

POWER RELAY

1 POLE 16 A—SLIM POWER RELAY FTR-JR Series

RoHS compliant



■ FEATURES

- 1 Pole 16A slim relay with #187 Tab terminal
- Nominal Power: 530 mW (35% power reduction compared to VR Series)
- Cadmium free contacts
- Insulation distance: 9.5mm, Dielectric strength: 5K VAC Surge voltage 10K VAC
- JB: Tab terminal and contact terminal are connected electrically
JC: Tab terminal and contact terminal are not connected electrically
- UL Class B (130 °C), Flamability 94V-0
- SAFETY STANDARDS
UL, CSA, VDE
- RoHS compliant since date code: 0434R
Please see page 5 for more information



■ APPLICATIONS

- Microwave oven magnetron, and heater

■ ORDERING INFORMATION

[Example] $\frac{\text{FTR-JR}}{\text{(a)}} \frac{\text{J B}}{\text{(b)(c)}} \frac{\text{012}}{\text{(d)}} \frac{\text{W}}{\text{(e)}} \frac{\text{-**}}{\text{(f)}}$

| | | |
|-----|----------------------|---|
| (a) | Series Name | FTR-JR Series |
| (b) | Contact Arrangement | J : Tab terminal (#187) |
| (c) | Coil Type | B : 530 mW (TAB and PCB terminals connected) C : 530mW (TAB and PCB terminals unconnected) |
| (d) | Coil Nominal Voltage | 012 : 12 VDC 018 : 18 VDC 024 : 24 VDC |
| (e) | Contact Material | W : Silver alloy |
| (f) | Custom Designation | Special Number |

Note: The designation name is stamped on the top of the relay case as follows:
(Example: Designation ordered: FTR-JRJB012W
Stamp: JRJB012W

FTR-JR SERIES

■ COIL DATA CHART

| MODEL | Nominal Voltage | Coil Resistance ($\pm 10\%$) | Must Operate Voltage | Must Release Voltage | Nominal Power |
|----------------|-----------------|--------------------------------|----------------------|----------------------|---------------|
| FTR-JR Series | | | | | |
| FTR-JRJ()012W | 12 VDC | 270 W | 9.0 VDC | 0.6 VDC | 530 mW |
| FTR-JRJ()018W | 18 VDC | 610 W | 13.5 VDC | 0.9 VDC | 530 mW |
| FTR-JRJ()024W | 24 VDC | 1,100 W | 18.0 VDC | 1.2 VDC | 530 mW |

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

■ SPECIFICATIONS

| Item | FTR-JR Series | | |
|------------|--------------------------------------|--|---|
| Contact | Arrangement | 1 Form A (SPST-NO) | |
| | Material | Silver alloy | |
| | Resistance (initial) | Maximum 100 m ohm (at 1A 6VDC) | |
| | Rating (resistive) | 277VAC 16A | |
| | Maximum Carrying Current | 20A | |
| | Maximum Switching Rating | 4,432VA | |
| | Maximum Switching Voltage | 400 VAC | |
| | Maximum Switching Current | 20A | |
| | Maximum Switching Load ^{*1} | 5 VDC, 10 mA | |
| Coil | Nominal Power (at 20° C) | 530mW | |
| | Operate Power (at 20° C) | 300mW | |
| | Operating Temperature | -40° C to +85° C (no frost) | |
| Time Value | Operate Time (at nominal voltage) | Maximum 15 ms (excluding bounce time) | |
| | Release Time (at nominal voltage) | Maximum 10 ms (excluding bounce time) | |
| Life | Mechanical | 2 x 10 ⁷ operations minimum | |
| | Electrical | Contact Rating | 10 x 10 ⁴ operations minimum |
| Other | Vibration Resistance | Misoperation | 10-55 Hz (double amplitude of 1.65mm) |
| | | Endurance | 10-55 Hz (double amplitude of 2.0mm) |
| | Shock Resistance | Misoperation | 200m/s ² (11±1ms) |
| | | Endurance | 1,000m/s ² (6±1ms) |
| | Weight | | Approximately 20g |

*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.

FTR-JR SERIES

■ INSULATION

| Item | FTR-JR | Note |
|----------------------------------|-------------------|-----------------------------|
| Resistance (initial) | Minimum 1,000 MΩ | at 500 VDC |
| Dielectric Strength | open contacts | 1,000 VAC (50/60 Hz) 1 min. |
| | coil and contacts | 5,000 VAC (50/60 Hz) 1 min. |
| Surge Voltage (coil and contact) | 10,000 V | 1.2 x 50μs standard wave |

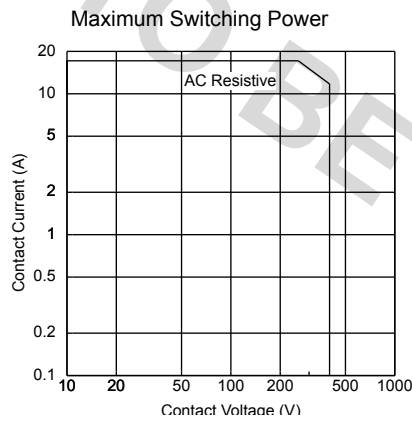
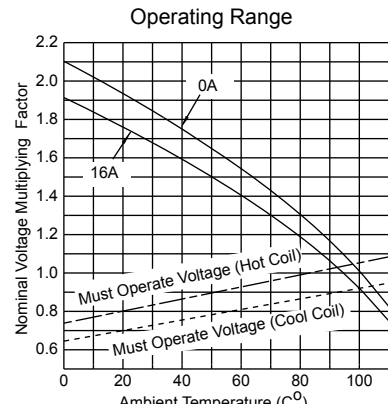
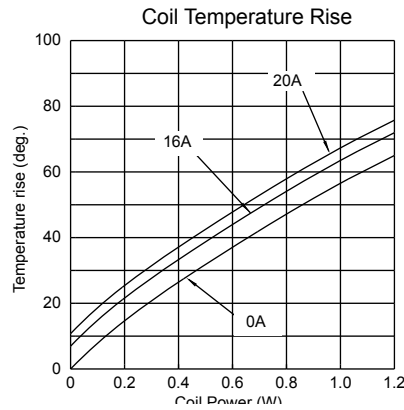
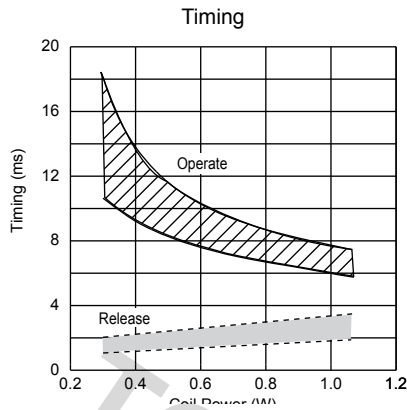
■ SAFETY STANDARDS

| Type | Compliance | Contact rating |
|------|-------------------------|---|
| UL | UL 508 E36314 | Flammability: UL 94-V0 (plastics) 20A, 125VAC (resistive) 16A, 277VAC (resistive) |
| CSA | C22.2 No. 14 LR40304 | |
| VDE | 0435, 0631, 0700, 0860 | |

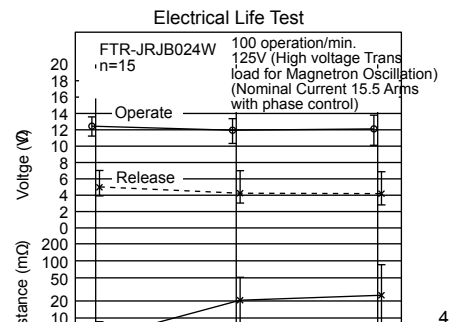
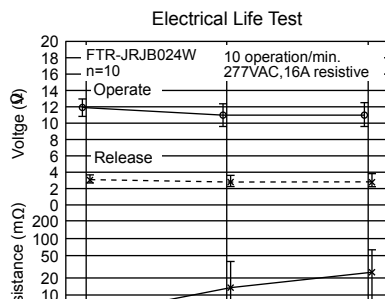
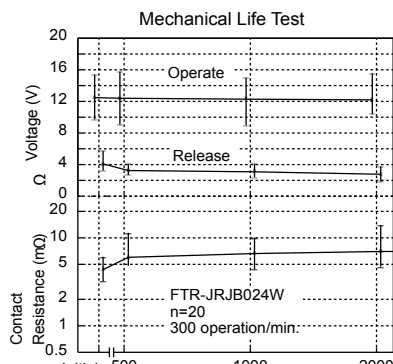
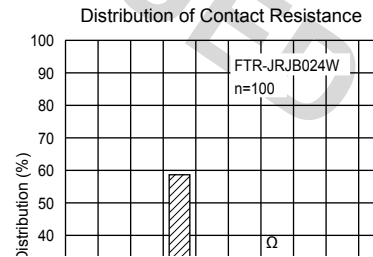
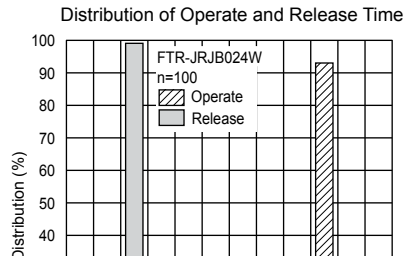
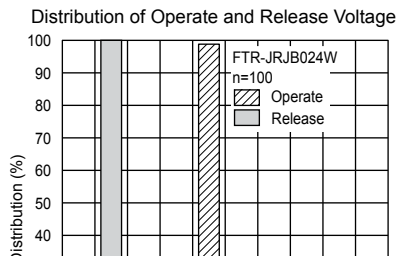
Complies with CQC

FTR-JR SERIES

CHARACTERISTIC DATA



REFERENCE DATA



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.

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
Web: 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
Web: <http://www.fujitsu.com/us/services/edevices/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
Web: 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
Web: <http://www.fujitsu.com/sg/services/micro/components/>

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