## 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] $\frac{\mathrm{NY}}{\text { (a) }} \frac{\mathrm{P}}{(\mathrm{b})}$ (*) $^{-} \frac{12}{\text { (c) }} \frac{\mathrm{W}}{(\mathrm{d})}-\frac{\mathrm{K}}{(\mathrm{e})}$ (*) $^{\star}-\frac{\mathrm{IE}}{(\mathrm{f})}$

| (a) | Relay type | NY | : NY-Series |
| :---: | :--- | :--- | :--- |
| (b) | Mounting type | Nil <br> P | : PCB board mounting type <br> :Socket mounting type |
| (c) | Coil rated voltage | 12 | $: 4.55 . . .24 \mathrm{VDC}$ <br> 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 + $\mathrm{Au})$ |  |
|  | Resistance (initial) |  | Max. $30 \mathrm{~m} \Omega$ at $6 \mathrm{VDC}, 1 \mathrm{~A}$ |  |
|  | Contact rating |  | 5A, 250VAC / 30VDC |  |
|  | Max. carrying current |  | 5A |  |
|  | Max. switching voltage |  | 270VAC / 125 VDC |  |
|  | Max. switching power |  | 750VA / 90W |  |
|  | Max. switching current |  | 5A |  |
|  | Min. switching load * |  | $1 \mathrm{~mA}, 5 \mathrm{VDC}$ |  |
| Life | Mechanical |  | Min. $20 \times 10^{6}$ operations |  |
|  | Electrical |  | Min. $100 \times 10^{3}$ operations (at 3A, 250VAC, 30VDC resistive) Min. $50 \times 10^{3}$ operations (at 5A, 250VAC, 30VDC resistive) |  |
| $\begin{aligned} & \hline \text { Coil } \\ & \text { Data } \\ & \hline \end{aligned}$ | Rated power (at $20^{\circ} \mathrm{C}$ ) |  | 120 mW |  |
|  | Operate power (at $20^{\circ} \mathrm{C}$ ) |  | 54 mW |  |
|  | Operating temperature range |  | $-40^{\circ} \mathrm{C}$ to $+90^{\circ} \mathrm{C}$ (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. 1,000M 2 at 500VDC |  |
|  | Dielectric strength | Open contacts | 750VAC, 1min |  |
|  |  | Contacts to coil | 3,000VAC, 1min |  |
|  | Surge strength | Coil to contacts | 5,080V / $1.2 \times 50 \mu \mathrm{~s}$ standard wave |  |
|  | Clearance |  | Min. 3mm |  |
|  | Creepage |  | Min. 3mm |  |
| Other | Vibration resistance | Misoperation | 10 to 55 to 10 Hz single amplitude 0.75 mm | Coil ON/OFF, 3 axes, total 6 cycles |
|  |  | Endurance | 10 to 55 to 10 Hz single amplitude 0.25 mm | Coil OFF, 3 axes, total 6 hours |
|  | Shock | Misoperation | Min. $100 \mathrm{~m} / \mathrm{s}^{2}(11 \pm 1 \mathrm{~ms})$ | Coil ON/OFF, 3 axes, total 36 operations |
|  |  | Endurance | Min. $1,000 \mathrm{~m} / \mathrm{s}^{2}(6 \pm 1 \mathrm{~ms})$ | Coil OFF, 3 axes, total 18 operations |
|  | Weight |  | Approximately 3.5 g |  |
|  | Sealing |  | Plastic sealed, RTIII |  |

[^0]
## - COIL RATING

| Coil <br> Code | Rated Coil <br> Voltage <br> (VDC) | Coil Resistance <br> $+/-10 \%(0 h m)$ | Must Operate <br> Voltage <br> (VDC) * | Must Release- <br> Voltage <br> (VDC) | Rated Power <br> $(\mathrm{mW})$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 4.5 | 4.5 | 169 | 3 | 0.45 |  |
| 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 $20^{\circ} \mathrm{C}$ 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 | Flammability: UL 94-V0 (plastics) |
|  | ANSI/ISA12.12.01 | 3A, 250VAC/30VDC (General use) |
|  | E56140, E199193 | 5A, 250VAC/30VDC (resistive) |
| CSA | C22.2 No. 14 | 1/8 HP, 250VAC 1/25VAC |
|  | PR 35579 | Pilot duty: C300, D150, R300 |

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












## DIMENSIONS

NY type


- Schematics

- PC board mounting hole layout (BOTTOM VIEW)

- PC board mounting hole layout (BOTTOM VIEW)


- Schematics

Socket type JL-5N

## - Dimensions



- PC board mounting hole layout
(BOTTOM VIEW)


Note: Tolerance for PC board mounting hole/pad layout: +/-0.1.
Note: Dimensions of the terminals do not include thickness of pre-solder. Note: This datasheet provide only + tolerance for outer dimensions.
Please ask for specification in case you need other tolerances.

## 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.


## RoHS Compliance and Lead Free Information

## 1. General Information

- All relays produced by Fujitsu Components are compliant with RoHS directive 2011/65/EU including amendments.
- Cadmium as used in electrical contacts is exempted from the RoHS directives. As per Annex III of directive 2011/65/EU.
- All relays are lead-free. Please refer to Lead-Free Status Info for older date codes at: http://www.fujitsu.com/ downloads/MICRO/fcai/relays/lead-free-letter.pdf
- Lead free solder plating on relay terminals is $\mathrm{Sn}-3.0 \mathrm{Ag}-0.5 \mathrm{Eu}$, unless otherwise specified. This material has been verified to be compatible with PbSn assembly process.


## 2. Recommended Lead Free Solder Condition

- Recommended solder Sn-3.0Ag-0.5Cu.


## Flow Solder Condition:

Pre-heating: maximum $120^{\circ} \mathrm{C}$ within 90 sec
Soldering: $\quad$ dip within 5 sec. at $255^{\circ} \mathrm{C} \pm$
$5^{\circ} \mathrm{C}$ solder bath
Relay must be cooled by air immediately after soldering

$$
\begin{array}{ll}
\text { Solder by Soldering Iron: } \\
\text { Soldering Iron: } & 30-60 \mathrm{~W} \\
\text { Temperature: } & \text { maximum } 350-360^{\circ} \mathrm{C} \\
\text { Duration: } & \text { maximum } 3 \mathrm{sec} .
\end{array}
$$

## 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.


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[^0]:    * 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.

