

POWER RELAY

1 POLE—5 A (MEDIUM LOAD CONTROL)

JV SERIES

RoHS compliant

■ FEATURES

- UL, CSA, VDE, SEMKO recognized
- UL class B (130°C) insulation
- Low profile and space saving
 - Height: 12.5 mm
 - Mounting space: 175 mm²
- High sensitivity in small package
 - Operating power: 0.112 to 0.13 W
 - Nominal power: 0.2 to 0.3 W
- High insulation with reinforced insulation system (between coil and contacts)
 - Insulation distance: 8 mm
 - Dielectric strength: 5,000 VAC
 - Surge strength: 10,000 V
- Plastic materials—UL94 flame class V-0
 - UL CTI level class 2
- Plastic sealed type
- Cadmium free contacts
- RoHS compliant since date code: 0434R
Please see page 5 for more information



■ ORDERING INFORMATION

[Example] JV - 12 S - K T
 (a) (*) (b) (c) (d) (e)

(a)	Series Name	JV : JV Series
(b)	Nominal Voltage	Refer to the COIL DATA CHART
(c)	Coil Type	Nil : Single type S : High sensitivity type
(d)	Enclosure	K : Plastic sealed type
(e)	Mounting	T : High density mounting type

Note: Actual marking omits the hyphen (-) of (*)

■ SAFETY STANDARD AND FILE NUMBERS

UL 508, 873 (File No. E56140)

C22.2 No. 14 (File No. LR35579)

CSA certified to NRTL/C (class 3211-87)

VDE 0435, 0631, 0700 (File No. 11039-4940-1012)

Nominal voltage	Contact rating
3 to 48 VDC	1/8 HP 125 VAC/250 VAC 5 A 30 VDC/250 VAC, resistive 2 A 250 VAC inductive (PF=0.4) Pilot duty C 300

■ SPECIFICATIONS

Item		Standard Type JV-()	High Sensitivity Type JV-() S
Contact	Arrangement	1 form A (SPST-NO)	
	Material	Silver alloy	
	Type	Single	
	Resistance (initial)	Maximum 70 mΩ (at 1 A 6 VDC)	
	Rating (resistive)	5 A 250 VAC or 5 A 30 VDC	
	Maximum Carrying Current	5 A	
	Maximum Switching Power	1,250 VA, 150 W	
	Maximum Switching Voltage	250 VAC, 150 VDC	
	Maximum Switching Current	5 A	
	Minimum Switching Load*1	100 mA 5 VDC	
Coil	Nominal Power (at 20°C)	0.3 W	0.2 W
	Operate Power (at 20°C)	0.13 W	0.113 W
	Operating Temperature	-40°C to +70°C (no frost) (refer to the CHARACTERISTIC DATA)	
Time Value	Operate (at nominal voltage)	Maximum 8 ms	
	Release (at nominal voltage)	Maximum 4 ms	
Insulation	Resistance (500 VDC)	Minimum 1,000 MΩ	
	Dielectric Strength	between open contacts	750 VAC 1 minute
		between coil and contacts	5,000 VAC 1 minute
	Surge Strength	10,000 V (1.2 x 50 μs (between coil and contacts))	
Life	Mechanical	5 × 10 ⁶ operations minimum	
	Electrical	1 × 10 ⁵ operations minimum (contact rating)	
Other	Vibration Resistance	Misoperation	10 to 55 Hz (double amplitude of 1.65 mm)
		Endurance	10 to 55 Hz (double amplitude of 5.0 mm)
	Shock Resistance	Misoperation	100 m/s ² (11 ±1 ms)
		Endurance	1,000 m/s ² (6 ±1 ms)
	Weight	Approximately 4.3 g	

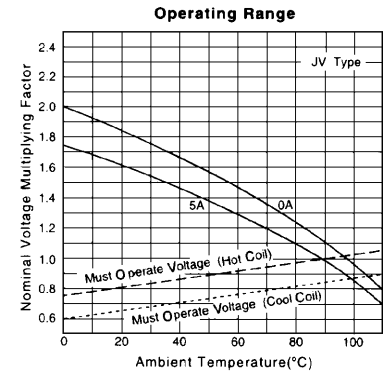
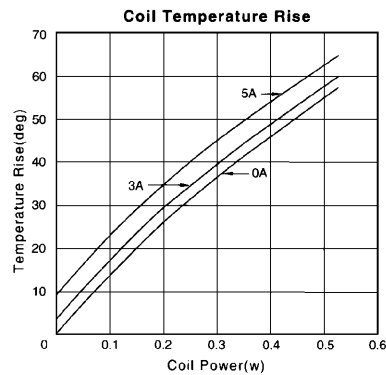
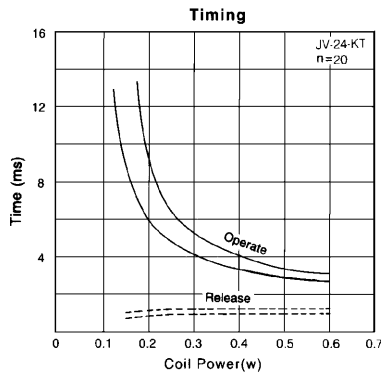
*1 Minimum switching loads mentioned above are reference values. Please perform the confirmation test with the actual load before production since reference values may vary according to switching frequencies, environmental conditions and expected reliability levels.

COIL DATA CHART

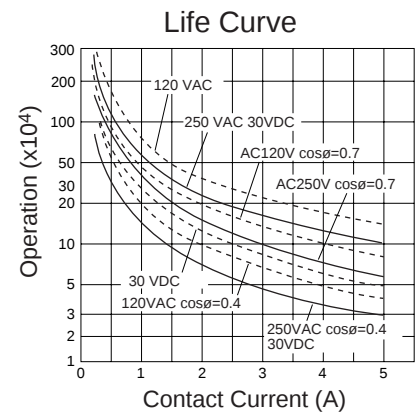
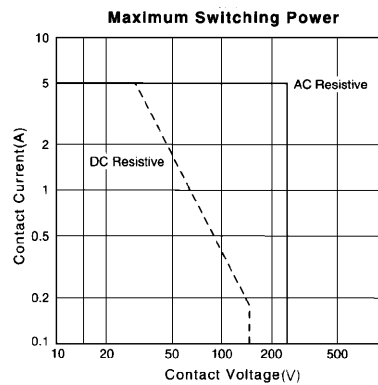
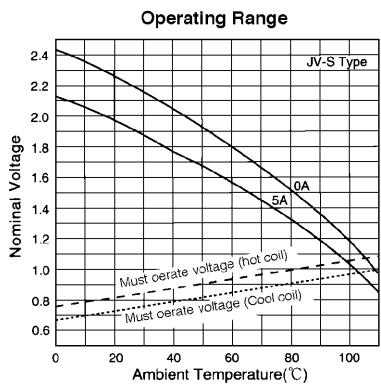
	MODEL	Nominal voltage	Coil resistance ($\pm 10\%$)	Must operate voltage	Must release voltage	Nominal power
Standard Type	JV- 3-KT	3 VDC	30 Ω	+1.98 VDC	+0.15 VDC	300 mW
	JV- 5-KT	5 VDC	83.3 Ω	+3.3 VDC	+0.25 VDC	300 mW
	JV- 6-KT	6 VDC	120 Ω	+3.96 VDC	+0.3 VDC	300 mW
	JV- 9-KT	9 VDC	270 Ω	+5.94 VDC	+0.45 VDC	300 mW
	JV-12-KT	12 VDC	480 Ω	+7.9 VDC	+0.6 VDC	300 mW
	JV-18-KT	18 VDC	1,080 Ω	+11.9 VDC	+0.9 VDC	300 mW
	JV-24-KT	24 VDC	1,920 Ω	+15.8 VDC	+1.2 VDC	300 mW
	JV-48-KT	48 VDC	7,680 Ω	+31.7 VDC	+2.4 VDC	300 mW
High Sensitivity Type	JV- 3S-KT	3 VDC	45 Ω	+2.25 VDC	+0.15 VDC	200 mW
	JV- 5S-KT	5 VDC	125 Ω	+3.75 VDC	+0.25 VDC	200 mW
	JV- 6S-KT	6 VDC	180 Ω	+4.5 VDC	+0.3 VDC	200 mW
	JV- 9S-KT	9 VDC	405 Ω	+6.75 VDC	+0.45 VDC	200 mW
	JV-12S-KT	12 VDC	720 Ω	+9.0 VDC	+0.6 VDC	200 mW
	JV-18S-KT	18 VDC	1,620 Ω	+13.5 VDC	+0.9 VDC	200 mW
	JV-24S-KT	24 VDC	2,880 Ω	+18.0 VDC	+1.2 VDC	200 mW

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

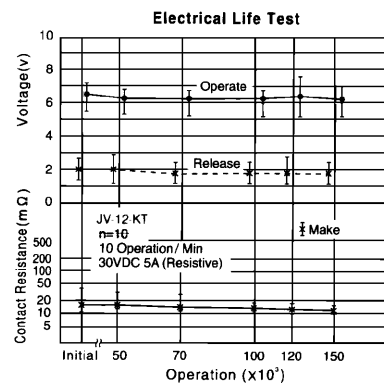
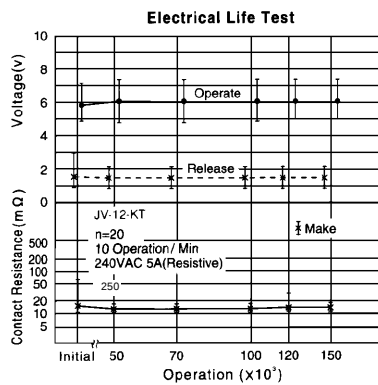
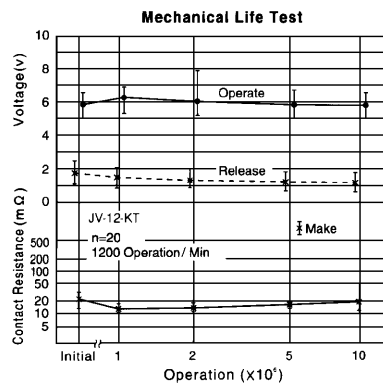
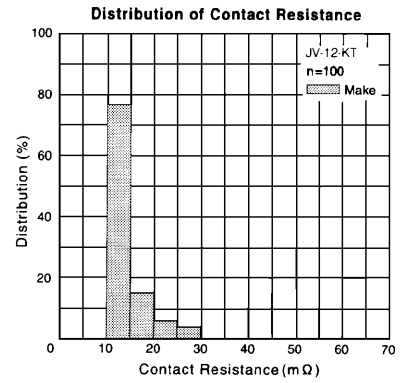
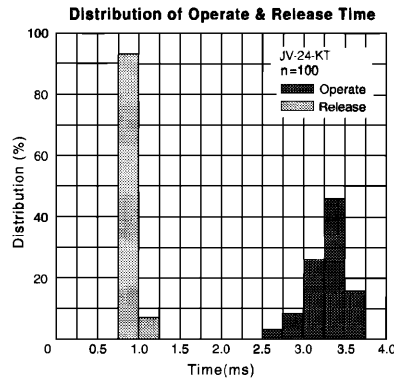
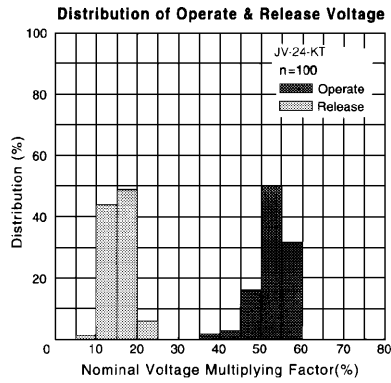
CHARACTERISTIC DATA



REFERENCE DATA



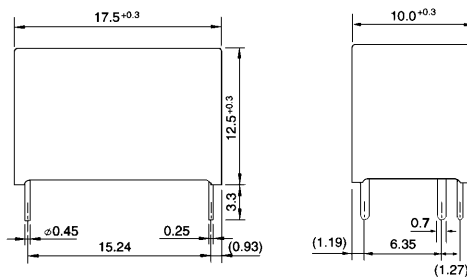
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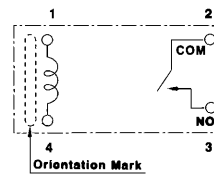
DIMENSIONS

● Dimensions

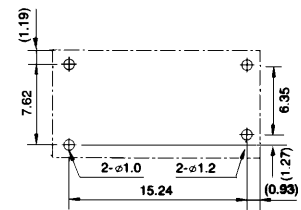
JV-KT type



● Schematics (BOTTOM VIEW)



● PC board mounting hole layout (BOTTOM VIEW)



Unit: mm

RoHS Compliance and Lead Free Relay Information

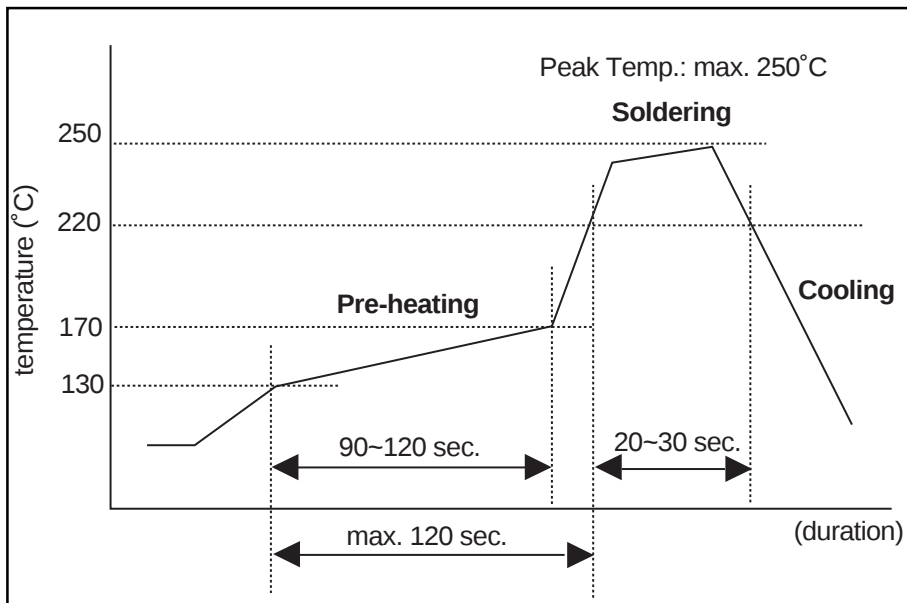
1. General Information

- Relays produced after the specific date code that is indicated on each data sheet are lead-free now. Most of our signal and power relays are lead-free. Please refer to Lead-Free Status Info. (<http://www.fcai.fujitsu.com/pdf/LeadFreeLetter.pdf>)
- Lead free solder paste currently used in relays is Sn-3.0Ag-0.5Cu. From February 2005 forward Sn-3.0Cu-Ni will be used for FTRB3 and FTR-B4 series relays.
- Most signal and some power relays also comply with RoHS. Please refer to individual data sheets. Relays that are RoHS compliant do not contain the 6 hazardous materials that are restricted by RoHS directive (lead, mercury, cadmium, chromium IV, PBB, PBDE).
- It has been verified that using lead-free relays in lead 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.

2. Recommended Lead Free Solder Profile

- Recommended solder paste Sn-3.0Ag-0.5Cu and Sn-3.0 Cu-Ni (only FTR-B3 and FTR-B4 from February 2005)

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

- SnAgCu solder is known as low risk of tin whisker. No considerable length whisker was found by our in-house test.

5. Solid State Relays

- Each lead terminal will be changed from solder plating to Sn plating and Nickel plating. A layer of Nickel plating is between the terminal and the Sn plating to avoid whisker.

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: marcom@fcai.fujitsu.com
Web: www.fcai.fujitsu.com

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: www.fceu.fujitsu.com

Asia Pacific

Fujitsu Components Asia Ltd.
102E Pasir Panjang Road
#04-01 Citilink Warehouse Complex
Singapore 118529
Tel: (65) 6375-8560
Fax: (65) 6273-3021
Email: fcal@fcal.fujitsu.com
www.fcal.fujitsu.com

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