

# POWER RELAY

## 1 POLE - 5A Slim Power Relay

### FTR-MY Series

#### ■ FEATURES

- Width 5mm, height 12mm (31% smaller than NY series)  
area 100 mm<sup>2</sup>, super slim , low power, compact and light weight 2.5gr.
- Nominal power: 110mW (8% less than NY series),  
Operate power: 54mW  
High sensitive
- High reliable contacts, bifurcated gold overlay silver alloy (cadmium free)
- Conform to UL61010-1, UL61010-2-201, IEC/EN61010-1, IEC/EN61010-2-201 (max. 277VAC)
- Dielectric strength: 3,000VAC
- Surge strength: 5,080V
- Safety standards  
UL, CSA, VDE, CQC
- RoHS compliant  
Please see page 6 for more information
- Plastic sealed type, RTIII



#### ■ APPLICATIONS

#### ■ PARTNUMBER INFORMATION

[Example]       $\frac{\text{FTR-MY}}{\text{(a)}}$      $\frac{\text{A}}{\text{(b)}}$      $\frac{\text{A}}{\text{(c)}}$      $\frac{\text{012}}{\text{(d)}}$      $\frac{\text{D}}{\text{(e)}}$

|     |                       |   |
|-----|-----------------------|---|
| (a) | Relay type            | FTR-MY : FTR-MY-Series                              |
| (b) | Contact configuration | A : 1 form A  |
| (c) | Coil type             | A : Standard type (110mW)                           |
| (d) | Coil rated voltage    | 012 : 4.5.....24 VDC<br>Coil rating table at page 3 |
| (e) | Contact material      | D : Gold overlay AgNi                               |

Actual marking does not carry the type name : "FTR"  
E.g.: Ordering code: FTR-MYAA012D    Actual marking: MYAA012D

## ■ SPECIFICATION

| Item         |                              |                  | FTR-MY  | Remarks / Conditions                     |
|--------------|------------------------------|------------------|---|--|
| Contact Data | Configuration                |                  | 1 form A  |  |
|              | Construction                 |                  | Bifurcated (cross bar)  |  |
|              | Material                     |                  | Gold overlay silver alloy   |  |
|              | Resistance (initial)         |                  | Max. 30 mΩ at 6VDC, 1A  |  |
|              | Contact rating               |                  | 5A, 250VAC / 30VDC  |  |
|              | Max. carrying current        |                  | 5A  |  |
|              | Max. switching current       |                  | 5A  |  |
|              | Max. switching voltage       |                  | 277VAC / 125VDC   |  |
|              | Max. switching power         |                  | 1,250VA / 150W  |  |
|              | Min. switching load *        |                  | 1 mA, 5VDC  |  |
| Life         | Mechanical                   |                  | Min. 20 × 10 <sup>6</sup> operations  |  |
|              | Electrical                   |                  | Min. 100 × 10 <sup>3</sup> operations<br>(at 3A 250VAC, 30VDC resistive)<br>Min. 50 × 10 <sup>3</sup> operations<br>(at 5A 250VAC, 30VDC resistive) |  |
| Coil Data    | Rated power (at 20 °C)       |                  | 110 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 (50/60Hz) 1min   |  |
|              |                              | Contacts to coil | 3,000VAC (50/60Hz) 1min   |  |
|              | Surge strength               | Coil to contacts | 5,080V / 1.2 × 50μs standard wave   |  |
|              | Clearance                    |                  | Min. 5.6mm  |  |
|              | Creepage                     |                  | Min. 5.6mm  |  |
| Other        | Vibration resistance         | Misoperation     | 10 to 55 to 10 single amplitude 0.75mm  | Coil ON/OFF, 3 axes, total 6 cycles      |
|              |                              | Endurance        | 10 to 55 to 10 single amplitude 2.5mm   | 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 2.5 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                      | 185                           | 3.15                         | 0.225                        | 110              |
| 005       | 5                        | 230                           | 3.5                          | 0.25                         |                  |
| 006       | 6                        | 330                           | 4.2                          | 0.3                          |                  |
| 009       | 9                        | 740                           | 6.3                          | 0.45                         |                  |
| 012       | 12                       | 1,310                         | 8.4                          | 0.6                          |                  |
| 018       | 18                       | 2,950                         | 12.6                         | 0.9                          |                  |
| 024       | 24                       | 5,240                         | 16.8                         | 1.2                          |                  |

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.

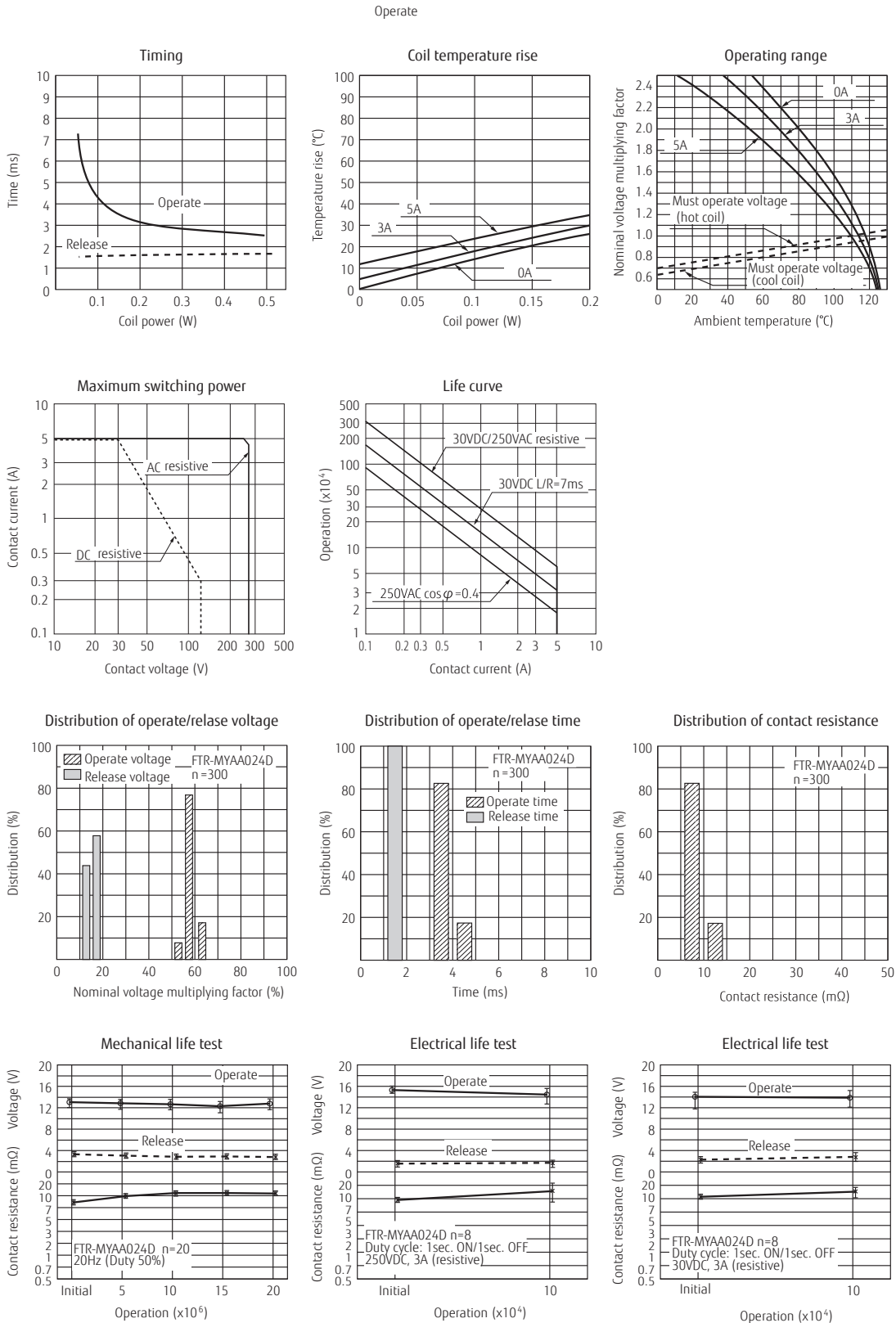
## ■ SAFETY STANDARDS

| Type | Compliance                               | Contact rating   |
|------|--|--|
| UL   | UL 508<br>ANSI/ISA 12.12.01              | Flammability: UL 94-V0 (plastics)  |
|      | E63614, E225300                          | 5A, 277 VAC (resistive)<br>5A, 30 VDC<br>1/10 HP, 277VAC /125VAC<br>Pilot duty: D300, C300, R300 |
| CSA  | C22.2 No. 14<br>LR 40304                 |  |
| VDE  | IEC/EN61810-1                            | 5A, 250VAC, $\cos\phi 1$   |
| CQC  | GB15092.1<br>11001063129,<br>17001164877 | 5A 250VAC  |

Also conform to UL61010-1, UL61010-2-201, IEC/EN61010-1, IEC/EN61010-2-201 (max. 277VAC)

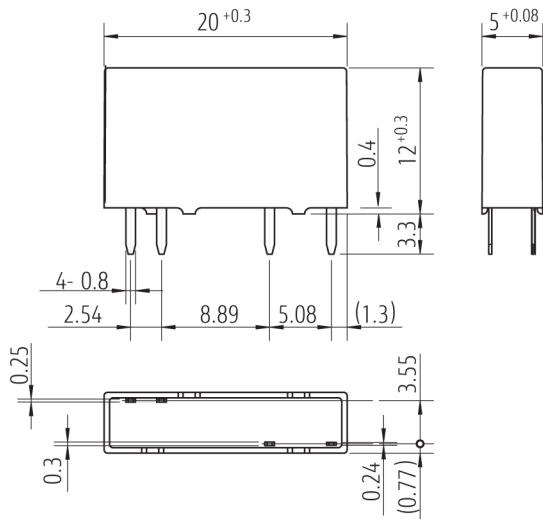
## ■ CHARACTERISTIC DATA

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

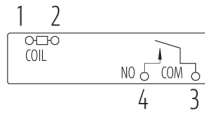


## ■ DIMENSIONS

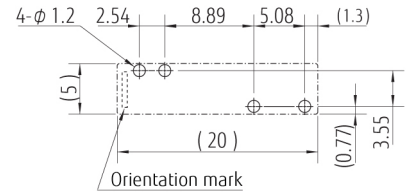
### ● Dimensions



### ● Schematics



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



Unit: mm

\* Dimensions of the terminals do not include thickness of pre-solder.

\* Tolerance of PC board mounting hole layout :  $\pm 0.1$  unless otherwise specified.

## 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 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 Condition

- Recommended solder 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 350-360°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.

### 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.

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