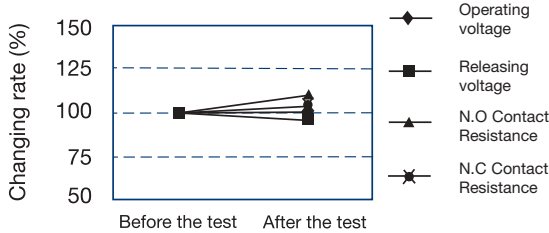
Application Examples

- Power windows
- Power door lock
- Seat adjustment
- Sunroof
- Wiper controls

LIFE TEST I (Power window motor: G8ND-2 12VDC)

- Test item
14VDC-24A/2.6A
130,000
Operations minimum

• Shift of pick-up drop-out voltage

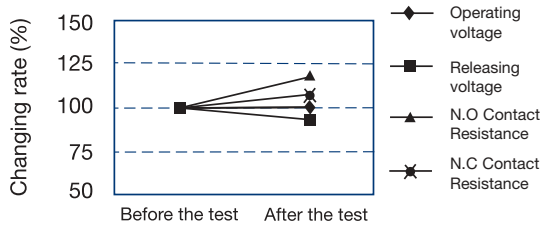


Characteristics		Specification		Before the Test	After the Test
Contact Resistance (milliohm)	N.O. Contact	100 or lower	MAX	4.20	5.62
			MIN	3.30	3.80
			AVE	3.850	4.230
	N.C. Contact		MAX	5.00	5.10
			MIN	3.20	4.10
			AVE	4.320	4.490
Structure		No abnormal condition		Good	Good

LIFE TEST II (Door lock motor: G8ND-2 12VDC)

- Test item
14VDC-27A
130,000
Operations minimum

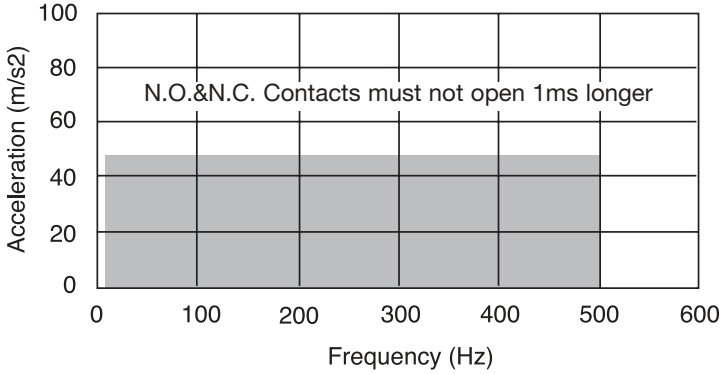
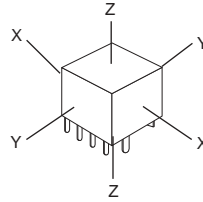
• Shift of pick-up drop-out voltage



Characteristics		Specification		Before the Test	After the Test
Contact Resistance (milliohm)	N.O. Contact	100 or lower	MAX	4.20	5.60
			MIN	3.50	3.60
			AVE	3.669	4.290
	N.C. Contact		MAX	4.30	5.90
			MIN	3.90	4.10
			AVE	4.120	4.360
Structure		No abnormal condition		Good	Good

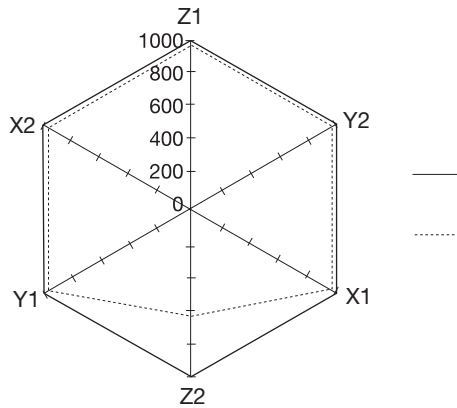
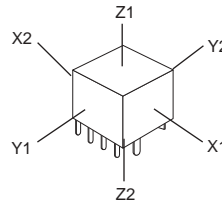
VIBRATION RESISTANCE CHARACTERISTICS

- Test condition
 Frequency: 10Hz-500Hz-10Hz
 Acceleration: 45m/s²
 Direction of vibration: see right diagram
 Detection level: Contacts must not open 1ms or longer



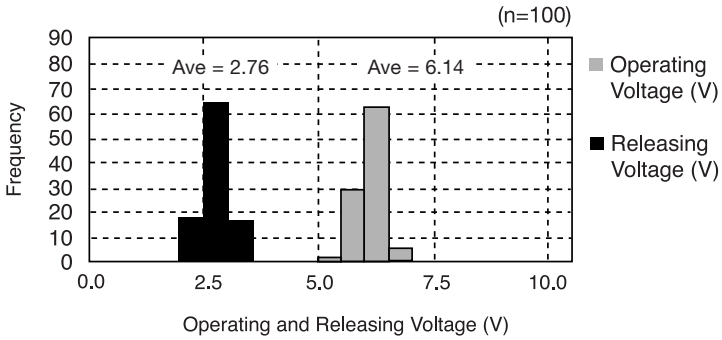
SHOCK RESISTANCE CHARACTERISTICS

- Test condition
 Shock application time: 11ms, half-sine wave
 Shock direction: see right diagram
 Detection level: Contacts must not open 1ms or longer

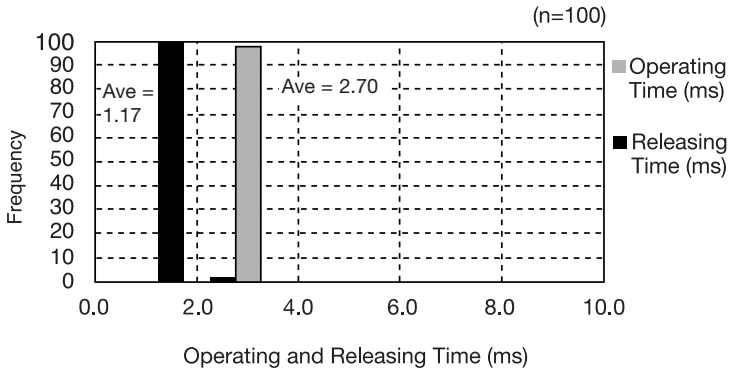


REFERENCE DATA (G8ND-2 12VDC)

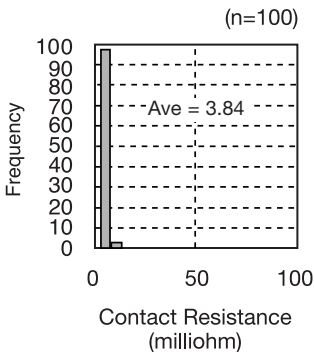
Distribution of operating voltage and releasing voltage



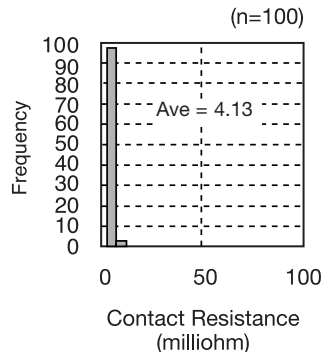
Distribution of operating time



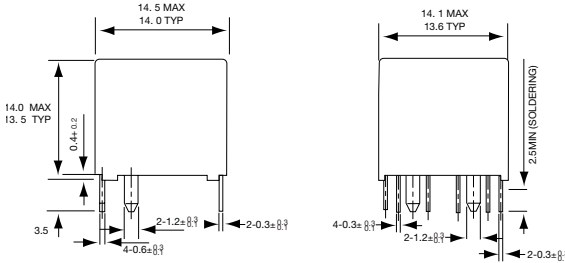
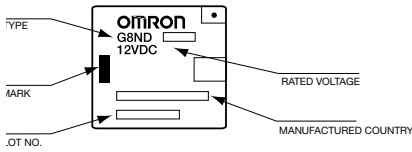
N.O. contact – Distribution of contact resistance



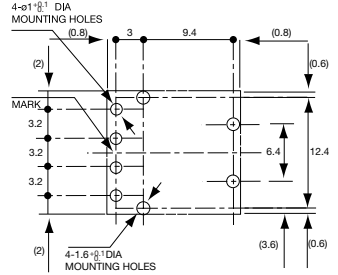
N.C. contact – Distribution of contact resistance



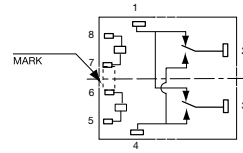
Dimensions



TOLERANCE: ±0.1mm



MOUNTING HOLES (BOTTOM VIEW)

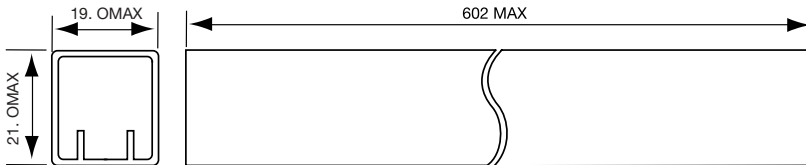


TERMINAL ARRANGEMENT/ INTERNAL CONNECTIONS (BOTTOM VIEW)

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• Omron PCB relays may be oriented in any desired direction. Whenever possible, however, care should be taken that they are not subjected to vibration along the direction of contact movement.

Tube Carrier



• Remarks

For use on any of the products, please contact your sales representative and confirm with spec sheet and actual usage condition.

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ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Features

- Compact size
- High performance PCB relay
- 25A motor lock load
- Fully sealed construction
- Fully automated assembly
- DPDT (separate) contacts
- Pre-solder as for all terminal
- ISO9001/QS9000 series approval



Specifications

■ Available Types

G8NW-2 12VDC	Standard
G8NW-2S 12VDC	High Sensitivity
G8NW-2L 12VDC	High Temperature (105°C)
G8NW-2H 12VDC	High Temper

■ Contact Data

Max Switching Current	30A
Rated Current	25A Motor load
Max Switching Voltage	16V
Contact Material	Silver tin alloy (Cadmium Free)

■ Coil Ratings

Type	Coil Resistance	Pull in Voltage
G8NW-2 12VDC	225Ω	<7.2
G8NW-2S 12VDC	180Ω	<6.5
G8NW-2L 12VDC	225Ω	<7.2
G8NW-2H 12VDC	180Ω	<6.5

■ Specifications

Temperature Range	-40 to +85°C (-2L, -2H: -40 to +105°C)
Mechanical Life	1,000,000 Operations
Electrical Life	100,000 Operations
Weight	7.8g

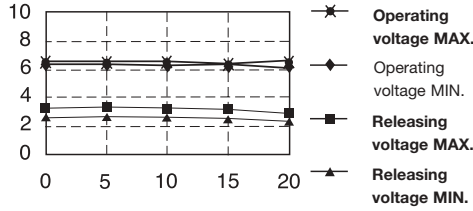
Application Examples

- Power windows
- Power door lock
- Seat adjustment
- Sunroof
- Wiper controls

■ LIFE TEST I (Power window motor: G8NW-2 12VDC)

• Test item
14VDC-26A
Motor Lock 200,000
Operations minimum

• Shift of pick-up drop-out voltage

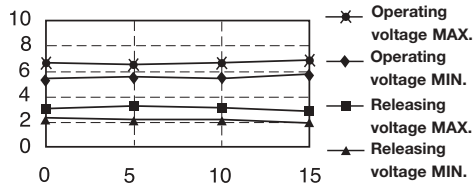


Characteristics		Specification		Before the test	After the test
Contact Resistance	N.O. Contact	100(mΩ) or lower	MAX.	4.1	7.2
			MIN.	2.8	3.5
			AVE.	3.36	5.00
	N.C. Contact	100(mΩ) or lower	MAX.	5.6	11.8
			MIN.	3.9	5.0
			AVE.	4.44	8.00
Insulation Resistance		100(mΩ) or higher		More than 1000	More than 1000
Structure		No abnormal condition		Good	Good

■ LIFE TEST II (Power window motor: G8NW-2 12VDC)

• Test item
16VDC-22A
200,000
Operations minimum

• Shift of pick-up drop-out voltage



Characteristics		Specification		Before the test	After the test
Contact Resistance	N.O. Contact	100(mΩ) or lower	MAX.	4.7	6.8
			MIN.	3.2	3.5
			AVE.	3.89	4.50
	N.C. Contact	100(mΩ) or lower	MAX.	5.3	7.2
			MIN.	3.7	4.0
			AVE.	4.46	6.20
Insulation Resistance		100(mΩ) or higher		More than 1000	More than 1000
Structure		No abnormal condition		Good	Good

VIBRATION RESISTANCE CHARACTERISTICS

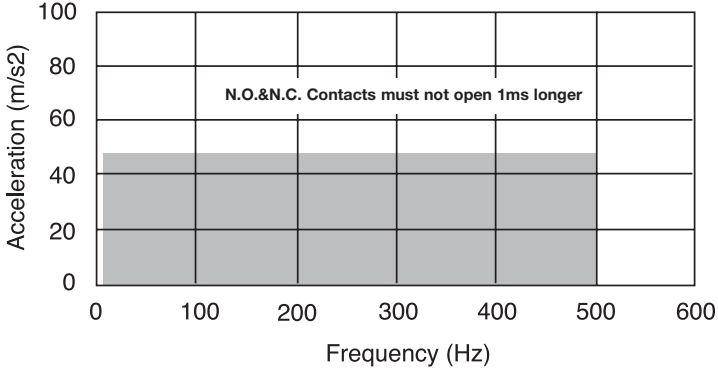
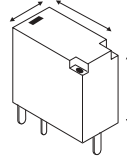
Test condition:

Frequency: 10Hz-500Hz-10Hz

Acceleration: 43.1m/s²

Direction of vibration: see right diagram

Detection level: Contacts must not open 1ms or longer



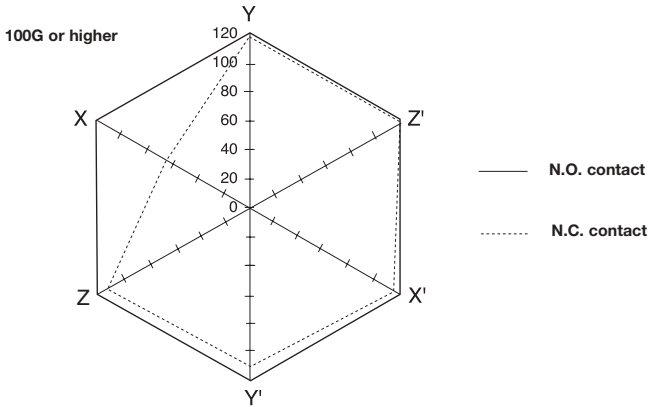
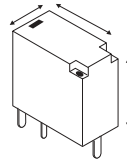
SHOCK RESISTANCE CHARACTERISTICS

Test condition:

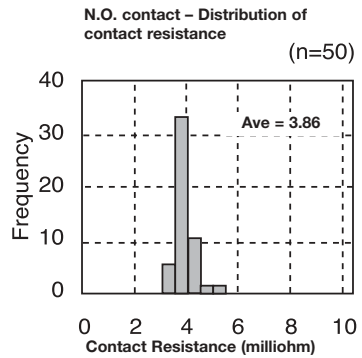
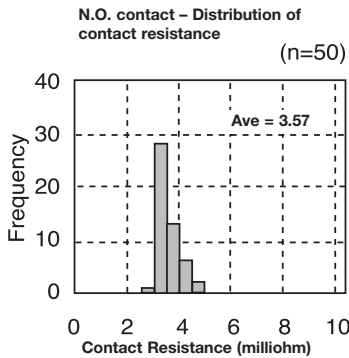
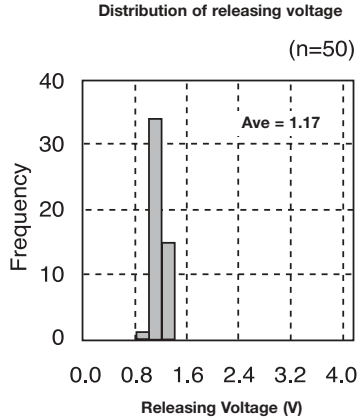
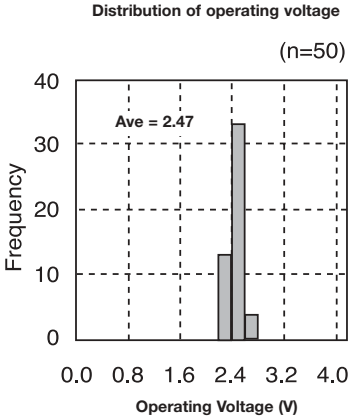
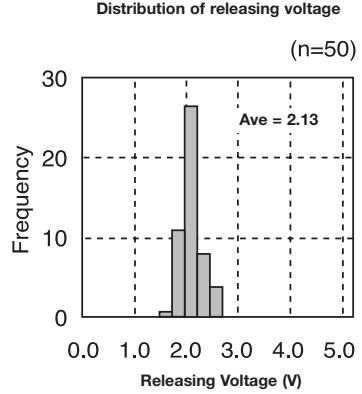
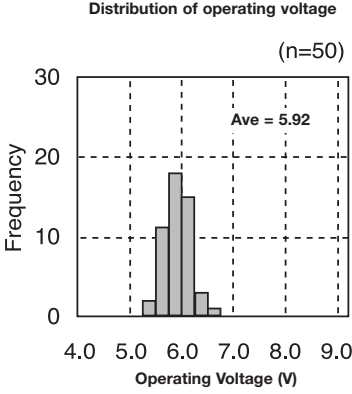
Shock acceleration: 11ms, half-sine wave

Shock direction: see right diagram

Detection level: Contacts must not open 1ms or longer

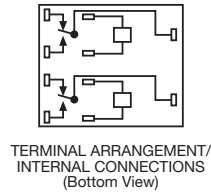
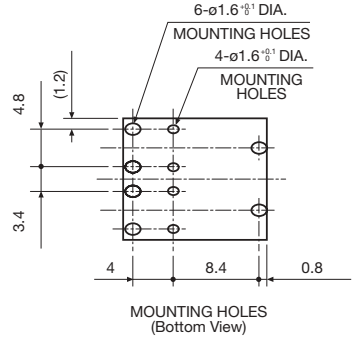
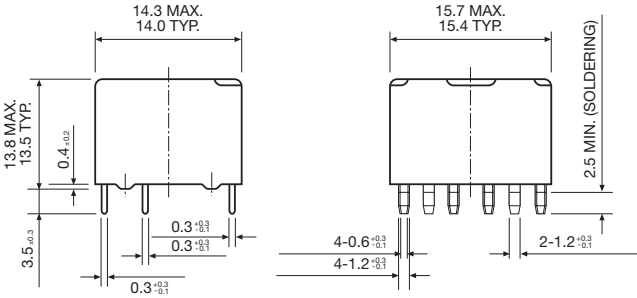
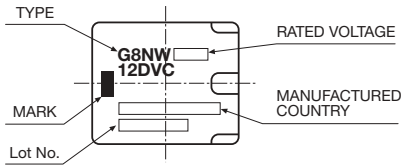


■ Reference Data (G8NW-2 12VDC)



Dimensions

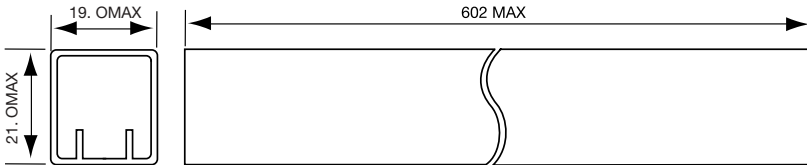
Tolerances: ±0.1mm



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• Omron PCB relays may be oriented in any desired direction. Whenever possible, however, care should be taken that they are not subjected to vibration along the direction of contact movement.

■ Tube Carrier



• Remarks

For use on any of the products, please contact your sales representative and confirm with spec sheet and actual usage condition.

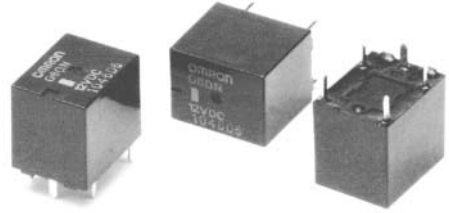
We constantly endeavour to enhance the quality of our products and update our product offering; therefore, specifications and product availability are subject to change without notice.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Features

- Compact size
- High performance PCB relay
- Fully sealed construction
- Next generation general purpose automotive PCB relay
- Fully automated assembly



Specifications

■ Available Types

Type	Contact Form	Recommended Loads
G8QN-1C4 12VDC	SPDT	Motor, Resistive

■ Contact Type

Continuous carry current (max.)	5A
Inrush current (L/R=7ms; 15ms max.)	20A
Contact voltage drop (Initial value at 23°C) (max.)	100mΩ

■ Ratings/Specifications

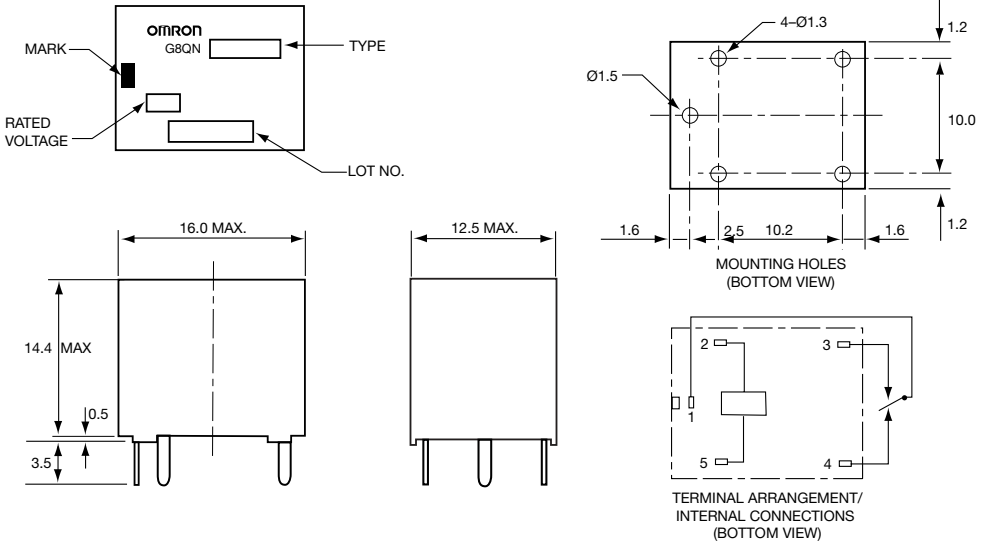
Rated voltage	12VDC	
Operating voltage (max)	16VDC	
Coil Resistance	210Ω ± 10%	
Pull in voltage (cold start)	at +20°C (max)	7.3VDC
	at +80°C (max)	9.0VDC
Drop-out voltage at +20°C (min)	0.9VDC	
Max. Continuous carry current flow time (16V at 80°C) (max.)	15 min	
Operating time (max)	10 ms	
Release time (max)	5 ms	
Operating ambient temperature	-40°C to +85°C	
Mechanical life (min)	10,000,000 cycles (at frequency of 18,000 operations/hour)	
Electrical life (resistive load) (min)	100,000 cycles (14V; Continuous carry current)	
Weight	5.5g	

Application Examples

- Power window
- Electric sunroof
- Intermittent Windshield wiper
- Power door lock
- Power seat
- Electric wing mirror
- Power radio aerial
- Washer pump

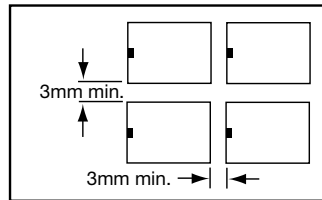
Dimensions

(All dimensions in mm.)



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- Omron PCB relays may be oriented in any desired direction. Whenever possible, however, care should be taken that they are not subjected to vibration along the direction of contact movement.

- If several relays are to be mounted on a single printed circuit board, they should be given at least 3mm clearance on all sides as shown in the diagram below.



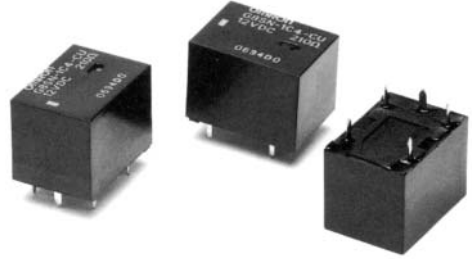
Note: Proper spacing is necessary to dissipate heat build-up from individual relays. Other than this, there are normally no restrictions depending on application. Please contact Omron for details.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Features

- General purpose automotive PCB relay
- Compact size
- Fully sealed construction
- Fully automated process



Specifications

■ Available Types

Type	Contact Form	Note
G8SN-1C7-CUK 12DC (320Ω)	SPDT	Motor, Resistive
G8SN-1C4-CU 12DC (210Ω)	SPDT	Lamp, Capacitive

■ Contact Type

Continuous carry current (max.)	10A
Inrush current (L/R=7ms; 15ms max.)	30A
Contact voltage drop (Initial value)	100 mV

■ Ratings/Specifications

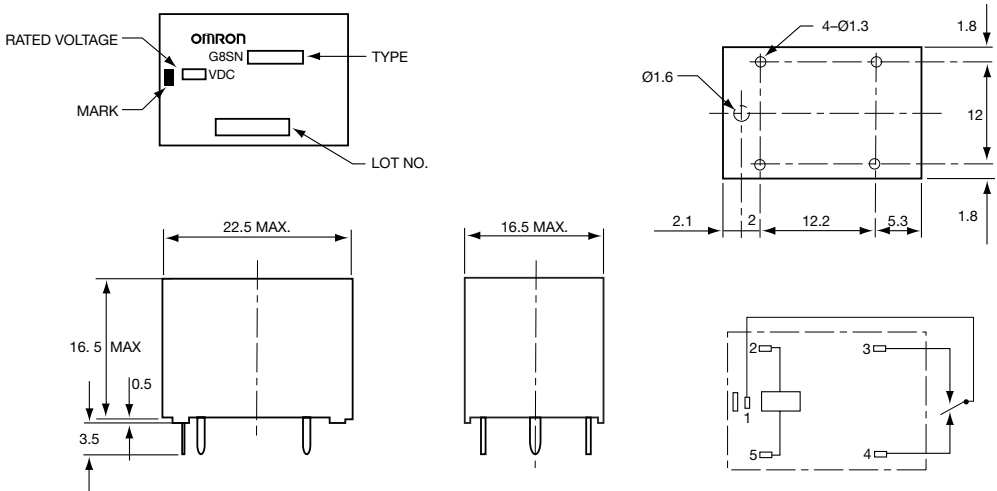
Rated voltage	12VDC	
Operating voltage (max)	16VDC	
Coil Resistance	320Ω	210Ω
Pull in voltage (cold start)	at +20°C (max)	7.3VDC
	at +80°C (max)	9.0VDC
Drop-out voltage at +20°C (min)	1.0VDC	0.9VDC
Max. Continuous carry current flow time (16VDC at 80°C) (max.)	Unlimited	15 min.
Operating time (max)	10 ms	
Release time (max)	5 ms	
Operating ambient temperature	-40°C to +85°C	
Mechanical life (min)	10,000,000 cycles (at frequency of 18,000 operations/hour)	
Electrical life (resistive load) (min)	100,000 cycles (14V; Continuous carry current)	
Weight	13g	

Application Examples

- Electric wing mirror
- Car audio
- Power radio aerial
- Air-conditioning
- Courtesy lamp
- Power window
- Electric sunroof
- Intermittent windshield wiper
- Passive restraint seatbelt
- Power door lock
- Power seat

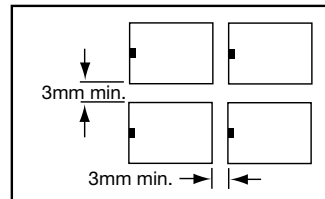
Dimensions

(All dimensions in mm.)



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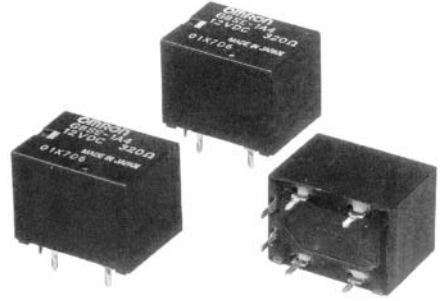
- Note:** Proper spacing is necessary to dissipate heat build-up from individual relays. Other than this, there are normally no restrictions depending on application. Please contact Omron for details.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Features

- High capacity PCB relay (40A at 20°C)
- Wide range usage
- SPST and SPDT arrangements.



Specifications

■ Available Types

Type	Contact Form	Recommended Loads
G8SE-1A4-SK 12DC (320Ω)	SPST	Motor, Resistive

■ Contact Type

Continuous carry current (max.)	20A
Inrush current (L/R = 7ms; 15ms max.)	60A
Contact value drop (Initial value)	50 mΩ

■ Ratings/Specifications

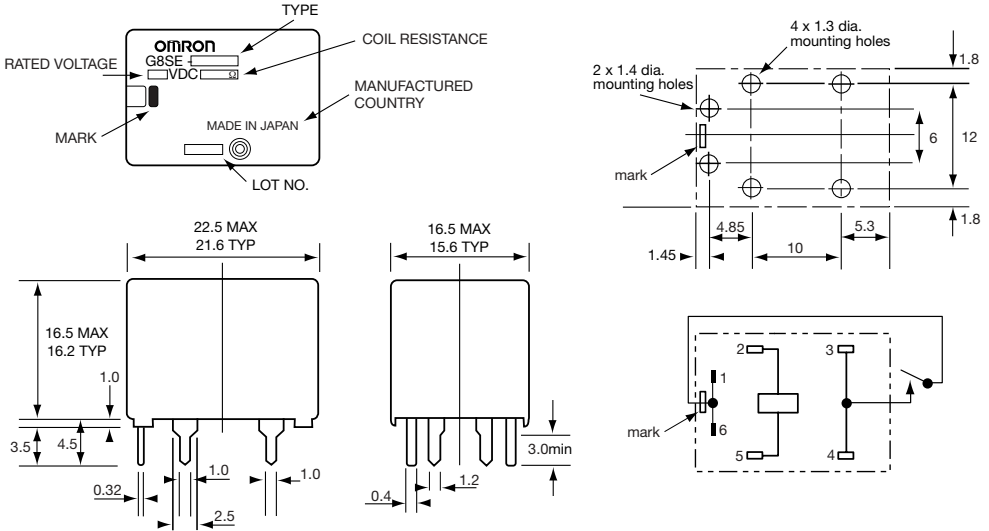
Rated voltage	12VDC
Operating voltage (max)	16VDC
Coil Resistance	320Ω
Pull in voltage (cold start) at 20°C (max)	7.3VDC
Drop-out voltage at +20°C (min)	1.2VDC
Max. Continuous carry current flow time (16VDC at 80°C max.)	Unlimited
Operate time (max)	10 ms
Release time (max)	5 ms
Operating ambient temperature	-40°C to +110°C
Mechanical life (min)	10,000,000 cycles (at frequency of 18,000 operations/hour)
Electrical life (resistive load) (max)	100,000 cycles
Weight	16.0g

Application Examples

- Electric wing mirror
- Car audio
- Power radio aerial
- Air-conditioning
- Courtesy lamp
- Power window
- Electric sunroof
- Intermittent windshield wiper
- Passive restraint seatbelt
- Power door lock
- Power seat

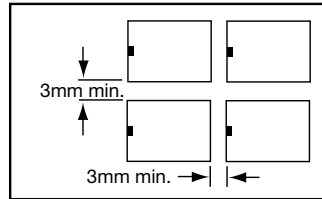
Dimensions

(All dimensions in mm.)



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- Omron PCB relays may be oriented in any desired direction. Whenever possible, however, care should be taken that they are not subjected to vibration along the direction of contact movement.

- If several relays are to be mounted on a single printed circuit board, they should be given at least 3mm clearance on all sides as shown in the diagram below.



Note: Proper spacing is necessary to dissipate heat build-up from individual relays. Other than this, there are normally no restrictions depending on application. Please contact Omron for details.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Features

- General purpose automotive PCB relay.
- High capacity relay.
- High heat resistance.



Application Examples

For Blower fan, defogger and power supply

Specifications

■ Available Types

Type	Package	Style
G8PE-1A4 (DC12V)	Sealed type	SPST Standard
G8PE-1C4 (DC12V)	Sealed type	SPDT Standard
G8PE-1A4-U (DC12V)	Sealed type	SPST High sensitivity
G8PE-1C4-U (DC12V)	Sealed type	SPDT High sensitivity

■ Contact Data

Arrangement	SPST, SPDT
Contact material	Silver tin oxide (cadmium free)
Contact resistance	Max. 5m Ω (Initial) Max. 10m Ω (After end of life)

Characteristics	Measurement condition	Contact side	Value	Units
Maximum switching current (On)	At +20 °C	NO	180	A
		NC	60	A
Maximum switching current (Off)	At +20 °C	NO	60	A
		NC	30	A
Maximum rated current	At +20 °C	NO	40	A
		NC	25	A
	At +20 °C	NO	30	A
		NC	20	A

■ Coil Data

Part Number	G8PE-1A4	G8PE-1C4	G8PE-1A4-U	G8PE-1C4-U
	12 VDC	12 VDC	12VDC	12VDC
Rated coil resistance at 20°C	135+/-10% Ω	135+/-10% Ω	100+/-10% Ω	100+/-10% Ω
Maximum coil temperature	180 °C at 20,000h	180 °C at 20,000h	180 °C at 20,000h	180 °C at 20,000h

■ Characteristics

Par Number		G8PE-1A4	G8PE-1C4	G8PE-1A4-U	G8PE-1C4-U
		12 VDC	12 VDC	12 VDC	12 VDC
Pick-up voltage at 20°C		6.8 V	6.8 V	6.0 V	6.0 V
Dropout voltage at 20°C		1.0 V	1.0 V	0.85 V	0.85 V
Operation time		10ms max.			
Release time		10ms max.			
Insulation resistance		10MΩ min (at 500 VDC)			
Dielectric strength		500 VAC, 50 / 60 Hz for 1 minute between coil and contacts 500 VAC, 50 / 60 Hz for 1 minute between contacts of different poles			
Vibration	Mechanical durability	5 to 400 Hz, 44.1m/s ² mm double amplitude			
	Malfunction durability	5 to 100 Hz, 44.1m/s ²			
Shock	Mechanical durability	1000 m/s ² min			
	Malfunction durability	100 m/s ² min			
Ambient temperature		-40 to 105° C			
Humidity		35 to 85% RH			
Service Life	Mechanical	1,000,000 operations (Frequency: 18,000operations/hour)			
	Electrical	100,000 operations			
Weight		Approx. max. 20 g			

Engineering Data

■ Malfunctioning Vibration

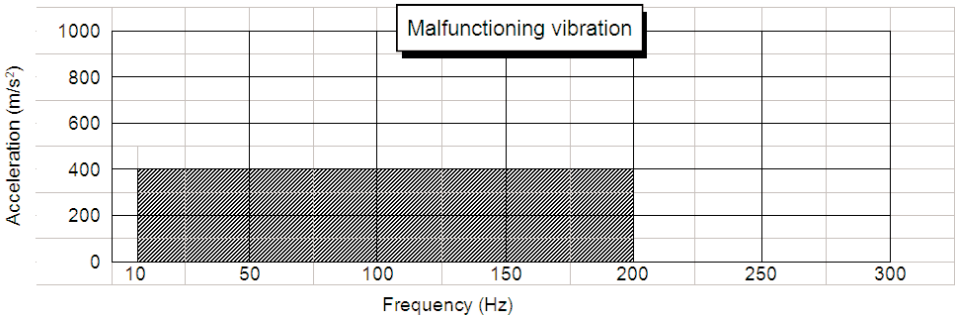
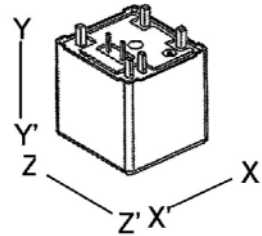
TEST CONDITION

Frequency: 10Hz-200Hz-10Hz

Acceleration: 392m/s²

Direction of vibration: See right diagram

Detection level: Contacts must not open 1ms or longer



■ Malfunctioning Shock

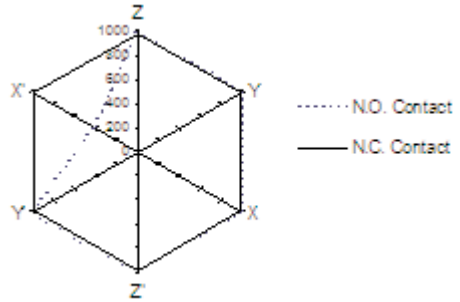
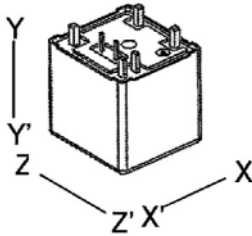
Test Condition

Shock acceleration 1000 m/s²

Detection level: Non operational error of 10μ s min.

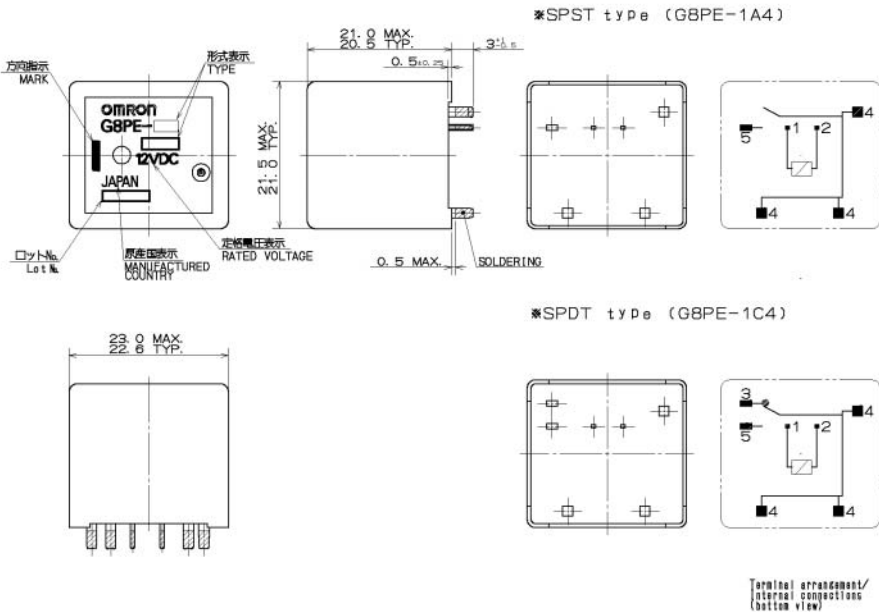
N.O. Contact: must not open with rated coil voltage

N.C. Contact: must not open without energising



Dimensions

Note: All units are in millimeters unless otherwise indicated.
All tolerance are ±0.1 mm unless otherwise stated.



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Features

- DC 24V specification.
- High capacity specification (35A).
- Covered MINI ISO by high capacity type.
- Achieve low heat generation and improve connection confidence to the connector.
- SPST and SPDT arrangements.



Specifications

■ Type

Part Number		Contact Type
Unsealed	Sealed	
G8HN-1A2T-RJ/DJ (DC12V/DC24V)	G8HN-1A4T-RJ/DJ (DC12V/DC24V)	SPST Standard
G8HN-1C2T-RJ/DJ (DC12V/DC24V)	G8HN-1C4T-RJ/DJ (DC12V/DC24V)	SPDT Standard
G8HN-1A2T-RH/DH (DC12V)	G8HN-1A4T-RH/DH (DC12V)	SPST High capacity
G8HN-1C2T-RH/DH (DC12V)	G8HN-1C4T-RH/DH (DC12V)	SPDT High capacity

■ Contact Data

Arrangement		SPST,SPDT	
Contact material		Silver tin oxide (cadmium free)	
Contact voltage drop	Standard	Less than 200 mV at 20A	
	High capacity	Less than 200 mV at 35A	
Max. Switching Current	Standard	12VDC	N.O. side : Inrush 100A, Steady 20A N.C. side : Inrush 50A, Steady 10A
		24VDC	N.O. side : Inrush 30A, Steady 10A N.C. side : Inrush 15A, Steady 5A
	High capacity	12VDC	N.O. side : Inrush 120A, Steady 35A N.C. side : Inrush 40A, Steady 20A

■ Coil Data

With Surge Absorber Resistor

Part Number	G8HN-1A2T-RJ G8HN-1C2T-RJ		G8HN-1A2T-RH G8HN-1C2T-RH
	G8HN-1A4T-RJ G8HN-1C4T-RJ		G8HN-1A4T-RH G8HN-1C4T-RH
	12VDC	24VDC	12VDC
Rated coil resistance at 20°C	95.9+/-10%Ω	315.1+/-10%Ω	124.2+/-10%Ω
Rated coil current at 20°C	125.1mA+/-10%	76.2mA+/-10%	96.6mA+/-10%

With Surge Absorber Diode

Part Number	G8HN-1A2T-DJ G8HN-1C2T-DJ		G8HN-1A2T-DH G8HN-1C2T-DH
	G8HN-1A4T-DJ G8HN-1C4T-DJ		G8HN-1A4T-DH G8HN-1C4T-DH
	12VDC	24VDC	12VDC
Rated coil resistance at 20°C	105.0±10%Ω	340.0+/-10%Ω	140.0+/-10%Ω
Rated coil current at 20°C	114.3mA+/-10%	70.6mA+/-10%	85.7mA+/-10%

■ Characteristics

Part Number	G8HN-1A2T-DJ/RJ G8HN-1C2T-DJ/RJ		G8HN-1A2T-DH/RH G8HN-1C2T-DH/RH
	G8HN-1A4T-DJ/RJ G8HN-1C4T-DJ/RJ		G8HN-1A4T-DH/RH G8HN-1C4T-DH/RH
	12VDC	24VDC	12VDC
Pull-in voltage at 20°C	8V max.	16V max.	8.0V max.
Drop-out voltage at 20°C	1.2V min.	2.4V min.	1.2V min.
Operating time	10ms max.		
Releasing time	10ms max.		
Insulation resistance	10MΩ min (at 500 VDC)		
Dielectric strength	500VAC, 50 / 60 Hz for 1 minute between coil and contacts 500VAC, 50 / 60 Hz for 1 minute between contacts of different polarity 500VAC, 50 / 60 Hz for 1 minute between contacts of same polarity		
Vibration	Mechanical durability	10 ~ 500 Hz, 44.1 m/s ² mm double amplitude	
	Malfunction durability	10 ~ 2,000 Hz, 44.1 m/s ²	
Shock	Mechanical durability	100 m/s ² min	
	Malfunction durability	1000 m/s ² min	
Ambient temp.	Operating/storage	-40 to 125°C	
Humidity	5 to 85%RH		
Service life	Mechanical	1,000,000 operations (Frequency: 18,000 operations/hour)	
	Electrical	100,000 operations (Frequency: 1,800 operations/hour)	
Weight	Approx. 20.0g		

Application Example

- Head-light lamp
- Blower fan
- Defogger

■ LIFE TEST I (Blower motor: G8HN-1C2T-DJ 12VDC)

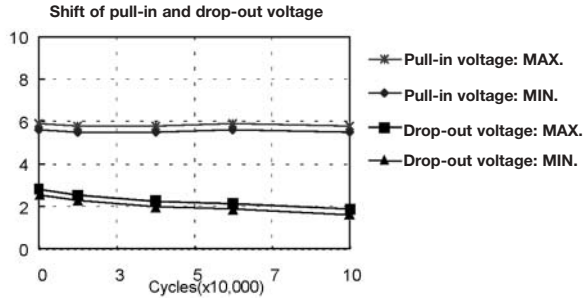
Test item

14VDC

Inrush 64A Steady 22A

Frequency: 1sec ON/ 4sec OFF

Cycle: 500,000



Characteristics	Specification		Before the test	After the test
N.O. Voltage drop between terminals	50mV at 20A MAX.	MAX.	37.0	65.2
		MIN.	31.0	35.1
		AVE.	33.06	45.84
Insulation Resistance	10MΩ MIN.		1000 MIN.	1000 MIN.
Structure	No abnormal condition		Good	Good

■ LIFE TEST II (Halogen lamp: G8HN-1C2T-DJ 12VDC)

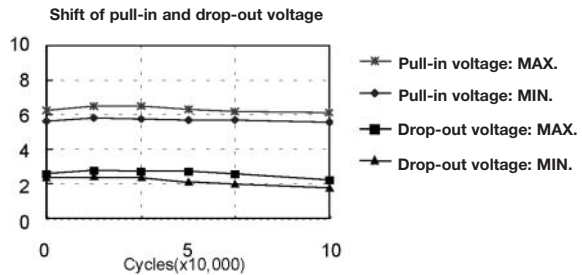
Test item

164VDC

Inrush 135A Steady 21A

Frequency: 2sec ON/ 13sec OFF

Cycle: 200,000



Characteristics	Specification		Before the test	After the test
N.O. Voltage drop between terminals	50mV at 20A MAX.	MAX.	34.5	54.2
		MIN.	27.5	35.7
		AVE.	32.06	44.38
Insulation Resistance	10MΩ MIN.		1000 MIN.	1000 MIN.
Structure	No abnormal condition		Good	Good

Engineering Data

Malfunctioning vibration

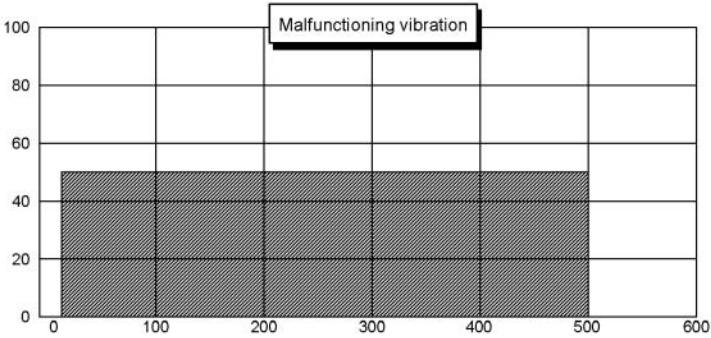
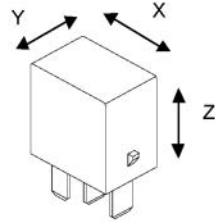
Test condition

Frequency: 10Hz-500Hz-10Hz

Acceleration: 43.1m/s²

Direction of vibration: see right diagram

Detection level: Contacts must not open 1ms or longer



Malfunctioning Shock

Test condition

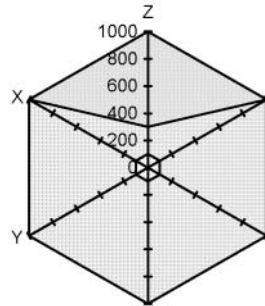
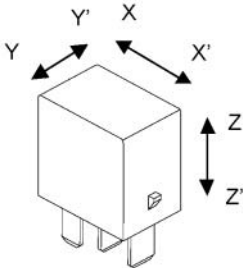
Shock acceleration: 100m/s² to 1000 m/s²

Detection level: Contact must not open 1ms or more with 100m/s²

N.O. Contact – must not open with rated coil voltage

N.C. Contact – must not open without energizing

MALFUNCTIONING SHOCK

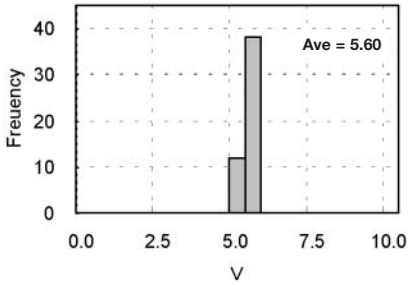


N.O. side contact
 N.C. side contact
 Standard

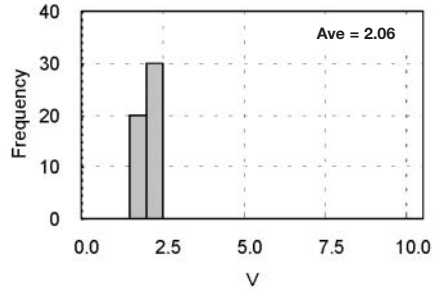
General Characteristic Data

Sample: G8HN-1C2T-DJ 50pcs.

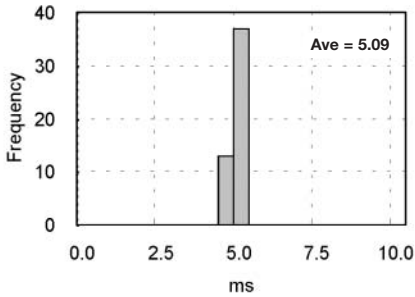
Distribution of pull-in voltage



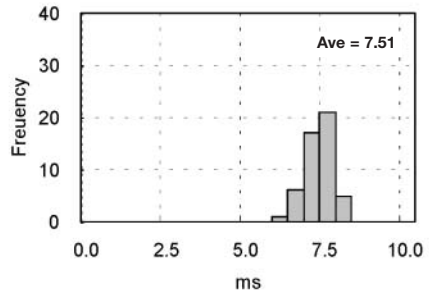
Distribution of drop-out voltage



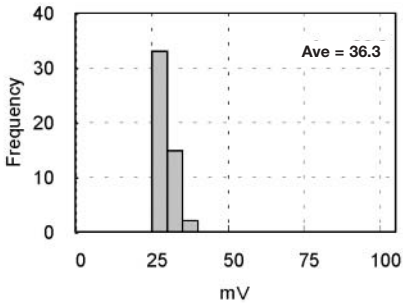
Distribution of operating time



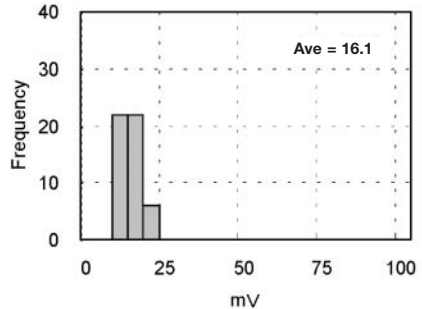
Distribution of releasing time



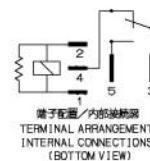
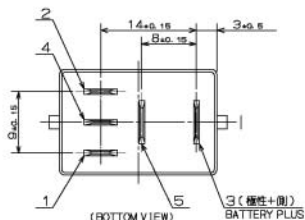
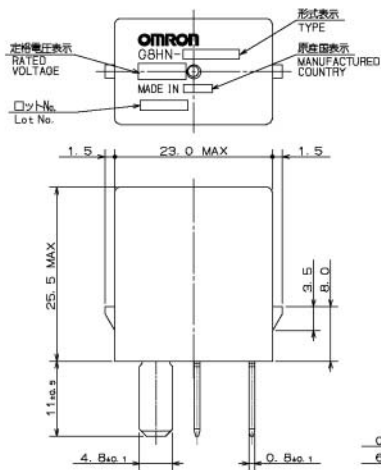
Distribution of N.O. voltage drop between terminals



Distribution of N.C. voltage drop between terminals



Dimensions



サージ吸収抵抗またはダイオード付
 WITH SURGE ABSORBER
 RESISTOR OR DIODE

- 指定なき公称は、すべて±0.1mmとする。
- ALL TOLERANCE ARE ±0.1mm UNLESS OTHERWISE INDICATED.

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Features

- Low height PCB relay based on Micro ISO
- Height: MAX 17mm
- Environment-friendly by light weight and space saving
- Low heat generation and high capacity switching
- Fully sealed construction
- SPST contacts
- All terminals pre-soldered
- ISO9001/QS9000 series approval



Available Types

Part Number	Contact Form
G8HL-1A4P 12VDC	Standard

Contact Data

Max Switching Current	Inrush 100A Steady 20A
Rated Current	20A
Max Switching Voltage	16VDC
Contact Material	Silver tin alloy (Cadmium Free)

Characteristics

Type	G8HL-1A4P	
Rated coil resistance at 20°C	135ohm ± 10%	
Rated coil current at 20°C	88.9mA	
Pull-in voltage at 20°C	7.0V MAX.	
Drop-out voltage at 20°C	0.7 to 4.0V	
Operating time	10ms max.	
Releasing time	10ms max.	
Insulation resistance	10MΩ min (at 500 VDC)	
Dielectric strength	500VAC, 50 / 60 Hz for 1 minute between coil and contacts 500VAC, 50 / 60 Hz for 1 minute between contacts of different polarity 500VAC, 50 / 60 Hz for 1 minute between contacts of same polarity	
Vibration	Mechanical durability	20~500 Hz, 45m/s ² mm
	Malfunction durability	20~500 Hz, 45m/s ² mm
Shock	Mechanical durability	1000 m/s ² min
	Malfunction durability	100 m/s ² min
Ambient temp.	Operating/storage	-40 to 100°C
Humidity	5 to 85%RH	
Service life	Mechanical	1,000,000 operations
	Electrical	100,000 operations
Weight	Approx. 13.0g	

Application Example

- Head light lamp
- Blower fan
- Defogger
- Electrical power steering assist system

■ LIFE TEST I (Head Lamp 240W)

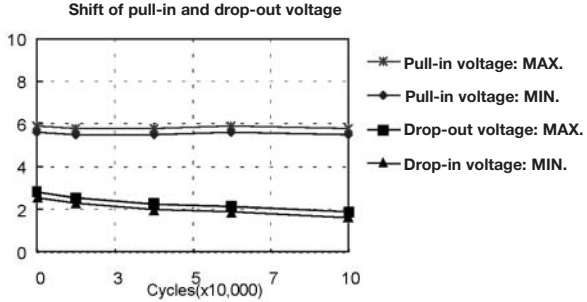
Test item

14VDC

In-rush current 120A, Rated current 20A

Frequency; 1sec ON/29s OFF

Cycle; 100,000



Characteristics	Specification	Before the test	After the test	
Voltage Drop (mV) at 20 A	200 Max.	MAX.	40	48
		MIN.	24	30
		AVE.	30.0	36
Insulation Resistance (Mega ohm)	10 Min.	More than 1000	More than 1000	
Structure	No abnormal condition	Good	Good	

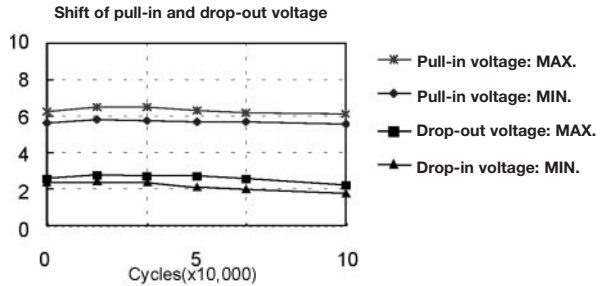
■ LIFE TEST I (Head Lamp 240W)

Test item

14VDC

Frequency; 1sec ON/5s OFF

Cycle; 100,000



Characteristics	Specification	Before the test	After the test	
Voltage Drop (mV) at 20 A	200 Max.	MAX.	24	44
		MIN.	18	29
		AVE.	20.0	38
Insulation Resistance (Mega ohm)	10 Min.	More than 1000	More than 1000	
Structure	No abnormal condition	Good	Good	

Engineering Data

Malfunctioning vibration

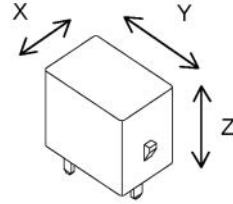
Test condition

Frequency: 10Hz-500Hz-10Hz

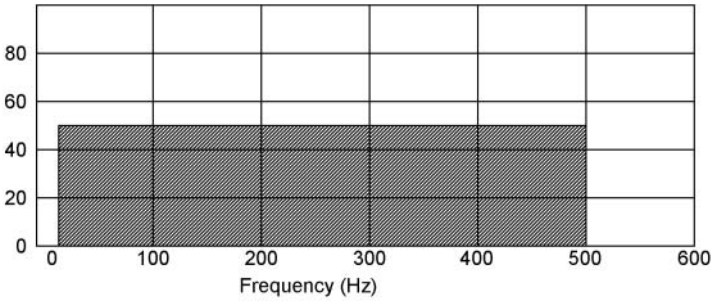
Acceleration: 43.1m/s²

Direction of vibration: see right diagram

Detection level: Contacts must not open 1ms or longer



MALFUNCTIONING VIBRATION



Malfunctioning Shock

Test condition

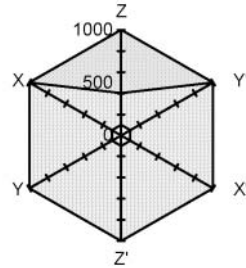
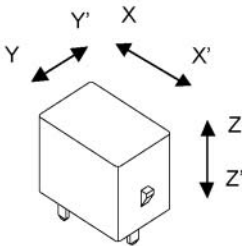
Shock acceleration: 100m/s² to 1000 m/s²

Detection level: Contact must not open 1ms or more with 100m/s²

N.O. Contact – must not open with rated coil voltage

N.C. Contact – must not open without energizing

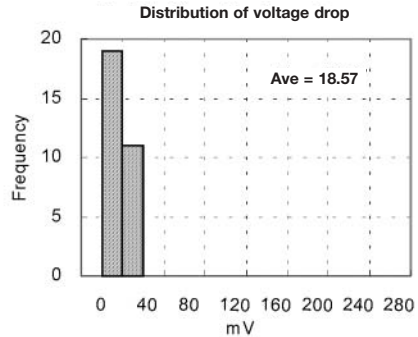
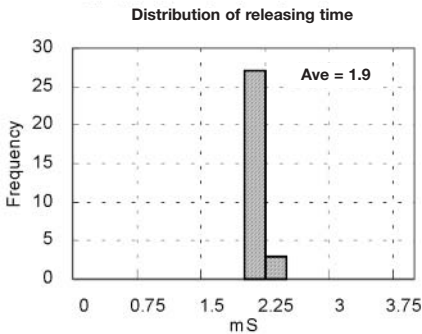
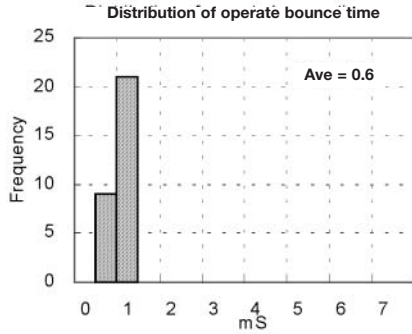
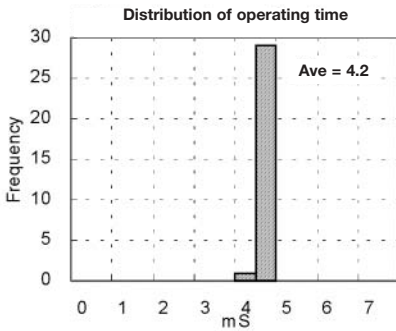
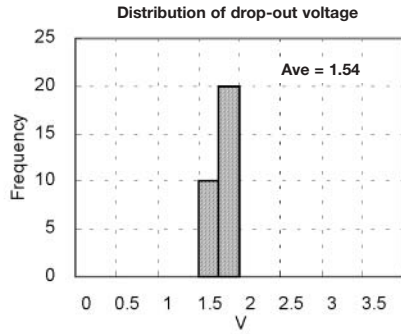
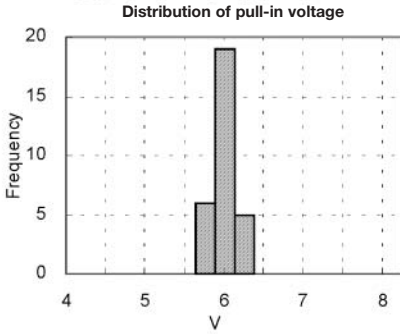
MALFUNCTIONING SHOCK



N.O. side contact	N.C. side contact	Standard
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General Characteristic Data

Sample: G8HL-1A4P 50pcs.



Features

- General purpose automotive relay.
- Wide temperature range -40°C to +125°C.
- Standard ISO terminal foot print.
- Handle heavy automotive load:
Inrush current 100A
- High current path fully welded – Reduces heat build up at full load.
- Made in North America.



Available Types

Type	Contact Form	Note
G8JN 1C7T R 12DC	SPDT	With Supression Resistor
G8JN 1C7T D 12DC	SPDT	With Supression Diode
G8JN 1C7T MF R 12DC	SPDT	With Mounting Bracket and Resistor
G8JN 1C7T F R 12DC	SPDT	Weatherproof with Resistor

Contact Data

Resistive load (max.)	35A(NO)/20A(NC)
Inrush current (max.)	100A
Contact resistance	5 m Ohm

Ratings/Specifications

Rated voltage	12VDC	
Operating voltage (max)	16VDC	
Coil Resistance	72Ω± 15%	
Pull in voltage (cold start)	at +23°C (max)	8.0 VDC
	at +125°C (max)	11.0 VDC
Drop-out voltage at +23°C (min)	1.0 VDC	
Duty cycle at rated load (16V at 80°C)	Up to 100%	
Operate time (at 23°C)(max)	10 ms	
Release time (at 23°C)(max)	4.0 ms	
Operating ambient temperature	-40°C to +125°C	
Mechanical life (min)	1,000,000 cycles	
Electrical life (resistive load) (min)	100,000 cycles	
Weight	40g	

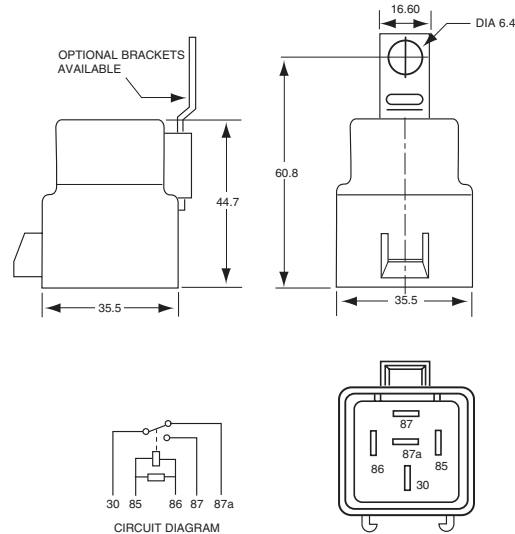
Application Examples

- Heated rear window
- ABS
- Head lamp
- Cooling fan
- HVAC blower motor
- Compressor coil
- Fuel pump
- Starter solenoid
- Horn

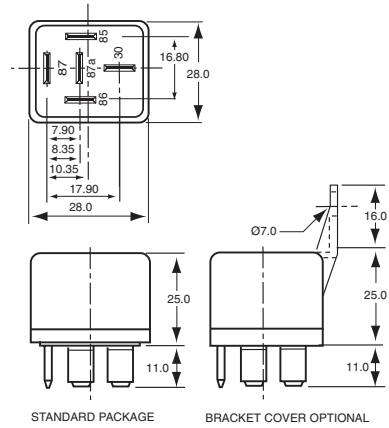
Dimensions

(All dimensions in mm.)

WEATHERPROOF



STANDARD



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

Features

- Special purpose high power automotive relay. (70 Amp)
- Wide temperature range -40°C to +135°C.
- High current path fully welded – Reduces heat built up at full load.
- Insert moulded terminals – mechanical stability.
- Standard ISO terminal foot print.
- Made in North America.



Available Types

Type	Contact Form	Note
G8JR 1A7T R 12DC	SPST	With Supression Resistor
G8JR 1A5T R 12DC	SPST	Mounting Bracket with Resistor

Contact Data

Resistive load (max.)	70A
Inrush current (max.)	150A
Contact resistance	5 m Ohm

Ratings/Specifications

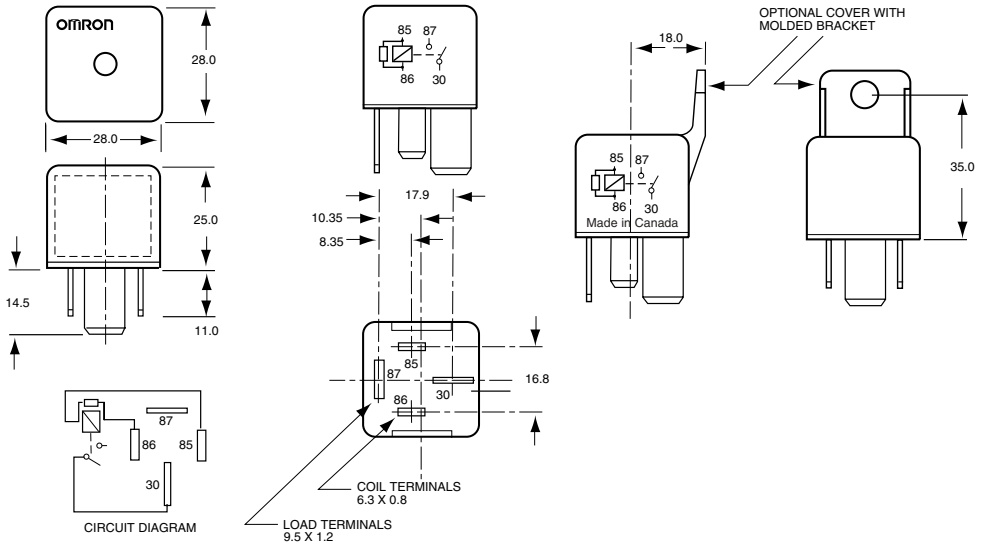
Rated voltage	12VDC	
Operating voltage (max)	16VDC	
Coil Resistance	65 Ohm ± 15%	
Pull in voltage	at +23°C (max)	9.0 VDC
	at +125°C (max)	11.0 VDC
Drop-out voltage at +23°C (min)	1.0 VDC	
Duty cycle at rated load (16VDC at 25°C)	100%	
Operate time (at 23°C)(max)	8.0 ms	
Release time (at 23°C)(max)	4.0 ms	
Operating ambient temperature	-40°C to +135°C	
Mechanical life (min)	1,000,000 cycles	
Electrical life (resistive load) (min)	100,000 cycles	
Weight	40g	

Application Examples

- Engine cooling fan(s)
- Starter motor
- Glow plug

Dimensions

(All dimensions in mm.)



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.