

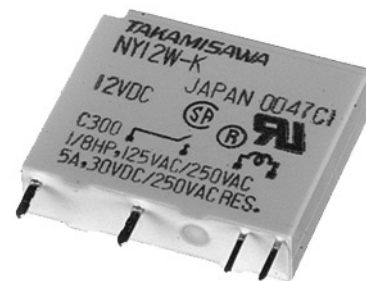
# POWER RELAY

## 1 POLE - 5A Slim Type

### NY Series

#### ■ FEATURES

- Slim type with 5 mm thickness
    - Suited for high density mounting
  - Low power consumption and high sensitivity
    - Nominal coil power: 120 mW
    - Operating power: 54 mW
  - UL and CSA recognized
  - High insulation
    - Surge voltage: 5,080V
    - Dielectric strength: 3,000VAC (coil and contacts)
  - SIL pitch terminals
  - Plastic sealed type, RTIII
  - Compatible with solid state I/O module type SN in size and pin (terminal) arrangement
  - Environmentally friendly cadmium free contact type
  - RoHS compliant.
- Please see page 6 for more information



#### ■ PARTNUMBER INFORMATION

[Example]      NY   P   -   12   W   -   K   -   IE  
                          (a) (b) (\*) (c) (d)    (e) (\*) (f)

(a)	Relay type	NY	: NY-Series
(b)	Mounting type	Nil P	: PCB board mounting type : Socket mounting type
(c)	Coil rated voltage	12	: 4.5.....24 VDC Coil rating table at page 3
(d)	Contact design	W	: Bifurcated contact
(e)	Enclosure	K	: Plastic sealed type, RTIII
(f)	Insulation	IE	: Conform to IEC standard

Note: Actual marking omits the hyphen (-) and IE of (\*)

## ■ SPECIFICATION

Item			NY	Remarks / Conditions
Contact Data	Configuration		1 form A (SPST-NO)	
	Construction		Bifurcated	
	Material		Gold overlay silver alloy (AgNi + Au)	
	Resistance (initial)		Max. 30 mΩ at 6 VDC, 1 A	
	Contact rating		5A, 250VAC / 30VDC	
	Max. carrying current		5A	
	Max. switching voltage		270VAC / 125 VDC	
	Max. switching power		1,250VA / 150W	
	Max. switching current		5A	
	Min. switching load *		1 mA, 5 VDC	
Life	Mechanical		Min. 20 x 10 <sup>6</sup> operations	
	Electrical		Min. 100 x 10 <sup>3</sup> operations (at 3A, 250VAC, 30VDC resistive) Min. 50 x 10 <sup>3</sup> operations (at 5A, 250VAC, 30VDC resistive)	
Coil Data	Rated power (at 20 °C)		120 mW	
	Operate power (at 20 °C)		54 mW	
	Operating temperature range		-40 °C to +90 °C (no frost)	
Timing Data	Operate (at nominal voltage)		Max. 10 ms (without bounce)	
	Release (at nominal voltage)		Max. 5 ms (without bounce)	
Insulation	Resistance (initial)		Min. 1,000MΩ at 500VDC	
	Dielectric strength	Open contacts	750VAC, 1min	
		Contacts to coil	3,000VAC, 1min	
	Surge strength	Coil to contacts	5,080V / 1.2 x 50μs standard wave	
	Clearance		Min. 3mm	
Creepage		Min. 3mm		
Other	Vibration resistance	Misoperation	10 to 55 to 10Hz single amplitude 0.75mm	Coil ON/OFF, 3 axes, total 6 cycles
		Endurance	10 to 55 to 10Hz single amplitude 0.25mm	Coil OFF, 3 axes, total 6 hours
	Shock	Misoperation	Min. 100m/s <sup>2</sup> (11 ± 1ms)	Coil ON/OFF, 3 axes, total 36 operations
		Endurance	Min. 1,000m/s <sup>2</sup> (6 ± 1ms)	Coil OFF, 3 axes, total 18 operations
	Weight		Approximately 3.5 g	
	Sealing		Plastic sealed, RTIII	

\* Minimum switching loads mentioned above are reference values. Please perform the confirmation test with actual load before production since reference values may vary according to switching frequencies, environmental conditions and expected reliability levels.

## ■ COIL RATING

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release-Voltage (VDC) *	Rated Power (mW)
4.5	4.5	169	3	0.45	120
5	5	208	3.35	0.5	
6	6	300	4	0.6	
9	9	675	6	0.9	
12	12	1,200	8	1.2	
18	18	2,700	12.1	1.8	
24	24	4,800	16.1	2.4	

Note: All values in the table are valid for 20°C and zero contact current.

\* Specified operate values are valid for pulse wave voltage.

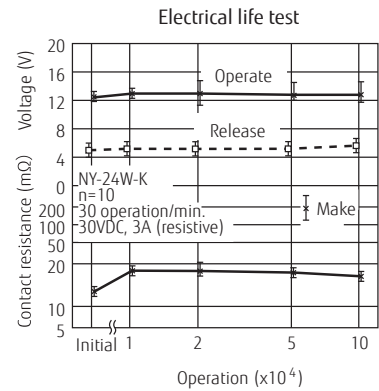
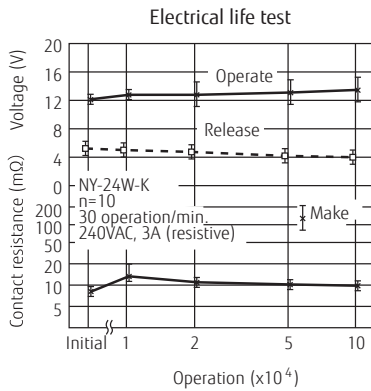
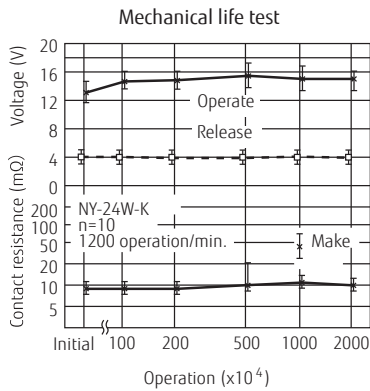
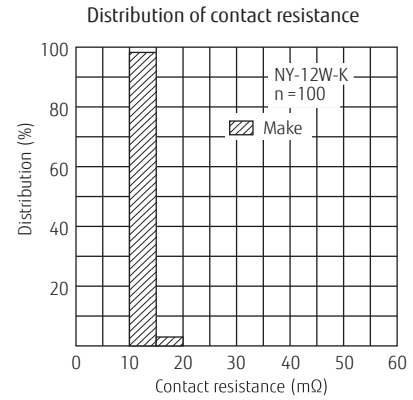
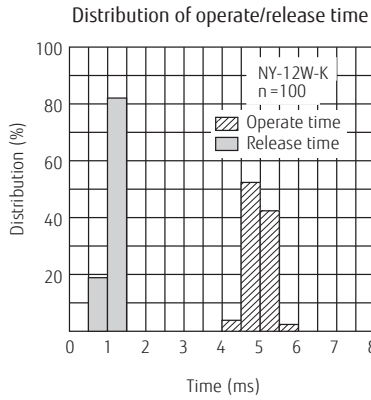
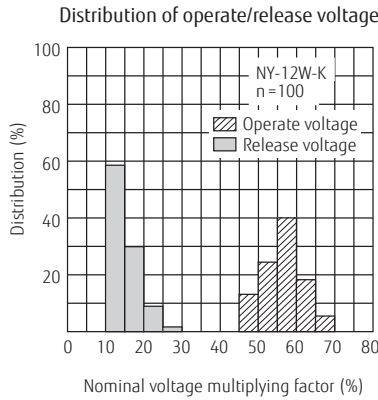
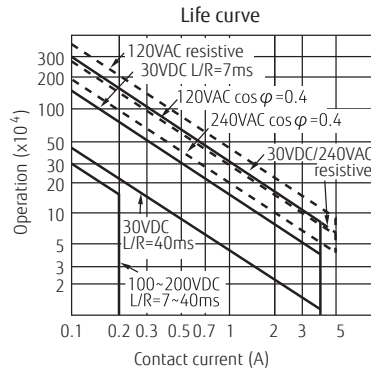
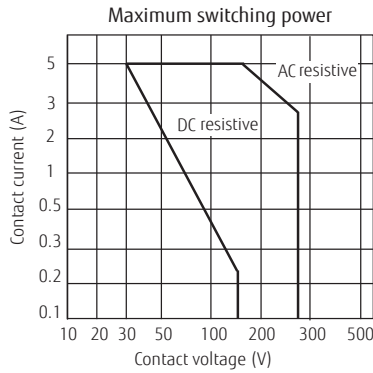
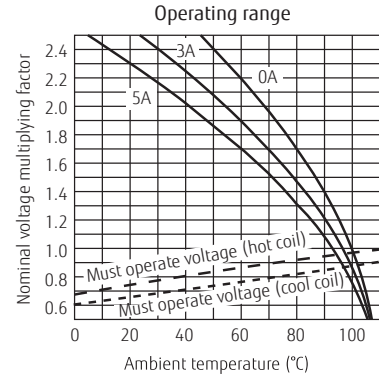
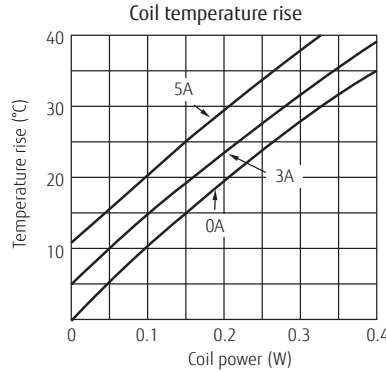
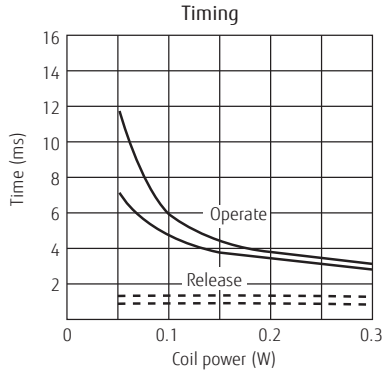
Please use at rated coil voltage. Please refer to characteristic data and set up adequate voltage in case of use at over voltage.

## ■ SAFETY STANDARDS

Type	Compliance	Contact rating
UL	UL 508 ANSI/ISA12.12.01 E56140, E199193	Flammability: UL 94-V0 (plastics)
		3A, 250VAC/30VDC (General use) 5A, 250VAC/30VDC (resistive)
CSA	C22.2 No. 14 LR 35579	1/8 HP, 250VAC/125VAC Pilot duty: C300, D150, R300

## CHARACTERISTIC DATA

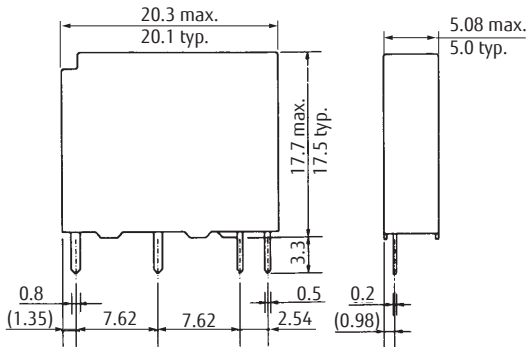
(Characteristic data is not guaranteed value but measured values of samples from production line.)



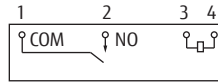
## ■ DIMENSIONS

### NY type

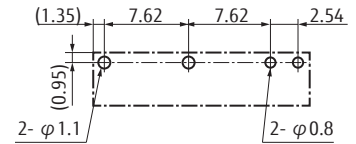
#### ● Dimensions



#### ● Schematics

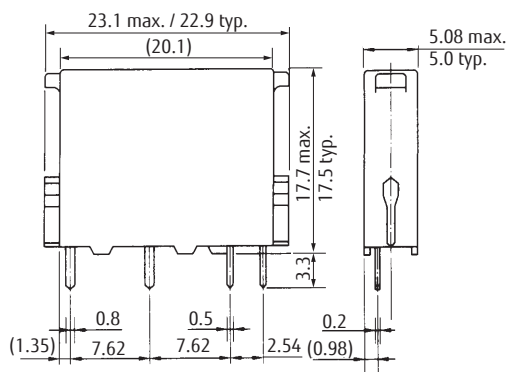


#### ● PC board mounting hole layout (BOTTOM VIEW)

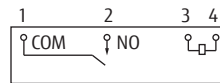


### NYP type

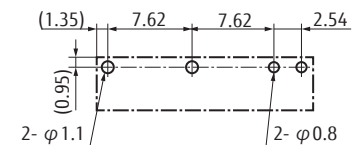
#### ● Dimensions



#### ● Schematics

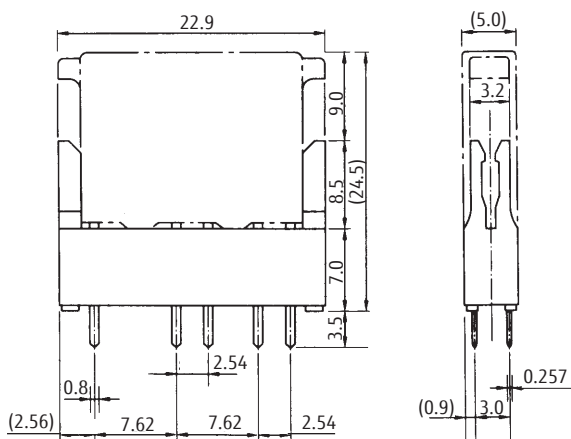


#### ● PC board mounting hole layout (BOTTOM VIEW)

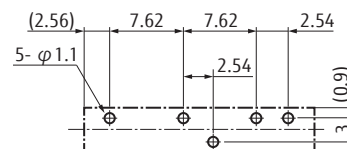


### Socket type JL-5N

#### ● Dimensions



#### ● PC board mounting hole layout (BOTTOM VIEW)



Unit: mm

Note: Dimensions do not include tolerances.

Note: Dimensions of the terminals do not include thickness of pre-solder.

Note: Tolerance for PC board mounting hole/pad layout: +/-0.1.

## CAUTIONS

- All values mentioned in this datasheet are provided under ideal conditions. Please perform the confirmation test before actual use.
- Reflow soldering is prohibited.
- Do not use relays in the atmosphere with sulfide gas, chloride gas or nitric oxide. Contact resistance may increase.
- Do not use silicon or silicon-containing product or materials near relays. It may cause contact failure.

## GENERAL INFORMATION

### 1. ROHS Compliance

- All relays produced by Fujitsu Components are compliant with RoHS directive 2011/65/EU, including commission delegated directive 2015/863.

### 2. Recommended lead free solder condition

- Lead free solder plating on relay terminals is Sn-3.0Ag-0.5Cu, unless otherwise specified. This material has been verified to be compatible with PbSn assembly process.
- Recommended solder for assembly: Sn-3.0Ag-0.5Cu.

#### Flow Solder Condition:

Pre-Heating: maximum 120°C  
within 90 sec.  
Soldering: dip within 5 sec. at 255°C±5°C solder bath

Relay must be cooled by air immediately after soldering

#### Solder by Soldering Iron:

Soldering Iron: 30-60W  
Temperature: maximum 340-360°C  
Duration: maximum 3 sec.

**We highly recommend that you confirm your actual solder conditions**

### 3. Moisture Sensitivity

- Moisture Sensitivity Level standard is not applicable to electromechanical relays, unless otherwise indicated.

### 4. Tin Whiskers

- Dipped SnAgCu solder is known as presenting a low risk to tin whisker development. No considerable length whisker was found by our in house test.

## Fujitsu Components International Headquarter Offices

<p><b>Japan</b>            FUJITSU COMPONENT LIMITED            Shinagawa Seaside Park Tower 19F,            12-4, Higashi-shinagawa 4-chome, Shinagawa-ku,            Tokyo,140-0002, Japan            Tel: (81-3) 3450-1682            Fax: (81-3) 3474-2385            Email: fcl-contact@cs.jp.fujitsu.com            Web: www.fujitsu.com/jp/fcl/</p>	<p><b>Asia Pacific</b>            FUJITSU COMPONENTS ASIA, LTD.            102E Pasir Panjang Road            #01-01 Citilink Warehouse Complex            Singapore 118529            Tel: (65) 6375-8560            Fax: (65) 6273-3021            Email: fcal@sg.fujitsu.com            Web: www.fujitsu.com/sg/products/devices/components</p>	<p><b>Korea</b>            FUJITSU COMPONENTS KOREA LIMITED            Alpha Tower #403, 645 Sampyeong-dong,            Bundang-gu, Seongnam-si, Gyeonggi-do,            13524 Korea            Tel: (82) 31-708-7108            Fax: (82) 31-709-7108            Email: fcal@sg.fujitsu.com            www.fujitsu.com/sg/products/devices/components/</p>
<p><b>North and South America</b>            FUJITSU COMPONENTS AMERICA, INC            1230 E. Arques Ave. M/S 160            Sunnyvale, CA. 94085, USA            Tel: (1-408) 745-4900            Fax: (1-408) 745-4970            Email: components@us.fujitsu.com            Web: us.fujitsu.com/components</p>	<p><b>China</b>            FUJITSU ELECTRONIC COMPONENTS (SHANGHAI) CO., LTD.            Unit 4306, InterContinental Center            100 Yu Tong Road, Shanghai 200070,            China            Tel: (86-21) 3253 0998            Fax: (86-21) 3253 0997            Email: fcsch@cn.fujitsu.com            Web: www.fujitsu.com/cn/products/devices/components/</p>	
<p><b>Europe</b>            FUJITSU COMPONENTS EUROPE B.V.            Diamantlaan 25            2132 WV Hoofddorp            Netherlands            Tel: (31-23) 5560910            Fax: (31-23) 5560950            Email: info@fceu.fujitsu.com            Web: www.fujitsu.com/uk/components</p>	<p><b>Hong Kong</b>            FUJITSU COMPONENTS HONG KONG CO., LTD            Unit 506, Inter-Continental Plaza            No.94 Granville Road, Tsim Sha Tsui, Kowloon,            Hong Kong            Tel: (852) 2881-8495            Fax: (852) 2894-9512            Email: fcal@sg.fujitsu.com            Web: www.fujitsu.com/sg/products/devices/components/</p>	

© 2020 Fujitsu Components Europe B.V. All rights reserved. All trademarks or registered trademarks are the property of their respective owners.

Fujitsu Products are intended for general use, including without limitation, in personal, household and office environments, in buildings and for ordinary use in the industry. Fujitsu Products are not intended to be used in applications where extremely high safety is required ("High Safety Required Applications"), such as, but not limited to, applications in nuclear facilities, in aircraft automatic flight control, in air traffic control, in mass transit system control, in missile launch systems, in weapon systems, in medical equipment for life support or any application involving a direct serious risk of physical injury or death. Please do not use Fujitsu Products without securing the sufficient safety and reliability required for the High Safety Required Applications. In addition, Fujitsu shall not be liable against the customer and/or any third party for any claims or damages arising in connection with the use of Fujitsu Products in the High Safety Required Applications. Fujitsu warrants that its Products, if properly used and serviced, will conform to their specification and will be free from defects in material and workmanship for twelve months from delivery. The implied warranties of merchantability and fitness for a particular purpose and all other warranties, representations and conditions, express or implied by statute, trade usage or otherwise, except as set forth in this warranty, are excluded and shall not apply to the Products delivered.

The contents, data and information in this datasheet are provided by Fujitsu Component Ltd. as a service only to its user and only for general information purposes. The use of the contents, data and information provided in this datasheet is at the users' own risk. Fujitsu has assembled this datasheet with care and will endeavor to keep the contents, data and information correct, accurate, comprehensive, complete and up to date. Fujitsu Components Europe B.V. and affiliated companies do however not accept any responsibility or liability on their behalf, nor on behalf of its employees, for any loss or damage, direct, indirect or consequential, with respect to this datasheet, its contents, data, and information and related graphics and the correctness, reliability, accuracy, comprehensiveness, usefulness, availability and completeness thereof. Nor do Fujitsu Components Europe B.V. and affiliated companies accept on their behalf, nor on behalf of its employees, any responsibility or liability with respect to these datasheets, its contents, data, information and related graphics and the correctness, reliability, accuracy, comprehensiveness, usefulness, availability and completeness thereof. Rev. January 8th, 2020