

# POWER RELAY

## 1 POLE—5 A (CADMIUM FREE CONTACTS TYPE)

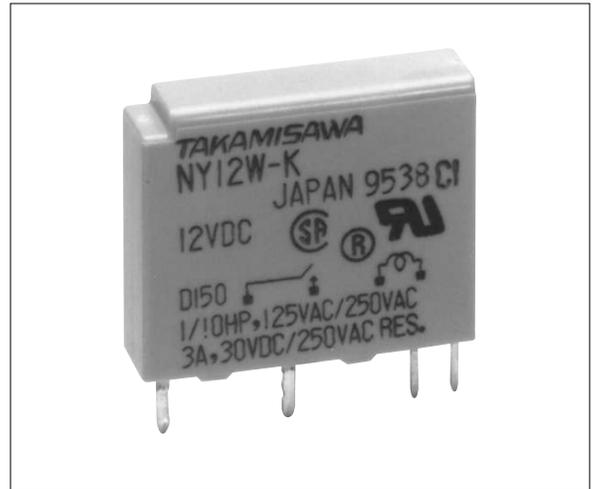
### NY SERIES

RoHS compliant



#### FEATURES

- Ultra slim type with 5 mm thickness
  - Good for high density mounting
- Low power consumption and high sensitivity
  - Nominal coil power: 120 mW
  - Operating power: 54 mW
- UL, CSA, VDE recognized
- Conforms to IEC61010, 61131
- High isolation
  - Surge voltage: 5,080V
  - Dielectric strength: 3,000VAC (coil and contacts)
- SIL pitch terminals
- Plastic sealed type
- Compatible with solid state I/O module type SN (see page 376) in size and pin (terminal) arrangement
- Environmentally friendly cadmium free contact type
- RoHS compliant since date code: 0439C1  
Please see page 6 for more information



#### ORDERING INFORMATION

[Example]  $\frac{NY}{(a)} \frac{P}{(b)} - \frac{12}{(*)} \frac{W}{(c)} - \frac{K}{(e)} - \frac{IE}{(*) (f)}$

(a)	Series Name	NY: NY Series
(b)	Terminal Classification	Nil : PC board mounting type P : Socket mounting type
(c)	Nominal Voltage	Refer to the COIL DATA CHART
(d)	Contact	W : Bifurcated type
(e)	Enclosure	K : Plastic sealed type
(f)	Insulation	IE : Comply with IEC standard

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

#### SAFETY STANDARDS

Type	Compliance	Contact rating
UL	UL 508, UL 1604	Flammability: UL 94-V0 (plastics) 3A (General use) 5A, 250VAC/30 VDC (resistive)
	E56140, E199193	
CSA	C22.2 No. 14 LR 35579	1/8 HP, 250VAC /125VAC Pilot duty: C300

Also complies with VED, IEC 61010, 61131

## ■ SPECIFICATIONS

Item		NY	
Contact	Arrangement	1 form A (SPST-NO)	
	Material	Gold overlay silver alloy	
	Configuration	Bifurcated	
	Resistance (initial)	Maximum 30 mΩ (at 1 A 6 VDC)	
	Rating (resistive)	3 A 250 VAC or 3 A 30 VDC	
	Maximum Carrying Current	5 A	
	Maximum Switching Power	750 VA, 90 W	
	Maximum Switching Voltage	270 VAC, 150 VDC	
	Maximum Switching Current	5 A	
	Minimum Switching Load*1	1mA 5 VDC	
Coil	Nominal Power (at 20°C)	120 mW	
	Operate Power (at 20°C)	54 mW	
	Operating Temperature	-40°C to +90°C (no frost) (refer to the CHARACTERISTIC DATA)	
Time Value	Operate (at nominal voltage)	Maximum 10 ms	
	Release (at nominal voltage)	Maximum 5 ms	
Life	Mechanical	2 x 10 <sup>7</sup> operations minimum	
	Electrical	1 × 10 <sup>5</sup> operations minimum (at 3A 250VAC, 30VDC resistive) 5 × 10 <sup>4</sup> operations minimum (at 5 A 250 VAC, 30 VDC resistive)	
Other	Vibration Resistance	Misoperation	10 to 55 Hz (double amplitude of 1.5 mm)
		Endurance	10 to 55 Hz (double amplitude of 5.0 mm)
	Shock Resistance	Misoperation	100 m/s <sup>2</sup> (11 <sup>±1</sup> ms)
		Endurance	1,000 m/s <sup>2</sup> (6 <sup>±1</sup> ms)
	Weight	Approximately 3.5 g	

\*1 Minimum switching loads mentioned above are reference values. Please perform the confirmation test with the actual load before production since reference values may vary according to switching frequencies, environmental conditions and expected reliability levels.

## ■ INSULATION

Item	NY	Note
Resistance (initial)	Minimum 1,000 MΩ	at 500 VDC
Dielectric Strength	open contacts	750 VAC 1 min.
	coil and contacts	3,000 VAC 1 min.
Surge Voltage	5,080 V	1.2 x 50μs standard wave

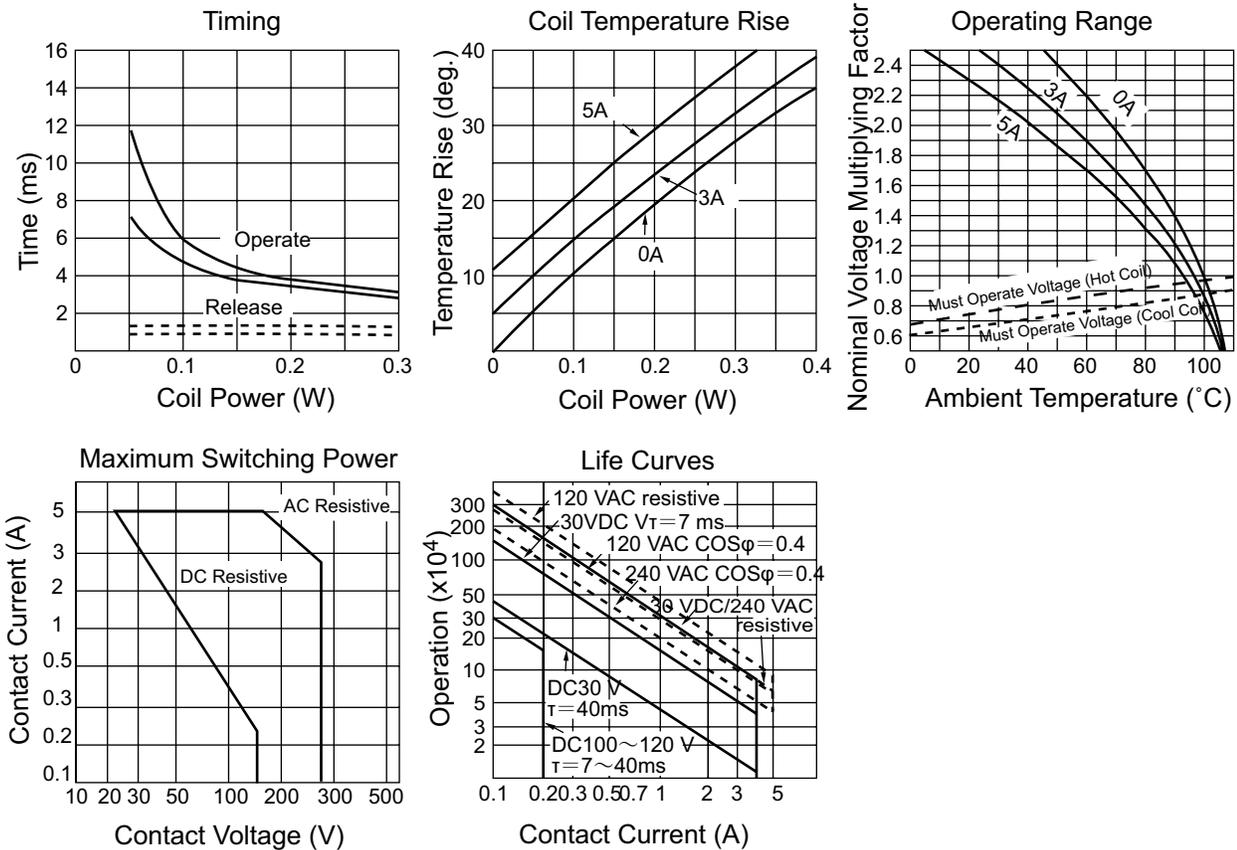
## COIL DATA CHART

MODEL	Nominal voltage	Coil resistance ( $\pm 10\%$ )	Must operate voltage*	Must release voltage*	Nominal power
NY- 4.5 W-K-IE	4.5 VDC	169 $\Omega$	3 VDC	0.45 VDC	120 mW
NY- 5 W-K-IE	5 VDC	208 $\Omega$	3.35 VDC	0.5 VDC	120 mW
NY- 6 W-K-IE	6 VDC	300 $\Omega$	4 VDC	0.6 VDC	120 mW
NY- 9 W-K-IE	9 VDC	675 $\Omega$	6 VDC	0.9 VDC	120 mW
NY- 12 W-K-IE	12 VDC	1,200 $\Omega$	8 VDC	1.2 VDC	120 mW
NY- 18W-K-IE	18 VDC	2,700 $\Omega$	12.1VDC	1.8 VDC	120 mW
NY- 24 W-K-IE	24 VDC	4,800 $\Omega$	16.1 VDC	2.4 VDC	120 mW

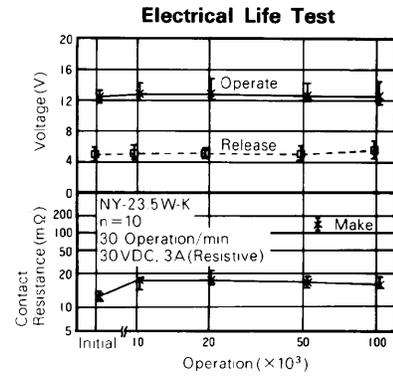
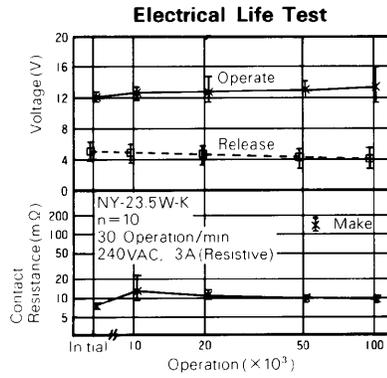
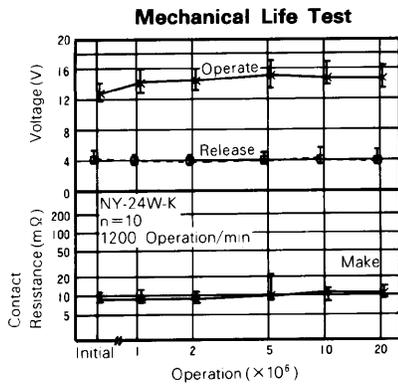
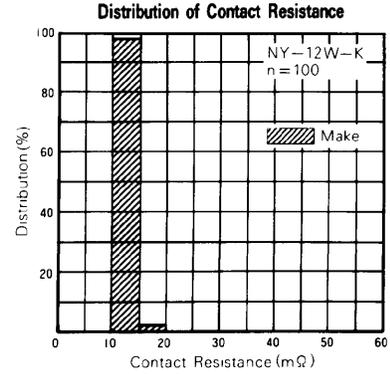
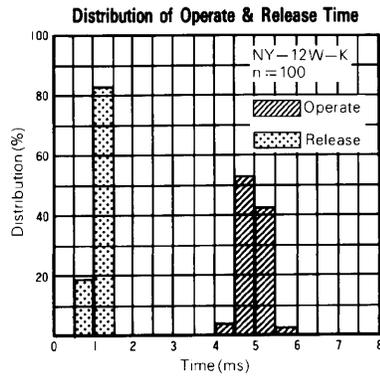
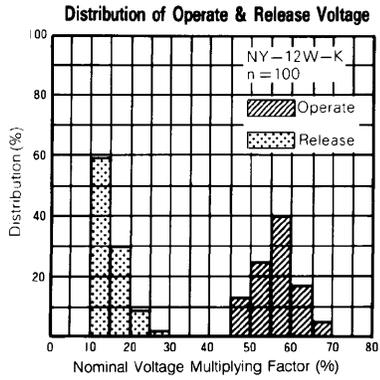
Note: All values in the table are measured at 20°C

\*: Specified values are subject to pulse wave voltage

## CHARACTERISTIC DATA



## ■ REFERENCE DATA

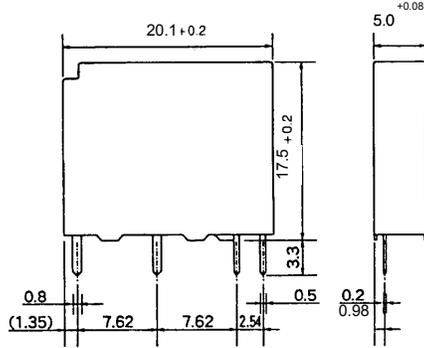


# NY SERIES

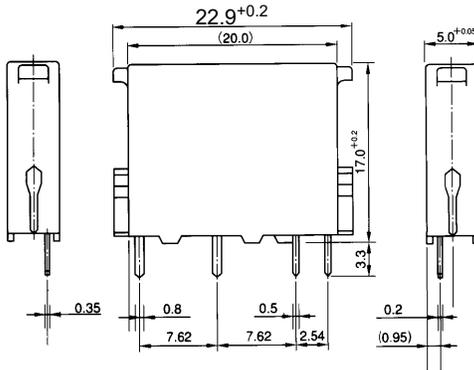
## ■ DIMENSIONS

### ● Dimensions

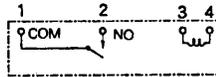
NY type



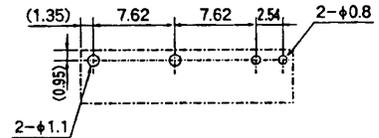
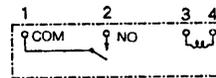
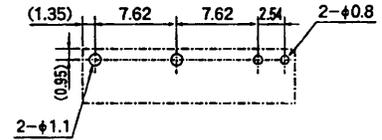
NYP type



### ● Schematics (BOTTOM VIEW)

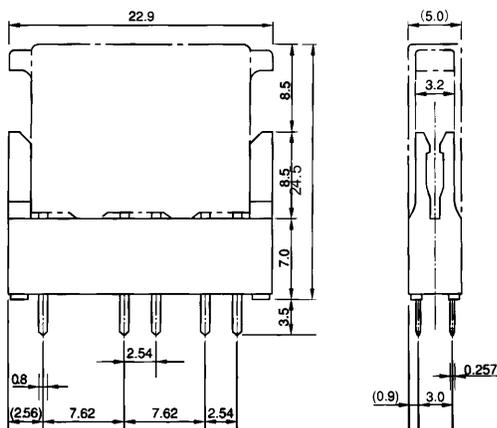


### ● PC board mounting hole layout (BOTTOM VIEW)

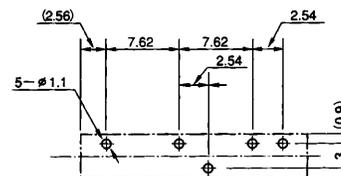


Unit: mm

## ■ SOCKET DIMENSIONS



## ■ SOCKET DRILLING PLANT



Unit: mm

## ■ NOTES

1. Socket ordering code. JL-5N
2. Standard IC socket is not recommended. Please use socket JL-5N.

## RoHS Compliance and Lead Free Relay Information

### 1. General Information

- Relays produced after the specific date code that is indicated on each data sheet are lead-free now. All of our signal and power relays are lead-free. Please refer to Lead-Free Status Info. (<http://www.fujitsu.com/us/downloads/MICRO/fcai/relays/lead-free-letter.pdf>)
- Lead free solder paste currently used in relays is Sn-3.0Ag-0.5Cu.
- All signal and power relays also comply with RoHS. Please refer to individual data sheets. Relays that are RoHS compliant do not contain the 5 hazardous materials that are restricted by RoHS directive (lead, mercury, chromium IV, PBB, PBDE).
- It has been verified that using lead-free relays in leaded assembly process will not cause any problems (compatible).
- "LF" is marked on each outer and inner carton. (No marking on individual relays).
- To avoid leaded relays (for lead-free sample, etc.) please consult with area sales office.
- We will ship leaded relays as long as the leaded relay inventory exists.

Note: Cadmium was exempted from RoHS on October 21, 2005. (Amendment to Directive 2002/95/EC)

### 2. Recommended Lead Free Solder Profile

- Recommended solder paste Sn-3.0Ag-0.5Cu.

#### Reflow Solder condition

**Flow Solder condition:**

Pre-heating: maximum 120°C  
Soldering: dip within 5 sec. at  
260°C solder bath

**Solder by Soldering Iron:**

Soldering Iron  
Temperature: maximum 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.

### 4. Tin Whisker

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

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Rev. July 19, 2007.