

# 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, CSA, VDE recognized
  - Conforms to IEC61010, 61131
  - 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 7 for more information



#### ■ PARTNUMBER INFORMATION

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

(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....24VDC Coil rating table at page 3
(d)	Contact design	W	: Bifurcated contact
(e)	Enclosure	K	: Plastic sealed type, RTIII
(f)	Insulation	IE	: Complies with IEC standard, IEC61010, 61131

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

## ■ SPECIFICATION

Item			NY
Contact Data	Configuration		1 form A (SPST-NO)
	Construction		Bifurcated
	Material		Gold overlay silver alloy (AgNi + Au)
	Resistance (initial)		Max. 30 mOhm at 6 VDC, 1 A
	Contact rating		3A, 250VAC / 30VDC
	Max. carrying current		5A
	Max. switching voltage		270VAC / 150 VDC
	Max. switching power		750VA / 90W
	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 (no diode)
Insulation	Resistance (initial)		Min. 1,000MOhm 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
Other	Vibration resistance	Misoperation	10 to 55Hz double amplitude 1.5 mm
		Endurance	10 to 55Hz double amplitude 5 mm
	Shock	Misoperation	Min. 100m/s <sup>2</sup> (11 ± 1ms)
		Endurance	Min. 1,000m/s <sup>2</sup> (6 ± 1ms)
	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.

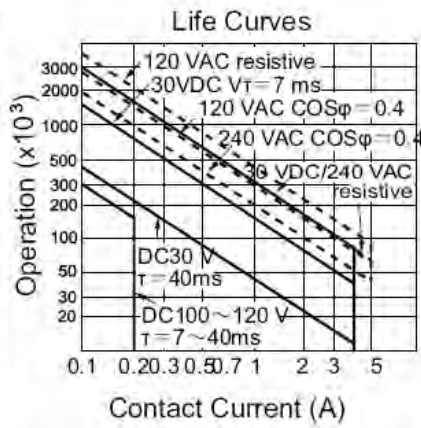
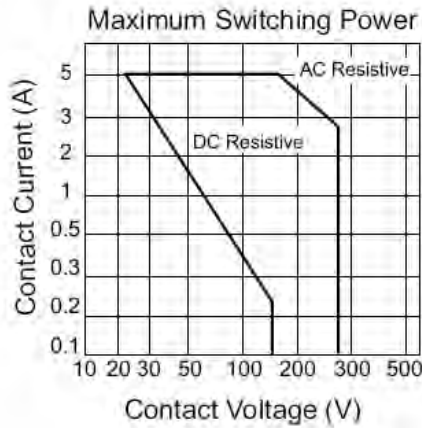
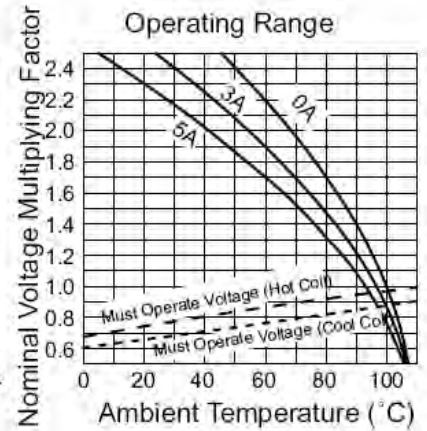
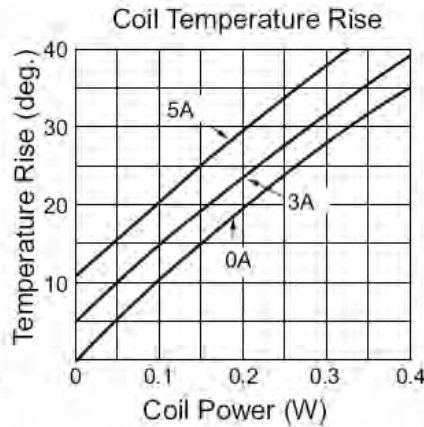
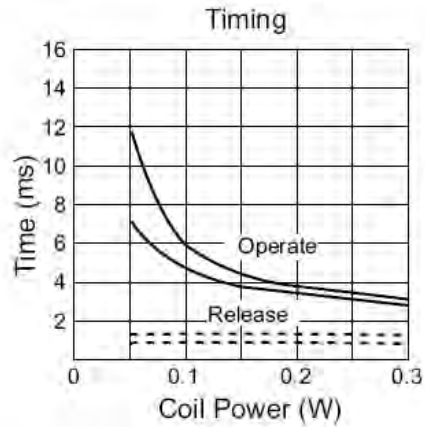
\* Specified operate values are valid for pulse wave voltage.

## ■ SAFETY STANDARDS

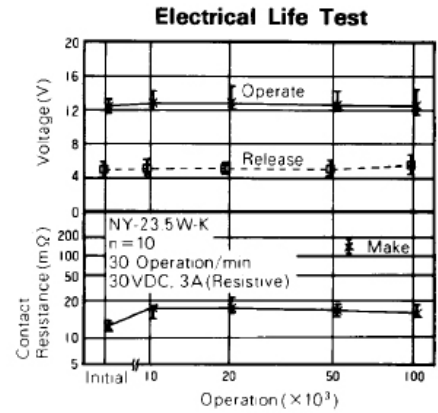
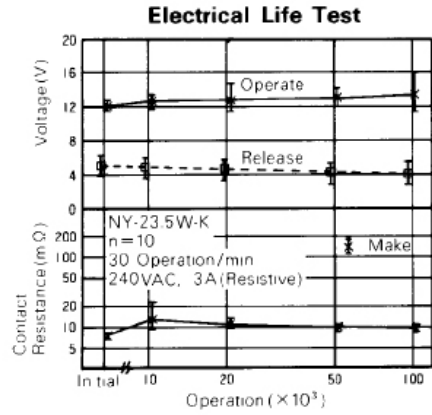
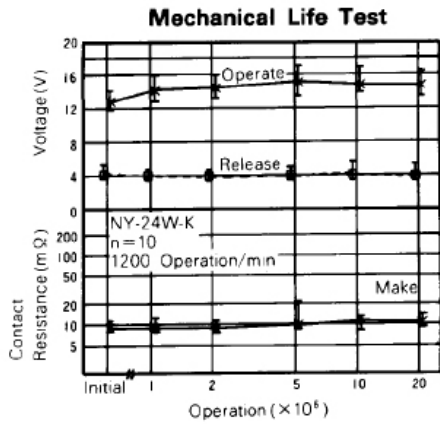
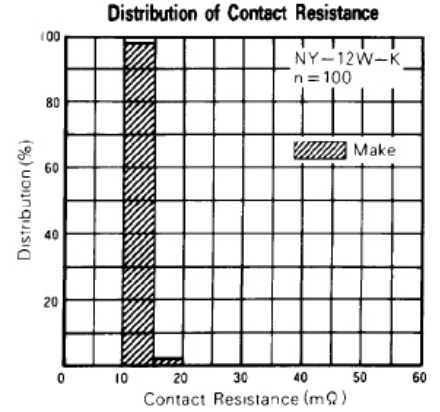
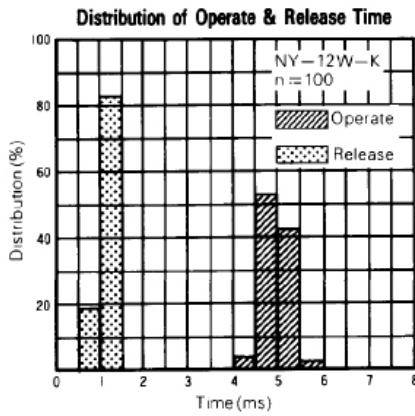
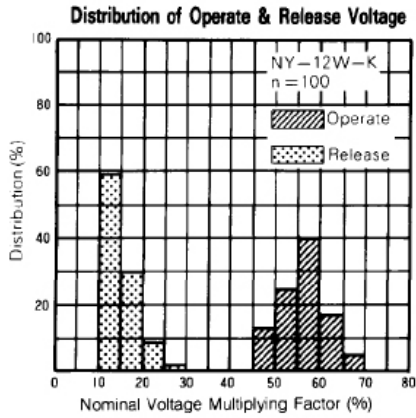
Type	Compliance	Contact rating
UL	UL 508, UL 1604	Flammability: UL 94-V0 (plastics)
	E56140, E199193	3A (General use) 5A, 250VAC/30 VDC (resistive)
CSA	C22.2 No. 14 LR 35579	1/8 HP, 250VAC /125VAC Pilot duty: C300
VDE	0435 part 201 40016933	5A, 250VAC, cos φ1, 30K (-40 / 80 °C) 5A, 30VDC, 0msec, 100K (-40 / 80 °C)

Also complies with VDE, IEC 61010, 61131

## CHARACTERISTIC DATA



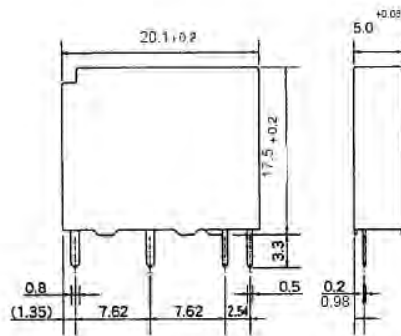
## ■ REFERENCE DATA



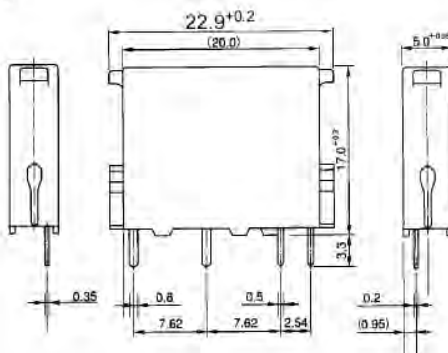
## ■ DIMENSIONS

### ● Dimensions

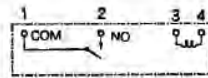
NY type



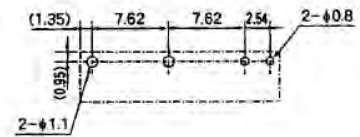
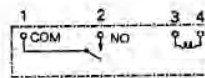
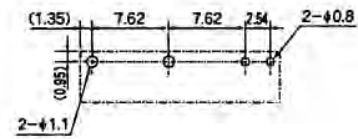
NYP type



### ● Schematics (BOTTOM VIEW)

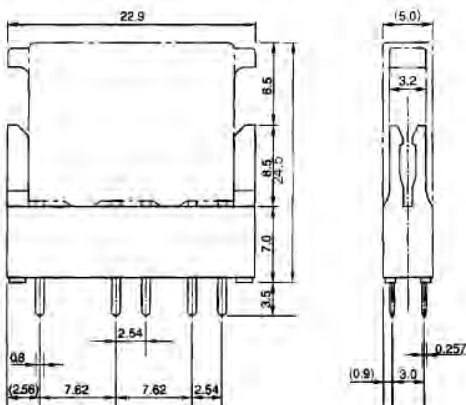


### ● PC board mounting hole layout (BOTTOM VIEW)

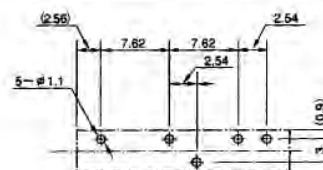


Unit: mm

## ■ SOCKET DIMENSIONS



## ■ SOCKET DRILLING PLAN



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 Information

### 1. General Information

- All signal and power relays produced by Fujitsu Components are compliant with RoHS directive 2002/95/EC including amendments.
- Cadmium as used in electrical contacts is exempted from the RoHS directives on October 21st, 2005. (Amendment to Directive 2002/95/EC)
- All of our signal and power relays are lead-free. Please refer to Lead-Free Status Info for older date codes at: <http://www.fujitsu.com/us/downloads/MICRO/fcai/relays/lead-free-letter.pdf>
- 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.

### 2. Recommended Lead Free Solder Profile

- Recommended solder Sn-3.0Ag-0.5Cu.

**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, 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

### Japan

Fujitsu Component Limited  
Gotanda-Chuo Building  
3-5, Higashigotanda 2-chome, Shinagawa-ku  
Tokyo 141, Japan  
Tel: (81-3) 5449-7010  
Fax: (81-3) 5449-2626  
Email: [promothq@ft.ed.fujitsu.com](mailto:promothq@ft.ed.fujitsu.com)  
Web: [www.fcl.fujitsu.com](http://www.fcl.fujitsu.com)

### North and South America

Fujitsu Components America, Inc.  
250 E. Caribbean Drive  
Sunnyvale, CA 94089 U.S.A.  
Tel: (1-408) 745-4900  
Fax: (1-408) 745-4970  
Email: [components@us.fujitsu.com](mailto:components@us.fujitsu.com)  
Web: <http://us.fujitsu.com/components>

### Europe

Fujitsu Components Europe B.V.  
Diamantlaan 25  
2132 WV Hoofddorp  
Netherlands  
Tel: (31-23) 5560910  
Fax: (31-23) 5560950  
Email: [info@fceu.fujitsu.com](mailto:info@fceu.fujitsu.com)  
Web: [emea.fujitsu.com/components/](http://emea.fujitsu.com/components/)

### Asia Pacific

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@fcal.fujitsu.com](mailto:fcal@fcal.fujitsu.com)  
Web: <http://www.fujitsu.com/sg/services/micro/components/>

©2010 Fujitsu Components Europe B.V. All rights reserved. All trademarks or registered trademarks are the property of their respective owners.

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 for any representation or warrant of any kind, express or implied, including warranties of any kind for merchantability or fitness for particular use, with respect to these datasheets, its contents, data, information and related graphics and the correctness, reliability, accuracy, comprehensiveness, usefulness, availability and completeness thereof. Rev. August 6, 2010