

NC2D-DC5V Datasheet



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| | |
|------------------------------|--|
| DiGi Electronics Part Number | NC2D-DC5V-DG |
| Manufacturer | Panasonic Electric Works |
| Manufacturer Product Number | NC2D-DC5V |
| Description | RELAY GEN PURPOSE DPDT 5A 5V |
| Detailed Description | General Purpose Relay DPDT (2 Form C) 5VDC Coil Socketable |

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Purchase and inquiry

Manufacturer Product Number:

NC2D-DC5V

Series:

NC

Mounting Type:

Socketable

Contact Form:

DPDT (2 Form C)

Switching Voltage:

250VAC - Max

Coil Type:

Non Latching

Termination Style:

Plug In

Coil Insulation:

-

Must Release Voltage:

0.5 VDC

Release Time:

10 ms

Contact Material:

Silver Nickel (AgNi)

Coil Resistance:

69.4 Ohms

Manufacturer:

Panasonic Electric Works

Product Status:

Active

Coil Voltage:

5VDC

Contact Rating (Current):

5 A

Coil Current:

72 mA

Features:

-

Seal Rating:

-

Must Operate Voltage:

4 VDC

Operate Time:

20 ms

Operating Temperature:

-40°C ~ 70°C

Relay Type:

General Purpose

Base Product Number:

NC2D-D

Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8536.41.0020

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

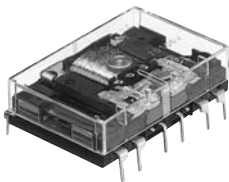
EAR99



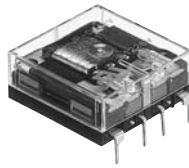
Panasonic
ideas for life

**FLAT/VERTICAL TYPE
HIGH POWER
BIFURCATED CONTACT**

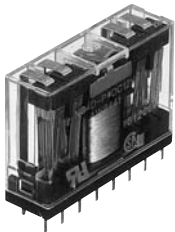
NC RELAYS



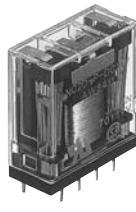
4 Form C Flat type



2 Form C Flat type



4 Form C Slim type
(PC board)



2 Form C Slim type
(PC board)

FEATURES

1. Compact, slim design

Use of high-performance flat electromagnetic design achieves 10.9 mm .429 inch profile, flat type thin package. Slim type, with width of 11.2 mm .441 inch, enables high-density mounting on PC boards.

2. High reliability

Provides stable contact pressure needed for card lift-off contact driver method. The use of Ac clad twin contacts provides stable contact resistance and ensures high contact reliability.

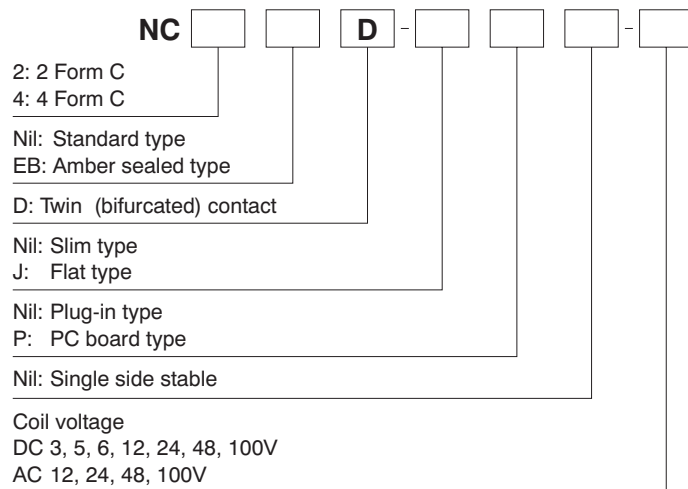
3. Compatible with all major safety standards

UL and CSA certified, and complies with Japanese Electrical Appliance and Material Control Law.

TYPICAL APPLICATIONS

1. Information processing and telecom equipment such as computers and terminal devices.
2. Gas hot air heating equipment and air conditioners.
3. Timer, temperature controller and other equipment that requires form factor reduction.
4. Transmission and measuring devices such as facsimile machines and electronic counting devices.
5. Control panels for industrial equipment such as machine tools, factory automation devices, and NC machines.

ORDERING INFORMATION



Notes: 1. UL/CSA approved type is standard.
2. Amber sealed types are sealed and filled with inert gas (nitrogen gas).
Sealed construction with terminals, case and base sealed shut with sealing resin.

NC

TYPES

<Standard type>

1. Flat type (PC board terminal)

| Contact arrangement | Nominal coil voltage | Single side stable |
|---------------------|----------------------|--------------------|
| | | Part No. |
| 2 Form C | 12V AC | NC2D-JP-AC12V |
| | 24V AC | NC2D-JP-AC24V |
| | 48V AC | NC2D-JP-AC48V |
| | 100V AC | NC2D-JP-AC100V |
| | 3V DC | NC2D-JP-DC3V |
| | 5V DC | NC2D-JP-DC5V |
| | 6V DC | NC2D-JP-DC6V |
| | 12V DC | NC2D-JP-DC12V |
| | 24V DC | NC2D-JP-DC24V |
| | 48V DC | NC2D-JP-DC48V |
| 100V DC | NC2D-JP-DC100V | |
| 4 Form C | 12V AC | NC4D-JP-AC12V |
| | 24V AC | NC4D-JP-AC24V |
| | 48V AC | NC4D-JP-AC48V |
| | 100V AC | NC4D-JP-AC100V |
| | 3V DC | NC4D-JP-DC3V |
| | 5V DC | NC4D-JP-DC5V |
| | 6V DC | NC4D-JP-DC6V |
| | 12V DC | NC4D-JP-DC12V |
| | 24V DC | NC4D-JP-DC24V |
| | 48V DC | NC4D-JP-DC48V |
| 100V DC | NC4D-JP-DC100V | |

Standard packing: Carton: 20 pcs.; Case: 200 pcs.

2. Slim type**1) Plug-in type**

| Contact arrangement | Nominal coil voltage | Single side stable |
|---------------------|----------------------|--------------------|
| | | Part No. |
| 2 Form C | 12V AC | NC2D-AC12V |
| | 24V AC | NC2D-AC24V |
| | 48V AC | NC2D-AC48V |
| | 100V AC | NC2D-AC100V |
| | 3V DC | NC2D-DC3V |
| | 5V DC | NC2D-DC5V |
| | 6V DC | NC2D-DC6V |
| | 12V DC | NC2D-DC12V |
| | 24V DC | NC2D-DC24V |
| | 48V DC | NC2D-DC48V |
| 100V DC | NC2D-DC100V | |
| 4 Form C | 12V AC | NC4D-AC12V |
| | 24V AC | NC4D-AC24V |
| | 48V AC | NC4D-AC48V |
| | 100V AC | NC4D-AC100V |
| | 3V DC | NC4D-DC3V |
| | 5V DC | NC4D-DC5V |
| | 6V DC | NC4D-DC6V |
| | 12V DC | NC4D-DC12V |
| | 24V DC | NC4D-DC24V |
| | 48V DC | NC4D-DC48V |
| 100V DC | NC4D-DC100V | |

Standard packing: Carton: 20 pcs.; Case: 200 pcs.

2) PC board type

| Contact arrangement | Nominal coil voltage | Single side stable |
|---------------------|----------------------|--------------------|
| | | Part No. |
| 2 Form C | 12V AC | NC2D-P-AC12V |
| | 24V AC | NC2D-P-AC24V |
| | 48V AC | NC2D-P-AC48V |
| | 100V AC | NC2D-P-AC100V |
| | 3V DC | NC2D-P-DC3V |
| | 5V DC | NC2D-P-DC5V |
| | 6V DC | NC2D-P-DC6V |
| | 12V DC | NC2D-P-DC12V |
| | 24V DC | NC2D-P-DC24V |
| | 48V DC | NC2D-P-DC48V |
| 100V DC | NC2D-P-DC100V | |
| 4 Form C | 12V AC | NC4D-P-AC12V |
| | 24V AC | NC4D-P-AC24V |
| | 48V AC | NC4D-P-AC48V |
| | 100V AC | NC4D-P-AC100V |
| | 3V DC | NC4D-P-DC3V |
| | 5V DC | NC4D-P-DC5V |
| | 6V DC | NC4D-P-DC6V |
| | 12V DC | NC4D-P-DC12V |
| | 24V DC | NC4D-P-DC24V |
| | 48V DC | NC4D-P-DC48V |
| 100V DC | NC4D-P-DC100V | |

Standard packing: Carton: 20 pcs.; Case: 200 pcs.

<Amber type>

1. Flat type (PC board terminal)

| Contact arrangement | Nominal coil voltage | Single side stable |
|---------------------|----------------------|--------------------|
| | | Part No. |
| 2 Form C | 3V DC | NC2EBD-JP-DC3V |
| | 5V DC | NC2EBD-JP-DC5V |
| | 6V DC | NC2EBD-JP-DC6V |
| | 12V DC | NC2EBD-JP-DC12V |
| | 24V DC | NC2EBD-JP-DC24V |
| | 48V DC | NC2EBD-JP-DC48V |
| | 100V DC | NC2EBD-JP-DC100V |
| 4 Form C | 3V DC | NC4EBD-JP-DC3V |
| | 5V DC | NC4EBD-JP-DC5V |
| | 6V DC | NC4EBD-JP-DC6V |
| | 12V DC | NC4EBD-JP-DC12V |
| | 24V DC | NC4EBD-JP-DC24V |
| | 48V DC | NC4EBD-JP-DC48V |
| | 100V DC | NC4EBD-JP-DC100V |

Standard packing: Carton: 20 pcs.; Case: 200 pcs.

2. Slim type

1) Plug-in type

| Contact arrangement | Nominal coil voltage | Single side stable |
|---------------------|----------------------|--------------------|
| | | Part No. |
| 2 Form C | 3V DC | NC2EBD-DC3V |
| | 5V DC | NC2EBD-DC5V |
| | 6V DC | NC2EBD-DC6V |
| | 12V DC | NC2EBD-DC12V |
| | 24V DC | NC2EBD-DC24V |
| | 48V DC | NC2EBD-DC48V |
| | 100V DC | NC2EBD-DC100V |
| 4 Form C | 3V DC | NC4EBD-DC3V |
| | 5V DC | NC4EBD-DC5V |
| | 6V DC | NC4EBD-DC6V |
| | 12V DC | NC4EBD-DC12V |
| | 24V DC | NC4EBD-DC24V |
| | 48V DC | NC4EBD-DC48V |
| | 100V DC | NC4EBD-DC100V |

Standard packing: Carton: 20 pcs.; Case: 200 pcs.

NC

2) PC board type

| Contact arrangement | Nominal coil voltage | Single side stable |
|---------------------|----------------------|--------------------|
| | | Part No. |
| 2 Form C | 3V DC | NC2EBD-P-DC3V |
| | 5V DC | NC2EBD-P-DC5V |
| | 6V DC | NC2EBD-P-DC6V |
| | 12V DC | NC2EBD-P-DC12V |
| | 24V DC | NC2EBD-P-DC24V |
| | 48V DC | NC2EBD-P-DC48V |
| | 100V DC | NC2EBD-P-DC100V |
| 4 Form C | 3V DC | NC4EBD-P-DC3V |
| | 5V DC | NC4EBD-P-DC5V |
| | 6V DC | NC4EBD-P-DC6V |
| | 12V DC | NC4EBD-P-DC12V |
| | 24V DC | NC4EBD-P-DC24V |
| | 48V DC | NC4EBD-P-DC48V |
| | 100V DC | NC4EBD-P-DC100V |

Standard packing: Carton: 20 pcs.; Case: 200 pcs.

RATING

1. Coil data

1) Single side stable type (AC)

| No. of poles | Nominal coil voltage | Pick-up voltage (at 20°C 68°F) | Drop-out voltage (at 20°C 68°F) | Nominal operating current [$\pm 10\%$] (at 20°C 68°F) | Coil inductance | | Nominal operating power | Max. allowable voltage (at 50°C 122°F) |
|--------------|----------------------|---|---|---|-----------------|----------------|-------------------------|--|
| | | | | | N.C. condition | N.O. condition | | |
| 2 Form C | 12V AC | 80%V or less of nominal voltage (Initial) | 10%V or more of nominal voltage (Initial) | 41.5mA | — | — | 0.50VA | 110%V of nominal voltage |
| | 24V AC | | | 22.5mA | — | — | 0.54VA | |
| | 48V AC | | | 14.0mA | — | — | 0.67VA | |
| | 100V AC | | | 10.5mA | — | — | 1.05VA | |
| 4 Form C | 12V AC | 80%V or less of nominal voltage (Initial) | 10%V or more of nominal voltage (Initial) | 92mA | — | — | 1.10VA | 110%V of nominal voltage |
| | 24V AC | | | 45mA | — | — | 1.08VA | |
| | 48V AC | | | 22.5mA | — | — | 1.08VA | |
| | 100V AC | | | 13.0mA | — | — | 1.30VA | |

2) Single side stable (DC)

| No. of poles | Nominal coil voltage | Pick-up voltage (at 20°C 68°F) | Drop-out voltage (at 20°C 68°F) | Nominal operating current [$\pm 10\%$] (at 20°C 68°F) | Coil resistance [$\pm 10\%$] (at 20°C 68°F) | Nominal operating power | Coil inductance | | Max. allowable voltage (at 50°C 122°F)* |
|--------------|----------------------|---|---|---|---|-------------------------|-----------------|----------------|---|
| | | | | | | | N.C. condition | N.O. condition | |
| 2 Form C | 3V DC | 80%V or less of nominal voltage (Initial) | 10%V or more of nominal voltage (Initial) | 120mA | 25 Ω | 360mW | 24.2mH | 30.0mH | 135%V of nominal voltage |
| | 5V DC | | | 72mA | 69.4 Ω | 360mW | 69.5mH | 86.0mH | |
| | 6V DC | | | 60mA | 100 Ω | 360mW | 99.4mH | 123mH | |
| | 12V DC | | | 30mA | 400 Ω | 360mW | 388mH | 480mH | |
| | 24V DC | | | 15mA | 1,600 Ω | 360mW | 1,590mH | 1,970mH | |
| | 48V DC | | | 7.5mA | 6,400 Ω | 360mW | 6,270mH | 7,680mH | |
| | 100V DC | | | 7.4mA | 13,500 Ω | 740mW | 9,470mH | 11,700mH | 110%V of nominal voltage |
| 4 Form C | 3V DC | 80%V or less of nominal voltage (Initial) | 10%V or more of nominal voltage (Initial) | 240mA | 12.5 Ω | 720mW | 12.8mH | 15.8mH | 110%V of nominal voltage |
| | 5V DC | | | 144mA | 34.7 Ω | 720mW | 34.3mH | 42.4mH | |
| | 6V DC | | | 120mA | 50 Ω | 720mW | 50.7mH | 62.7mH | |
| | 12V DC | | | 60mA | 200 Ω | 720mW | 203mH | 252mH | |
| | 24V DC | | | 30mA | 800 Ω | 720mW | 812mH | 1,000mH | |
| | 48V DC | | | 15mA | 3,200 Ω | 720mW | 2,820mH | 3,480mH | |
| | 100V DC | | | 7.4mA | 13,500 Ω | 740mW | 14,100mH | 17,400mH | |

* At 20°C 68°F (Amber type)

2. Specifications

| Characteristics | Item | Specifications | | | | |
|-----------------------------|--|---|---|---|---|--|
| | | DC | | AC | | |
| | | Single side stable | Single side stable | Single side stable | Single side stable | |
| Contact | Arrangement | 2 Form C | | 4 Form C | | |
| | Initial contact resistance, max. | Max. 50 mΩ (By voltage drop 6 V DC 1A) | | Max. 50 mΩ (By voltage drop 6 V DC 1A) | | |
| | Contact material | Au-clad AgNi type | | Au-clad AgNi type | | |
| Rating | Nominal switching capacity (resistive load) | Standard: 5A 250V AC, 5A 30V DC Amber: 3A 250V AC, 5A 30V DC | | Standard: 4A 250V AC, 5A 30V DC Amber: 2A 250V AC, 5A 30V DC | | |
| | Max. switching power (resistive load) | Standard: 1,250VA, 150W Amber: 750VA, 150W | | Standard: 1,000VA, 150W Amber: 500VA, 150W | | |
| | Max. switching voltage | 250 V AC | | 250 V AC | | |
| | Max. switching current | Standard: 5A Amber: 3A (AC), 5A (DC) | | Standard: 4A Amber: 2A (AC), 5A (DC) | | |
| | Nominal operating power | 360mW (740mW: 100V DC) | 0.50VA to 1.05VA | 720mW*2 | 1.08VA to 1.30VA | |
| | Min. switching capacity (Reference value)*1 | 100μA 1V DC | | 100μA 1VDC | | |
| | Electrical characteristics | Insulation resistance (Initial) | Min. 100MΩ (at 500V DC) Measurement at same location as "Initial breakdown voltage" section. | | Min. 100MΩ (at 500V DC) Measurement at same location as "Initial breakdown voltage" section. | |
| Breakdown voltage (Initial) | | Between open contacts | 1,000 Vrms for 1min. (Detection current: 10mA.) | | 1,000 Vrms for 1min. (Detection current: 10mA.) | |
| | | Between contact sets | 1,000 Vrms for 1min. (Detection current: 10mA.) | | 1,000 Vrms for 1min. (Detection current: 10mA.) | |
| | | Between contact and coil | 2,000 Vrms for 1min. (Detection current: 10mA.) | | 2,000 Vrms for 1min. (Detection current: 10mA.) | |
| Temperature rise | | Max. 65°C [Max. 85°C (100V AC)] (By resistive method, nominal voltage) | | | | |
| Operate time (at 20°C 68°F) | | Max. 20ms | Max. 30ms*3 | Max. 20ms | Max. 30ms*3 | |
| Release time (at 20°C 68°F) | | Max. 10ms | Max. 40ms*3 | Max. 10ms | Max. 40ms*3 | |
| Mechanical characteristics | Shock resistance | Functional | Min. 98 m/s ² (Half-wave pulse of sine wave: 11 ms; detection time: 10μs.) | | | |
| | | Destructive | Min. 980 m/s ² (Half-wave pulse of sine wave: 6 ms.) | | | |
| | Vibration resistance | Functional | 10 to 55 Hz at double amplitude of 1 mm (Detection time: 10μs.) | | | |
| Destructive | | 10 to 55 Hz at double amplitude of 2 mm | | | | |
| Expected life | Mechanical | Min. 5×10 ⁷ | Min. 10 ⁷ | Min. 5×10 ⁷ | Min. 10 ⁷ | |
| | Electrical (resistive load) | Standard: Min. 10 ⁵ (5A 250V AC), Min. 5×10 ⁵ (5A 30V DC) Amber: Min. 10 ⁵ (3A 250V AC), Min. 5×10 ⁵ (5A 30V DC) | | Standard: Min. 10 ⁵ (4A 250V AC), Min. 5×10 ⁵ (5A 30V DC) Amber: Min. 10 ⁵ (2A 250V AC), Min. 5×10 ⁵ (5A 30V DC) | | |
| Conditions | Conditions for operation, transport and storage*4 (Not freezing and condensing at low temperature) | -40°C to +70°C -40°F to +158°F (Max.48V DC), -40°C to +55°C -40°F to +131°F (100V DC) | -40°C to +60°C -40°F to +140°F*5 | -40°C to +55°C -40°F to +131°F | -40°C to +40°C -40°F to +104°F | |
| | Max. Operating speed | 50 cps | | 50 cps | | |
| Unit weight | 16 g .56 oz | | 18 g .63 oz | | | |

Notes: *

*1 This value can change due to the switching frequency, environmental conditions, and desired reliability level, therefore it is recommended to check this with the actual load.

*2. 100V DC: 740mW

*3. For the AC type, the operate and release time differs depending on the phase of the input and cutoff times.

*4. Refer to "6. Usage, Storage and Transport Conditions" in [AMBIENT ENVIRONMENT section in Relay Technical Information](#).

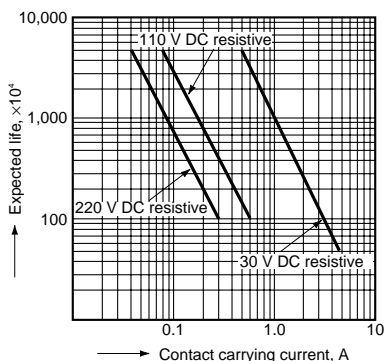
*5. 100V DC: -40°C to +40°C -40°F to +104°F

NC

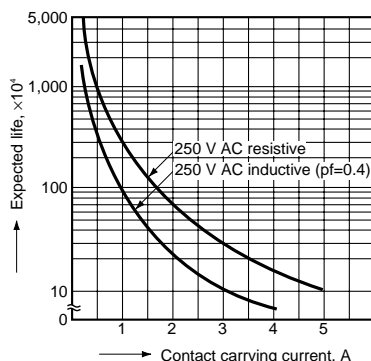
REFERENCE DATA (Standard type)

1.-(1) Life curve

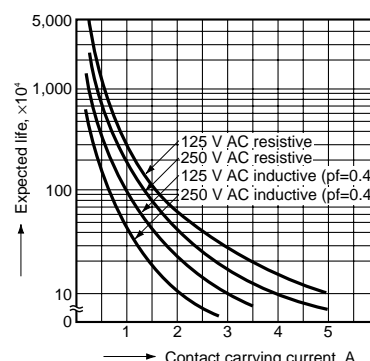
(AC/DC load 2 Form C, 4 Form C)



1.-(2) Life curve (AC/DC load 2 Form C)

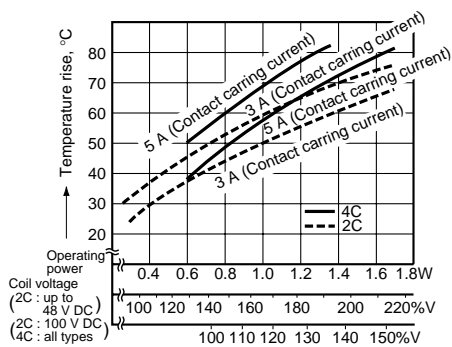


1.-(3) Life curve (AC/DC load 4 Form C)

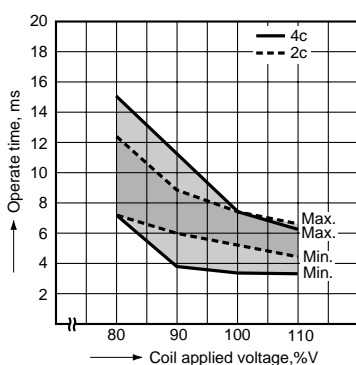


2. Temperature rise characteristics (single side stable)

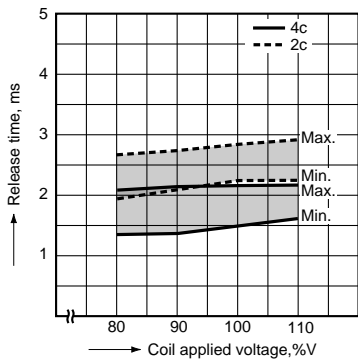
Measured portion: Inside the coil



3. Operate time (single side stable)

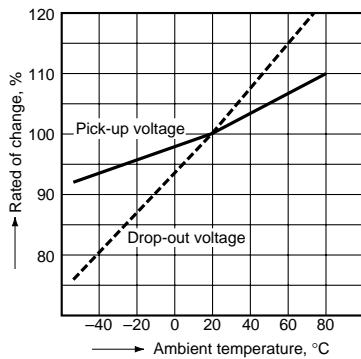


4. Release time (single side stable)



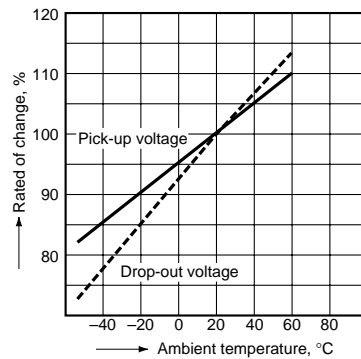
5.-(1) Rate of change of pick-up and drop-out voltage

(2 Form C single side stable)



5.-(2) Rate of change of pick-up and drop-out voltage

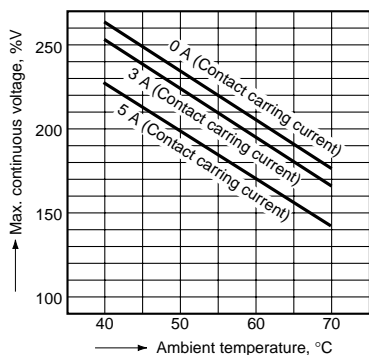
(4 Form C single side stable)



6.-(1) Ambient temperature vs Max. continuous voltage

Tested sample:

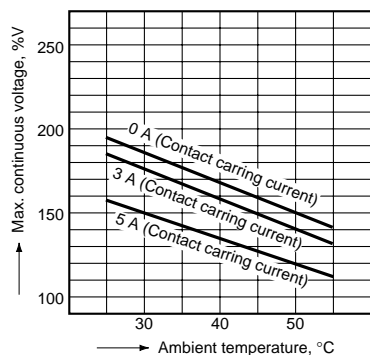
NC2D-P-DC24 V (2 Form C slim single side stable)



6.-(2) Ambient temperature vs Max. continuous voltage

Tested sample:

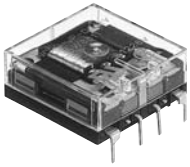
NC2D-P-DC110 V (2 Form C slim single side stable),
NC4D-P-DC24 V (4 Form C slim single side stable)



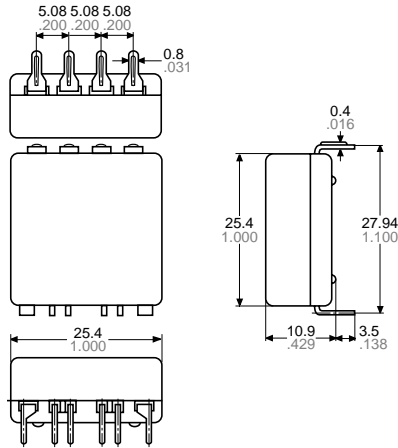
DIMENSIONS (Unit: mm inch)

<Standard type>

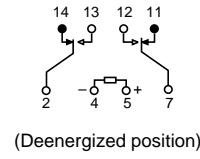
Flat type
2 Form C



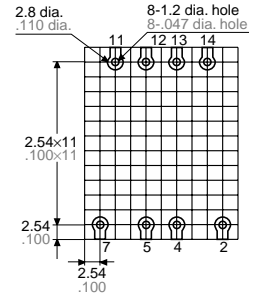
External dimensions



Schematic (Top view)
Single side stable

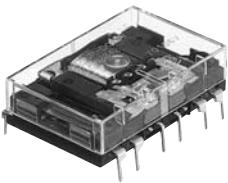


PC board pattern (Bottom view)
Single side stable

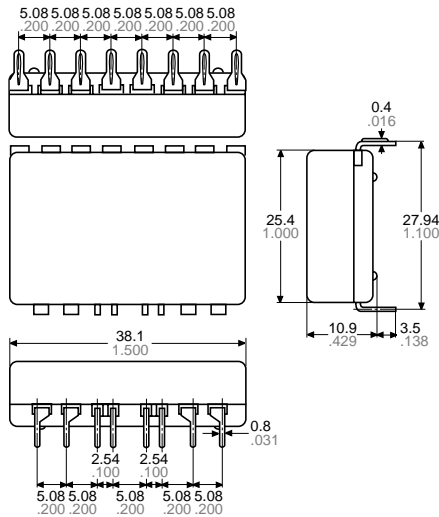


Note: Single side stable types do not have terminals 3 and 6.

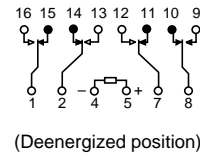
Flat type
4 Form C



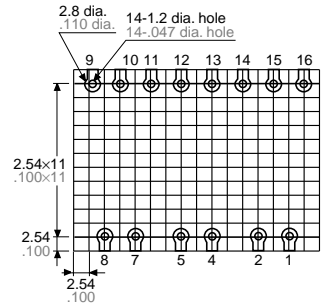
External dimensions



Schematic (Top view)
Single side stable



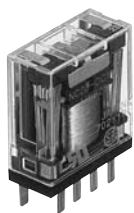
PC board pattern (Bottom view)
Single side stable



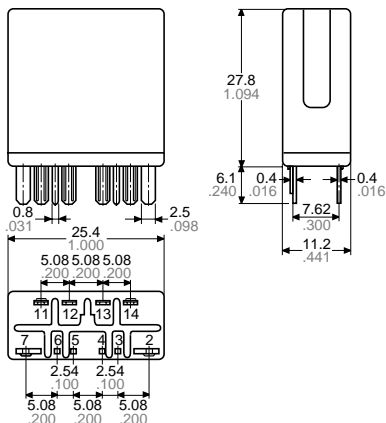
Note: Single side stable types do not have terminals 3 and 6.

NC

Slim type
Plug-in type
2 Form C

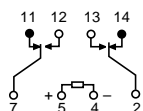


External dimensions



Schematic (Bottom view)

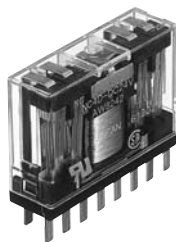
Single side stable



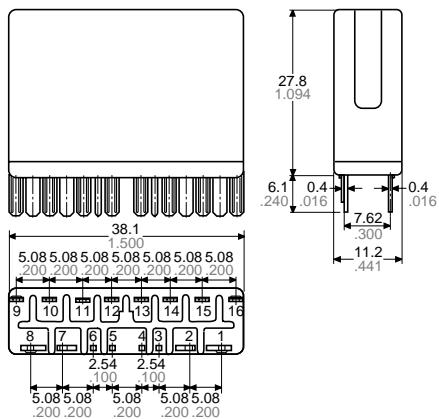
(Deenergized position)

Note: Single side stable types do not have terminals 3 and 6.

Slim type
Plug-in type
4 Form C

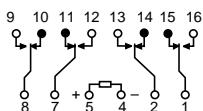


External dimensions



Schematic (Bottom view)

Single side stable



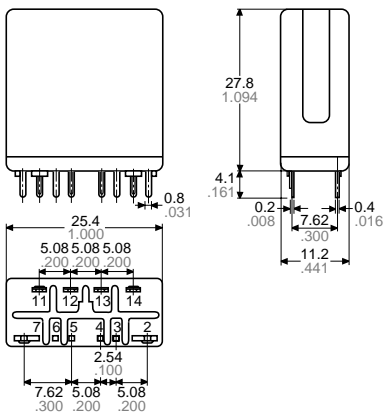
(Deenergized position)

Note: Single side stable types do not have terminals 3 and 6.

Slim type
PC board type
2 Form C



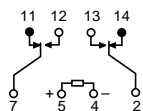
External dimensions



(Dowel height: 0.4 .016)

Schematic (Bottom view)

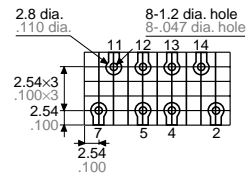
Single side stable



(Deenergized position)

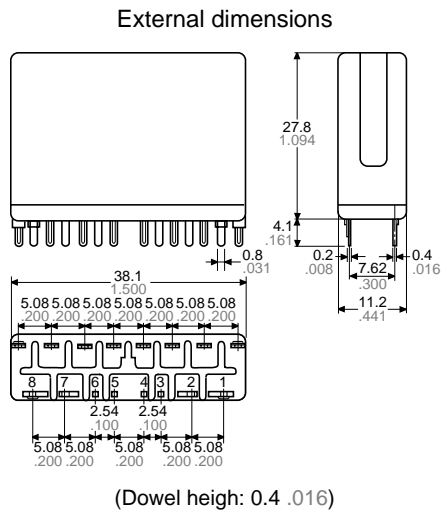
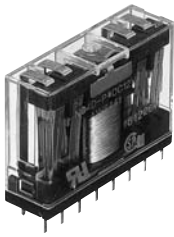
PC board pattern (Bottom view)

Single side stable

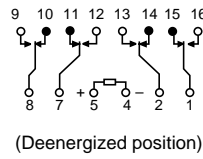


Note: Single side stable types do not have terminals 3 and 6.

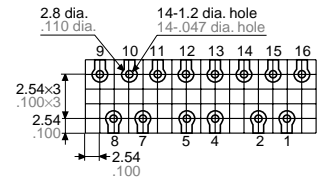
Slim type
PC board type
4 Form C



Schematic (Bottom view)
Single side stable



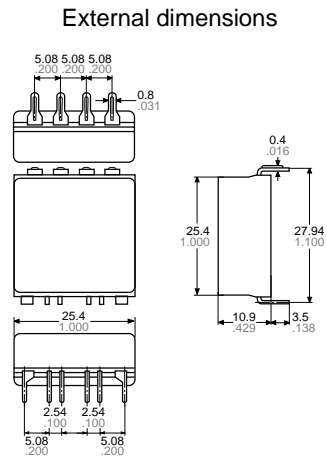
PC board pattern (Bottom view)
Single side stable



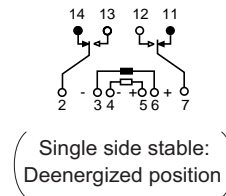
Note: Single side stable types do not have terminals 3 and 6.

<Amber sealed type>

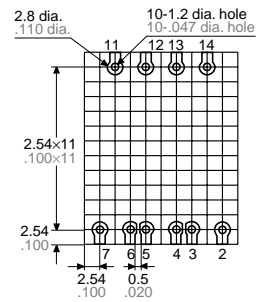
Flat type
2 Form C



Schematic (Top view)

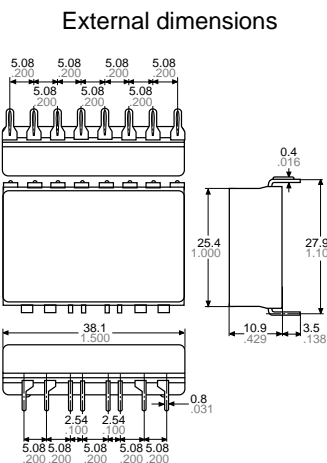


PC board pattern (Bottom view)

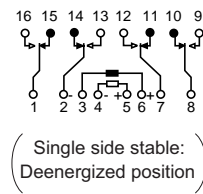


Note: Single side stable types do not have terminals 3 and 6.

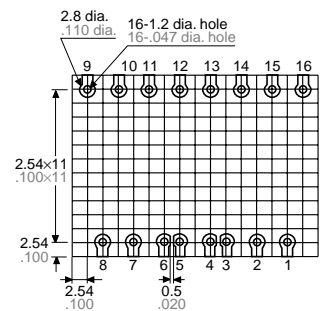
Flat type
4 Form C



Schematic (Top view)



PC board pattern (Bottom view)



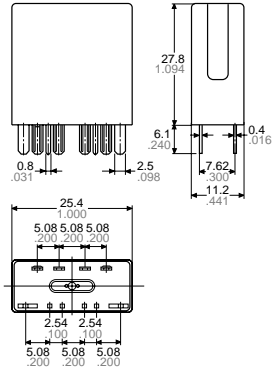
Note: Single side stable types do not have terminals 3 and 6.

NC

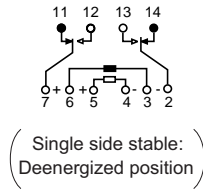
Slim type
Plug-in type
2 Form C



External dimensions



Schematic (Bottom view)

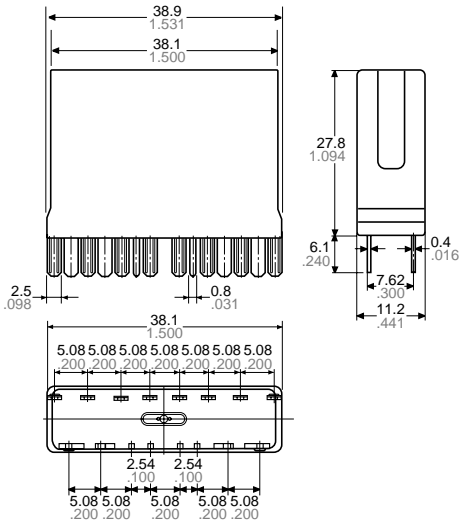


Note: Single side stable types do not have terminals 3 and 6.

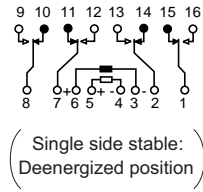
Slim type
Plug-in type
4 Form C



External dimensions



Schematic (Bottom view)

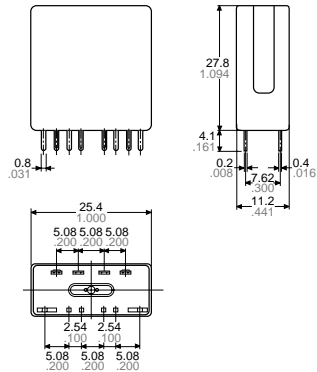


Note: Single side stable types do not have terminals 3 and 6.

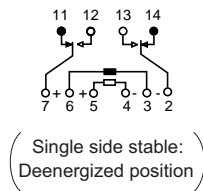
Slim type
PC board type
2 Form C



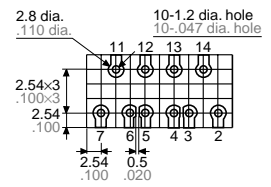
External dimensions



Schematic (Bottom view)

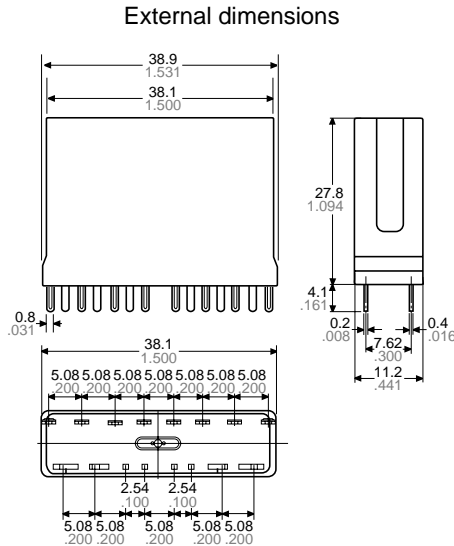


PC board pattern (Bottom view)

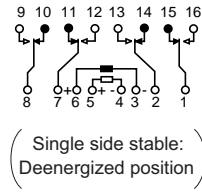


Note: Single side stable types do not have terminals 3 and 6.

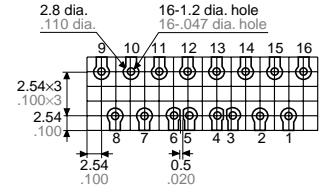
Slim type
PC board type
4 Form C



Schematic (Bottom view)



PC board pattern (Bottom view)



Note: Single side stable types do not have terminals 3 and 6.

NOTES

1. Because the NC relay is polarized, the positive “+” and negative “-” connections to the coil should be done as indicated on the wiring diagram. If connected incorrectly, it may malfunction or fail to operate.
2. As a 2 coil latching series 4 Form C are for intermittent operation only. Power should be applied to coils continuously for no more than two minutes. See page 30 for general cautions to be observed regarding latching relays.
3. To maintain insulation between coils of 2 coil latching series, terminals ⑤ and ⑥ for flat series, and terminals ③ and ④ for vertical series should be connected to provide common return.

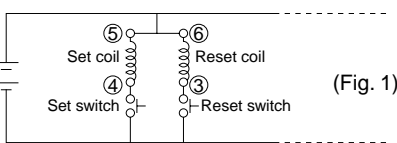
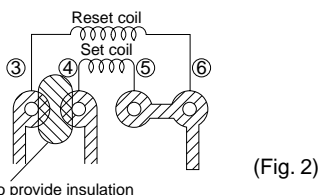
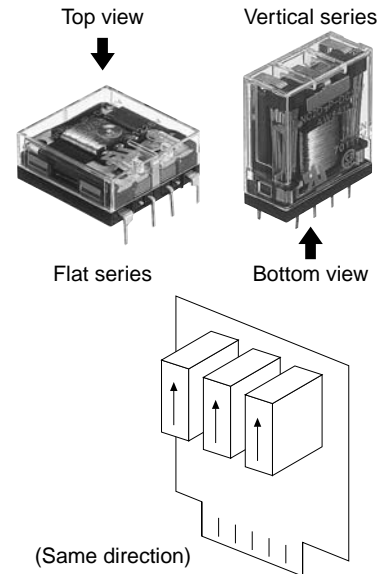


Figure 1 shows wiring that complies with Japanese Electrical Appliance and Material Control Law stipulations for power supply circuits. At the copper traces on PC boards, between terminals ③ and ④, as shown in Figure 2, apply epoxy resin (to thickness of more than 3 mm) or similarly adhesive to provide insulation.



4. 2 coil latching series 4 Form C are for intermittent operation only. Power should be applied to coils continuously for no more than two minutes.
5. While NC relays can be used with any transmission-wave current to their operation, due to slight weakening of the force of magnetic attraction, decreased resistance to vibration and shock should be taken into account.
6. The current that energizes the coil in an NC relay is AC type. Because the AC sine waveform is distorted, when testing, it is essential to use a measuring device that can properly characterize the distorted waveform. The operating power of the coil in the 100 V AC 4 Form C type is relatively higher than other NC types of AC relay and consequently, the total current applied through all the contacts should be kept below 10 A.
7. The AC type NC relay has a special magnetic design. As a result, once the a-side contacts have switched, the b-side contacts may once again go into a temporary ON state depending on the coil inrush phase. To ensure that this phenomenon does not occur, it is necessary to carry out sufficient practical testing with relays installed in actual devices.

8. When designing top and bottom view schematic diagrams, note that:
 - 1) “Top view” wiring diagram is indicated for the flat series because terminals can be seen from above.
 - 2) “Bottom view” schematic diagram is indicated for the vertical series because terminals cannot be seen from above.



9. Cautions for close proximity mounting
When using slim series in close proximity, mount all relays facing the same direction. Different mounting directions may cause change in the relay characteristics because NC relays are polarized.

For Cautions for Use, see [Relay Technical Information](#).

Panasonic
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ACCESSORIES

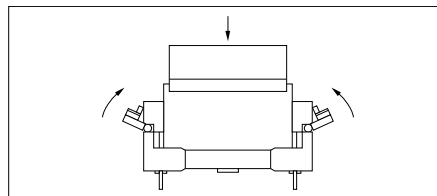
NC RELAYS
(sockets and terminal sockets)

FEATURES

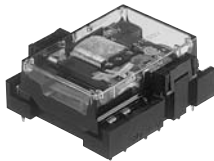
• **Socket**

1) The vertical (slim) type with solder terminals has a retainer, which enables snap-in fixing on chassis, panels, and similar locations. Because the sockets for both solder terminals and PC boards firmly fix the relay at the time of insertion, once snapped in, spring clips are unnecessary.

2) For the flat type, pull up the hinged clasps in the direction of the arrows shown in the drawing after inserting the relay. Spring clips are unnecessary.



NC2 Flat type socket



NC4 Flat type socket



NC2 Slim type socket



NC4 Slim type socket



NC2 DIN terminal socket

TYPES

| | Product name | Terminals | Part No. |
|---------------------------|--|-----------|-----------|
| Flat type socket | NC2-flat type PC board socket | P/C board | NC2-JPS |
| | NC2-flat, 2 coil latching type PC board socket | P/C board | NC2-JPL2S |
| | NC4-flat type PC board socket | P/C board | NC4-JPS |
| | NC4-flat, 2 coil latching type PC board socket | P/C board | NC4-JPL2S |
| Slim type terminal socket | NC2-DIN terminal socket | DIN rail | NC2-SFD |
| Slim type socket | NC2-slim type socket | Solder | NC2-SS |
| | NC2-slim, 2 coil latching type socket | Solder | NC2-LS2 |
| | NC2-slim type PC board socket | P/C board | NC2-PS |
| | NC2-slim, 2 coil latching type PC board socket | P/C board | NC2-L2P |
| | NC2-slim type wrapping socket | Lead wire | NC2-WS |
| | NC2-slim, 2 coil latching type wrapping socket | Lead wire | NC2-LSWS |
| | NC4-slim type socket | Solder | NC4-SS |
| | NC4-slim, 2 coil latching type socket | Solder | NC4-LS2 |
| | NC4-slim type PC board socket | P/C board | NC4-PS |
| | NC4-slim, 2 coil latching type PC board socket | P/C board | NC4-L2P |
| | NC4-slim type wrapping socket | Lead wire | NC4-WS |
| | NC4-slim, 2 coil latching type wrapping socket | Lead wire | NC4-LSWS |

SPECIFICATIONS (common)

| Item | Specifications |
|-------------------------------|---|
| Max. continuous current | Slim type: 5A 250V AC, Flat type: 5A 250V AC |
| Initial breakdown voltage | 2,000 V AC (Except for coil to coil of L2 type: 1,500 V AC) |
| Initial insulation resistance | Min. 100MΩ (at 500V DC megger) |
| Heat resistance | 150°C 302°F for 1 hour |

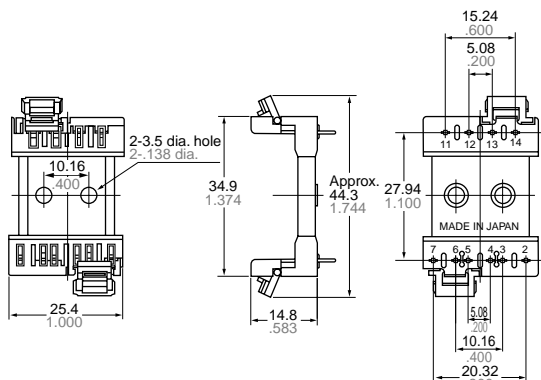
Note: Do not insert or remove relays while in the energized condition.

DIMENSIONS (Unit: mm inch)

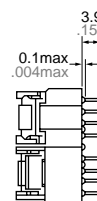
Flat type socket for PC board
 NC2-JPS
 NC2-JPL2S



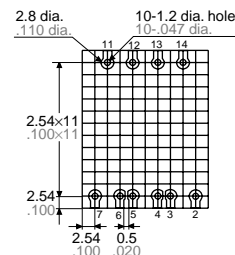
External dimensions



Terminal portion



PC board pattern

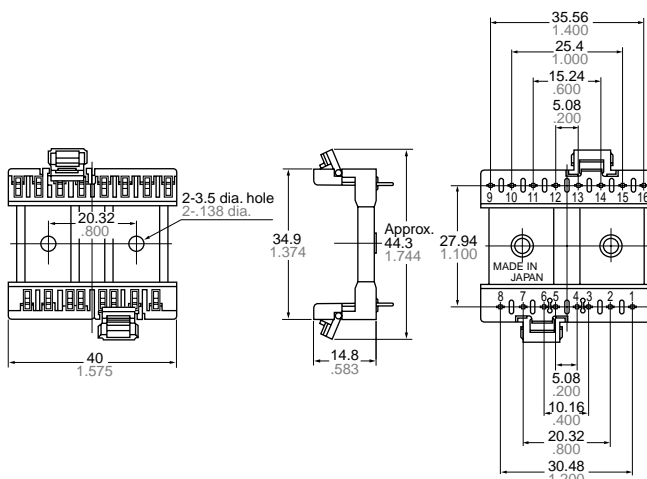


Note: Terminals 3 and 6 excluded for NC2-JPS.

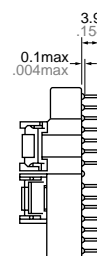
Flat type socket for PC board
 NC4-JPS
 NC4-JPL2S



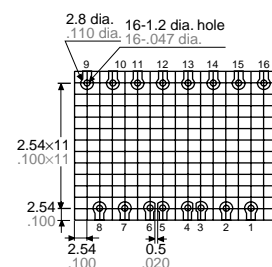
External dimensions



Terminal portion

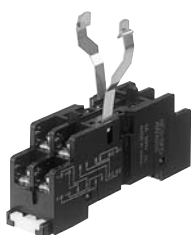


PC board pattern

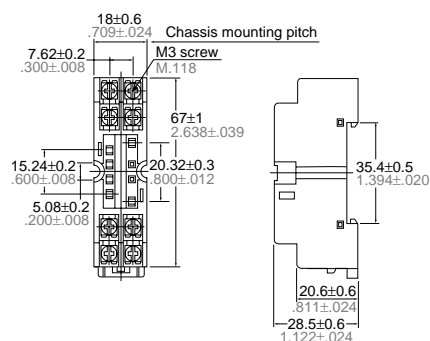


Note: Terminals 3 and 6 excluded for NC4-JPS.

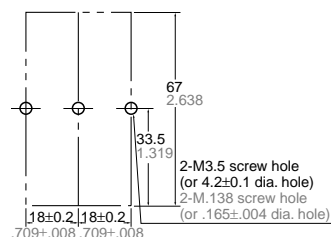
Slim type DIN terminal socket
 NC2-SFD



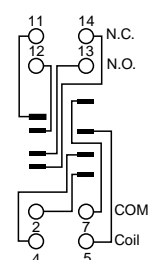
External dimensions



Mounting hole diagram



Schematic



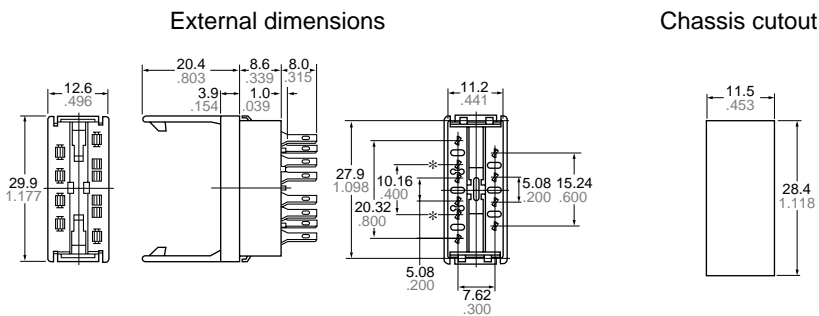
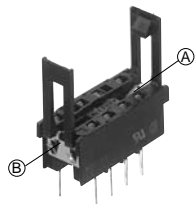
(Retaining springs are included with the DIN terminal socket.)

*To prevent damage or distortion, when tightening fixing screws, the optimum torque range should be 0.49 to 0.69 N·m, (5 to 7 kgf·cm).

NC

Slim type socket for solder terminal

NC2-SS
NC2-L2S

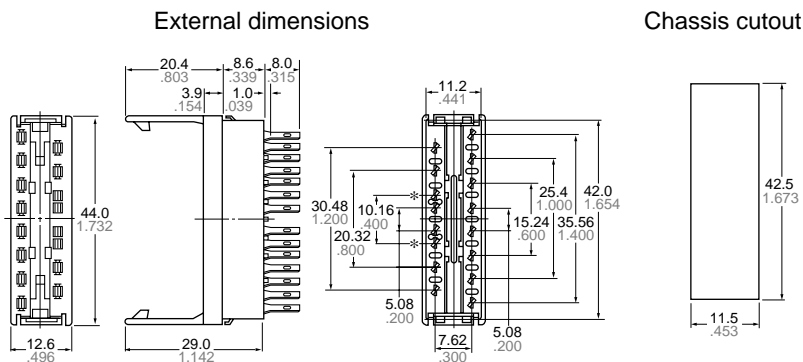
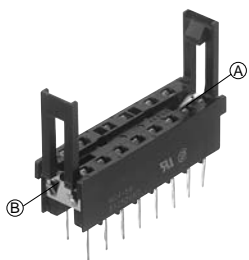


- Notes: 1. Suitable chassis thickness is 1.0 to 2.0 mm .039 to .079 inch.
2. Once the socket is inserted from above into the mounting holes, the relay will snap in to clips rising from either side at (A) and (B) by pushing.

Note: NC2-SS is as shown in the diagram above except that terminals marked with "*" are not present.

Slim type socket for solder terminal

NC4-SS
NC4-L2S

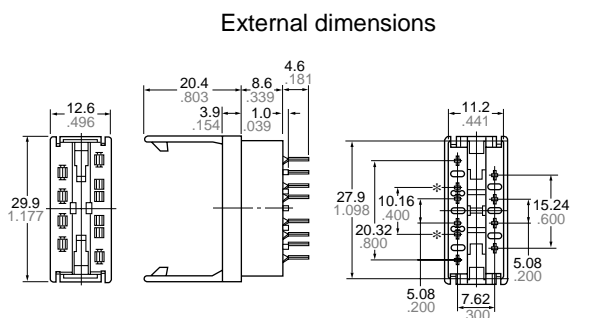


- Notes: 1. Suitable chassis thickness is 1.0 to 2.0 mm .039 to .079 inch.
2. Once the socket is inserted from above into the mounting holes, the relay will snap in to clips rising from either side at (A) and (B) by pushing.

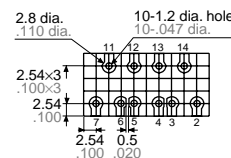
Note: NC4-SS is as shown in the diagram above except that terminals marked with "*" are not present.

Slim type socket for PC board

NC2-PS
NC2-L2P



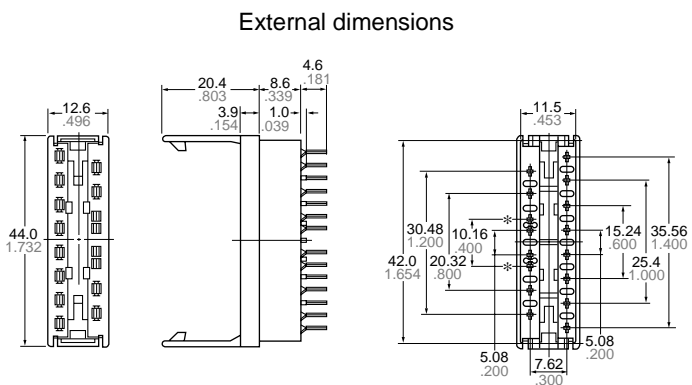
PC board pattern



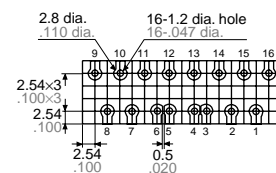
Note: NC2-PS is as shown in the diagram at left except that terminals marked with "*" are not present.

Slim type socket for PC board

NC4-PS
NC4-L2P



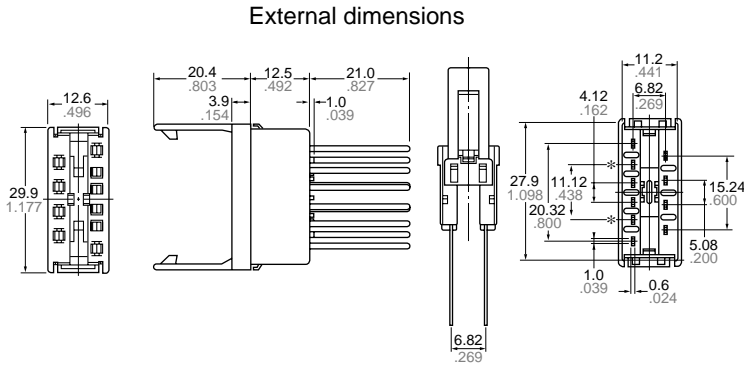
PC board pattern



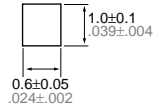
Note: NC4-PS is as shown in the diagram at left except that terminals marked with "*" are not present.

Vertical (Slim) type wrapping socket

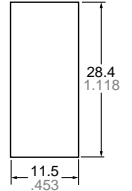
NC2-WS
NC2-L2WS



Terminal cross section



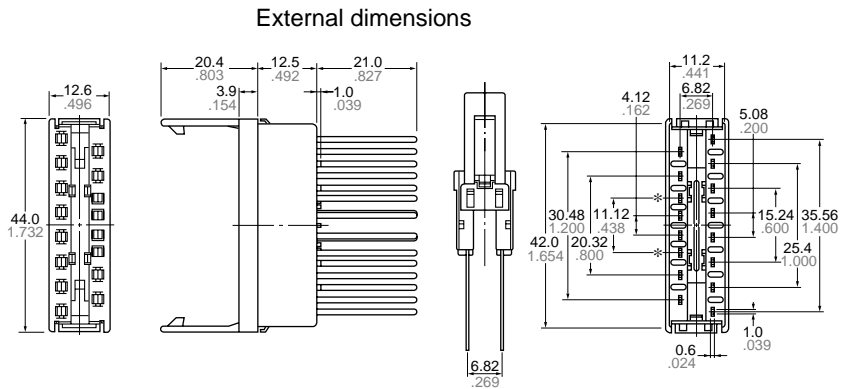
Chassis cutout



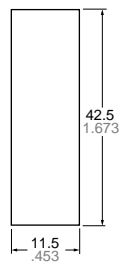
Note: NC2-WS is as shown in the diagram above except that terminals marked with " * " are not present.

Vertical (Slim) type wrapping socket

NC4-WS
NC4-L2WS



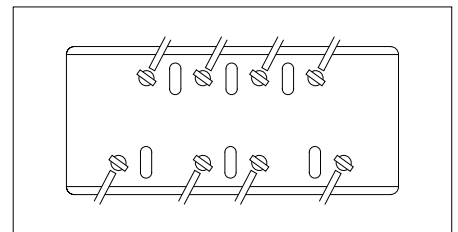
Chassis cutout



Note: NC4-WS is as shown in the diagram above except that terminals marked with " * " are not present.

NOTES

1. Soldering should be done quickly to avoid damaging the thermoplastic body.
2. For solder terminal types, connect terminals as shown in the diagram at



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