

POWER RELAY

1 POLE - High Capacity 32A Type

FTR-K3-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
- Coil holding voltage can be reduced up to 35% of nominal coil voltage (ambient temperature; +20 °C, contact current; 32A)
Power consumption at the lowest coil holding voltage; 147mW
* Coil holding voltage is the coil voltage after 100ms of applied nominal coil voltage
- Plastic materials: Flammability; UL94 V-0
- Cadmium-free contacts
- Flux free, cat. RTII protection
- RoHS compliant.
Please see page 5 for more information



■ PARTNUMBER INFORMATION

[Example] FTR-K3 A B 012 W - PV
 (a) (b) (c) (d) (e) (f)

(a)	Relay type	FTR-K3 : FTR-K3-Series
(b)	Contact configuration	A : 1 form A / PCB type
(c)	Coil power	B : Standard (1,200mW)
(d)	Coil rated voltage	012 : 5.....48 VDC Coil rating table at page 3
(e)	Contact material	W : Silver alloy
(f)	Option code	PV : High current (32A) / contact gap 1.5mm

E.g.: Ordering code: FTR-K3AB012W-PV

Actual marking: K3AB012W-PV

FTR-K3-PV SERIES

■ SPECIFICATION

Item	FTR-K3 high capacity type		
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 *1	100mA, 5VDC (reference value)	
Life	Mechanical	Min. 1 x 10 ⁶ operations	
	Electrical (resistive)	32A / 250VAC, min. 30 x 10 ³ operations	
	Electrical (inductive)	Endurance: 32A, 250VAC, cos φ = 0.8, min. 30 x 10 ³ operations Overload: 48A, 250VAC, cos φ = 0.8, min. 50 operations	
Coil Data	Rated power (at 20 °C)	1,200mW	
	Operate power (at 20 °C)	590mW	
	Coil power at holding voltage	147mW (35% of nominal coil voltage)	
	Holding voltage range *2	35~120% of nominal coil voltage (32A at + 20 °C) 45~80% of nominal coil voltage (32A at + 85 °C)	
	Operating temperature range	-40 °C to +60 °C (coil nominal voltage) -40 °C to +85 °C (holding voltage; 45~80% of nominal coil voltage)	
Timing Data	Operate (at nominal voltage)	Max. 20ms (without bounce)	
	Release (at nominal voltage)	Max. 10ms (no diode, without bounce)	
Insulation	Contact gap (initial)	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
	EN61810-1, VDE0435	Voltage	250VAC
Pollution degree		3	
Material group		IIIa	
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

*1 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.

*2 Coil holding voltage is the coil voltage after 100ms of applied nominal coil voltage.

FTR-K3-PV SERIES

■ COIL RATING

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *1	Must Release Voltage (VDC) *1	Min. Non Release Voltage (VDC) *1	Rated Power (mW)
005	5	21	3.5	0.5	1.75	1,200 (147)*2
006	6	30	4.2	0.6	2.1	
009	9	68	6.3	0.9	3.15	
012	12	120	8.4	1.2	4.2	
018	18	270	12.6	1.8	6.3	
024	24	480	16.8	2.4	8.4	
048	48	1,920	33.6	4.8	16.8	

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

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

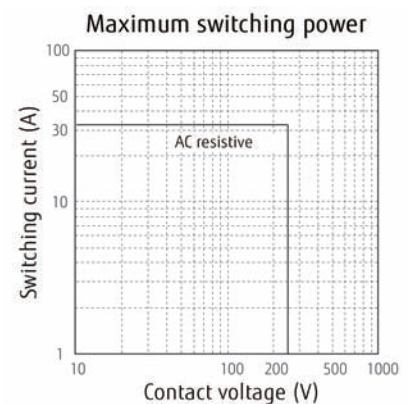
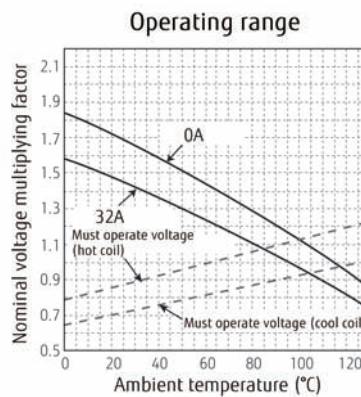
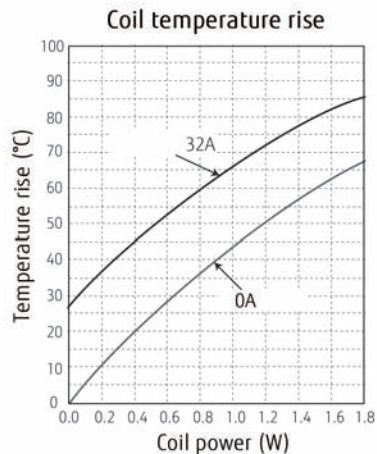
*2 This value is the coil power at 35% of nominal voltage at 20°C.

■ SAFETY STANDARDS

Type	Compliance	Contact rating
UL	UL 508	Flammability: UL 94-V0 (plastics)
	CSA 22.2 No.14 (approved by cULus)	32A, 277VAC (General use at +60 °C) 30,000 cycles
VDE	IEC61810-1	32A, 250VAC (cos φ = 0.8 at +85 °C) 30,000 cycles

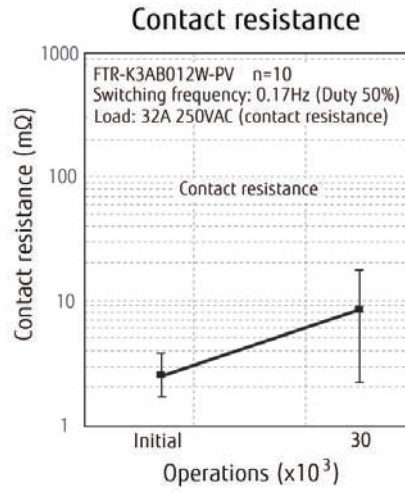
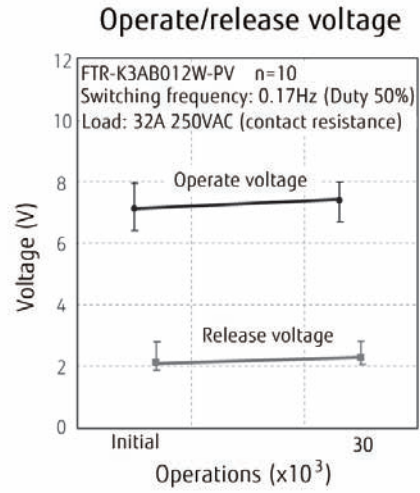
■ CHARACTERISTIC DATA

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



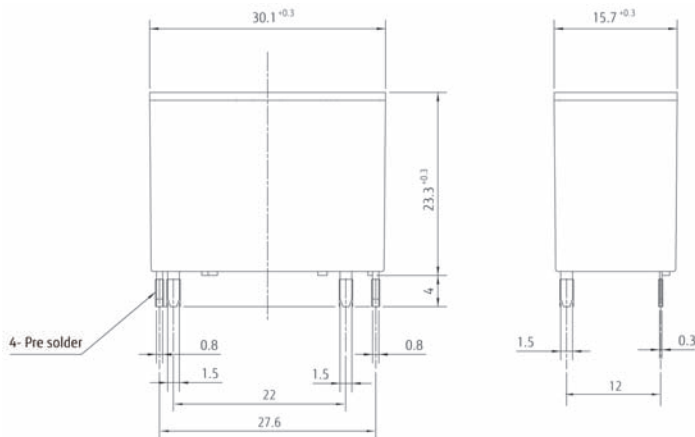
FTR-K3-PV SERIES

Electrical life tests (resistive load)

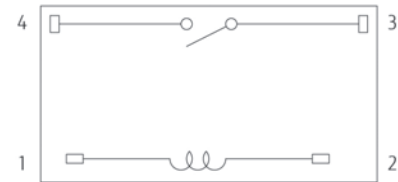


■ DIMENSIONS

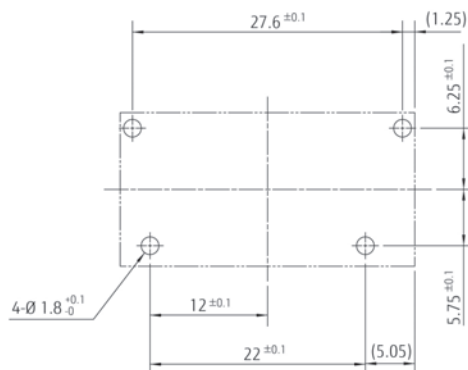
● Dimensions



● Schematics (BOTTOM VIEW)



● PC board mounting hole layout (BOTTOM VIEW)



Unit:mm

RoHS Compliance and Lead Free Information

1. General Information

- All signal and power relays produced by Fujitsu Components are compliant with RoHS directive 2002/95EC 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
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](mailto:fcsl@fcal.fujitsu.com)
Web: <http://www.fujitsu.com/sg/services/micro/components/>

©2011 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. July 04, 2011

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Fujitsu:

[FTR-K3AB012W-PV](#) [FTR-K3AB024W-PV](#)