

POWER RELAY

1 POLE - 32A, 1.5mm contact gap latching relay

FTR-K3L-PV Series

■ FEATURES

- 1 pole, 32A
 - 1 form A contact
 - Wide contact gap: 1.5mm
Surge strength (B/T open contacts) 2.5kV
Compliant with European photovoltaic standard (VDE0126)
 - High insulation in small package (between coil and contacts)
 - Dielectric strength: AC 4,000V
 - Surge strength: 6,000V
 - Low coil power consumption: 1,200mW
 - Plastic materials: Flammability; UL94 V-0
 - Cadmium-free contacts
 - RoHS compliant.
- Please see page 5 for more information



■ PARTNUMBER INFORMATION

[Example] FTR-K3L A B 012 W - PV
 (a) (b) (c) (d) (e) (f)

| | | |
|-----|-----------------------|---|
| (a) | Relay type | FTR-K3L : FTR-K3L-Series |
| (b) | Contact configuration | A : 1 form A / PCB type |
| (c) | Coil type | B : Standard sensitive (1,200mW) |
| (d) | Coil rated voltage | 012 : 5.....24 VDC Coil rating table at page 3 |
| (e) | Contact material | W : Silver alloy |
| (f) | Version | PV : High current (32A) / contact gap 1.5mm |

E.g.: Ordering code: FTR-K3LAB012W-PV

Actual marking: K3LAB012W-PV

FTR-K3L-PV SERIES

■ SPECIFICATION

| Item | | | FTR-K3L-PV |
|--------------|---|----------------------|---|
| Contact Data | Configuration | | 1 form A |
| | Material | | Silver alloy |
| | Resistance (initial) | | Max. 100 mΩ at 6VDC, 1A |
| | Contact rating (resistive) | | 32A, 250VAC |
| | Max. carrying current | | 32A |
| | Max. switching voltage | | 250VAC |
| | Max. switching power | | 8,000VA |
| | Max. switching current | | 32A |
| | Min. switching load * | | 100mA, 5VDC (reference value) |
| Life | Mechanical | | Min. 1 x 10 ⁶ operations |
| | Electrical | Resistive | 32A / 250VAC, min. 30 x 10 ³ operations |
| | | Inductive | 32A, 250VAC (cosφ 0.8), 30 x 10 ³ operations |
| | | Inductive (overload) | 48A, 250VAC (cosφ 0.8), 50 operations |
| Coil Data | Rated power (at 20 °C) | | 1,200mW |
| | Operating temperature range | | -40 °C to +85 °C |
| Timing Data | Set (at nominal voltage) | | Max. 20ms (without bounce, without diode) |
| | Reset (at nominal voltage) | | Max. 20ms (without bounce, without diode) |
| | Coil excitation time (at nominal voltage) | | Min. 30ms, max. 1000ms |
| Insulation | Contact gap | | Min. 1.5mm |
| | Resistance | | Min. 1,000MΩ at 500VDC |
| | Dielectric strength | Open contacts | 2,500VAC (50/60Hz) 1min |
| | | Contacts to coil | 4,000VAC (50/60Hz) 1min |
| | Surge strength | Contacts to coil | 6,000V / 1.2 x 50μs standard wave |
| | Clearance | | Min. 6.0mm |
| Creepage | | Min. 8.0mm | |
| Other | Vibration resistance | Misoperation | 10 to 55Hz double amplitude 1.5mm |
| | | Endurance | 10 to 55Hz double amplitude 1.5mm |
| | Shock | Misoperation | Min. 200m/s ² (11 ± 1ms) |
| | | Endurance | Min. 1,000m/s ² (6 ± 1ms) |
| | Weight | | Approximately 25g |

* 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.

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■ COIL RATING

| Coil Code | Rated Coil Voltage (VDC) | Coil Resistance +/- 10% (Ohm) | Must Set Voltage (VDC) * | Must Reset Voltage (VDC) * | Max. Set/Reset Voltage (VDC) | Rated Power (mW) |
|-----------|--------------------------|-------------------------------|--------------------------|----------------------------|------------------------------|------------------|
| 005 | 5 | P 21 | +4.0 | - | 9.0 | 1,200 |
| | | S 21 | - | +4.0 | | |
| 006 | 6 | P 30 | +5.4 | - | 10.8 | |
| | | S 30 | - | +5.4 | | |
| 012 | 12 | P 120 | +9.6 | - | 21.6 | |
| | | S 120 | - | +9.6 | | |
| 024 | 24 | P 480 | +19.2 | - | 43.2 | |
| | | S 480 | - | +19.2 | | |

Note: All values in the table are valid for 20°C and zero contact current.

P: Set coil S: Reset coil

* Specified operate values are valid for pulse wave voltage.

■ SAFETY STANDARDS

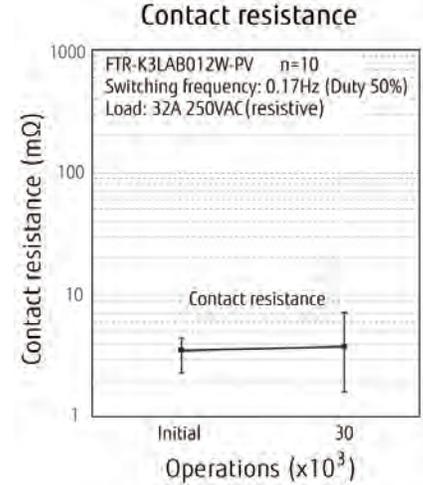
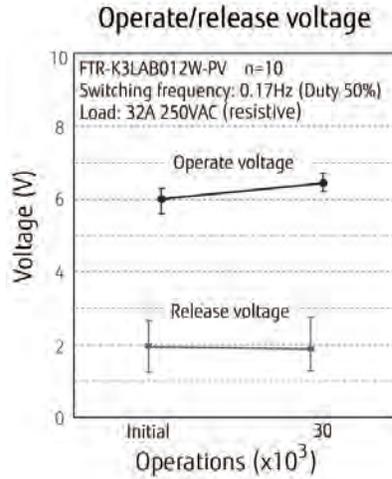
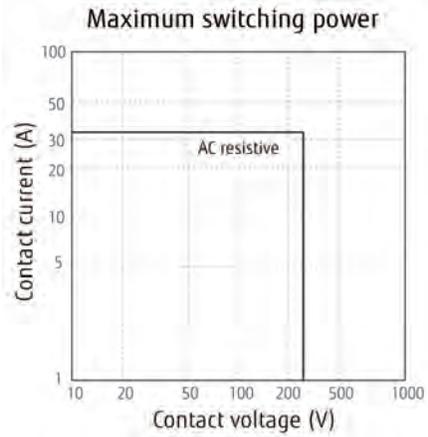
| Type | Compliance | Contact rating |
|------|---------------------------|--|
| UL | UL 508 | Flammability: UL 94-V0 (plastics) 32A, 277VAC (General use at 60 °C) |
| | CSA 22.2 No.14 (by cULus) | |
| VDE | IEC61810-1 | 32A, 250VAC (cosφ = 0.8) at +85 °C |

FTR-K3L-PV SERIES

CHARACTERISTIC DATA

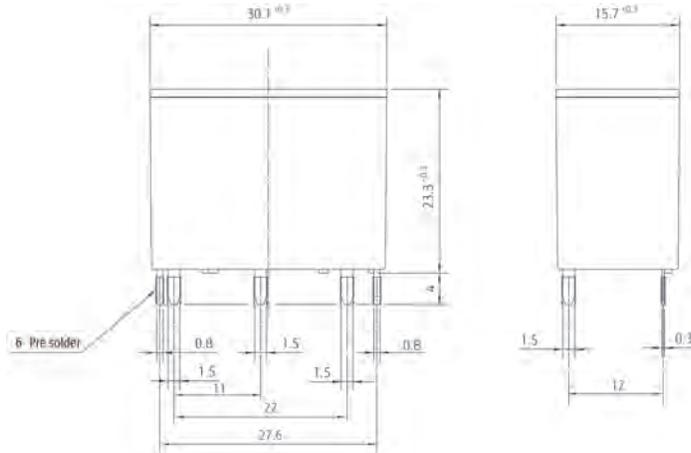
The graphs are based on measurement data and are typical values.

Electrical life tests (resistive load)

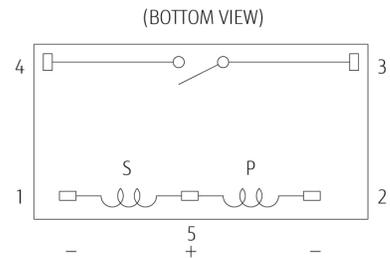


DIMENSIONS

Dimensions



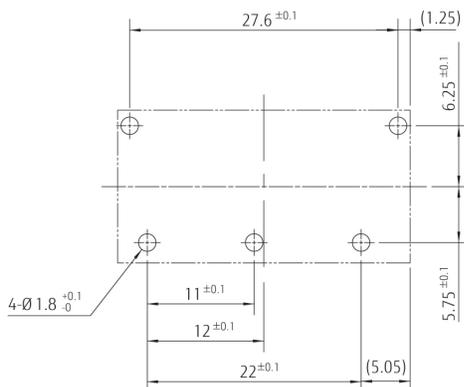
Schematics



P: Set coil
S: Reset coil

Contacts drawn in reset condition.
To operate (set), apply (+) to pin 5 and (-) to pin 2.
To release (reset), apply (+) to pin 5 and (-) to pin 1.

PC board mounting hole layout (BOTTOM VIEW)



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 9 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.

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://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
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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С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

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- Наличие сертификата ISO.

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- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
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Тел: +7 (812) 336 43 04 (многоканальный)

Email: org@lifeelectronics.ru