FUJITSU

POWER RELAY
1 POLE - 5A/10A Medium Load Control
JV Series

■ FEATURES

- UL, CSA, VDE, SEMKO, CQC recognized
- UL class B (130°C) wire class
- Low profile and space saving
  - Height: 12.5 mm
  - Mounting space: 175 mm^2
- 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, RTIII
- RoHS compliant.

Please see page 7 for more information

■ PARTNUMBER INFORMATION

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

(a)	Relay type	JV	: JV-Series
(b)	Coil rated voltage	12	: 3.....48 VDC Coil rating table at page 3
(c)	Coil type	Nil S	: Standard type (300mW) (not for -KS type) : High sensitive type (200mW) (-KS type: 250mW)
(d)	Enclosure	K	: Plastic sealed type, RTIII
(f)	Construction	T S	: High density mounting type : High power type 10A

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

■ SPECIFICATION

Item			Standard type	High sensitive type	High power type
			JV - ( )	JV - ( ) S	JV- ( ) - KS
Contact Data	Configuration		1 form A (SPST-NO)		
	Construction		Single		
	Material		Silver alloy AgNi + Au		$AgSnO_2$ + Au
	Resistance (Initial)		Max. 70 mΩ at 6 VDC, 1 A		
	Contact rating		5A, 250VAC / 30VDC (resistive load)		10A, 250VAC / 24VDC
	Max. carrying current		5A		10A
	Max. switching voltage		250VAC / 150 VDC		
	Max. switching power		1,250VA / 150W		2,500VA / 240W
	Max. switching current		5A		10A
	Min. switching load *		100 mA, 5 VDC		
Life	Mechanical		Min. 5 x 10^6 operations		
	Electrical		Min. 100 x 10^3 operations		Min. 50 x 10^3 operations
Coil Data	Rated power (at 20 °C)		300mW	200mW	250mW
	Operate power (at 20 °C)		130mW	113mW	145mW
	Operating temperature range		-40 °C to +70 °C (no frost)		-40 °C to +85°C (no frost)
Timing Data	Operate (at nominal voltage)		Max. 8 ms (without bounce)		
	Release (at nominal voltage)		Max. 4 ms (no diode)		
Insulation	Resistance (initial)		Min 1,000MΩ at 500VDC		
	Dielectric strength	Open contacts	750VAC, 1 min.		
		Contacts to coil	5,000VAC, 1 min.		
	Surge strength	Coil to contacts	10,000V / 1.2 x 50μs standard wave		
Other	Vibration resistance	Misoperation	10 to 55Hz double amplitude 1.65 mm		
		Endurance	10 to 55Hz double amplitude 5 mm		
	Shock	Misoperation	Min. 100m/s² (11 ± 1ms)		
		Endurance	Min. 1,000m/s² (6 ± 1ms)		
	Weight		Approximately 4.3 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

Standard type (300 mW)

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release Voltage (VDC) *	Rated Power (mW)
3	3	30	1.98	0.15	300 mW
5	5	83.3	3.3	0.25	
6	6	120	3.96	0.3	
9	9	270	5.94	0.45	
12	12	480	7.9	0.6	
24	24	1,920	15.8	1.2	
48	48	7,680	31.7	2.4	

High sensitive type (200 mW)

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release Voltage (VDC) *	Rated Power (mW)
3	3	45	2.25	0.15	200 mW
5	5	125	3.75	0.25	
6	6	180	4.5	0.3	
9	9	405	6.75	0.45	
12	12	720	9	0.6	
18	18	1,620	13.5	0.9	
24	24	2,880	18	1.2	

10A High power type (250 mW)

Coil Code	Rated Coil Voltage (VDC)	Coil Resistance +/- 10% (Ohm)	Must Operate Voltage (VDC) *	Must Release Voltage (VDC) *	Rated Power (mW)
3	3	36	2.1	0.3	250 mW
5	5	100	3.5	0.5	
6	6	144	4.2	0.6	
9	9	324	6.3	0.9	
12	12	576	8.4	1.2	
18	18	1,296	12.6	1.8	
24	24	2,304	14.9	2.4	

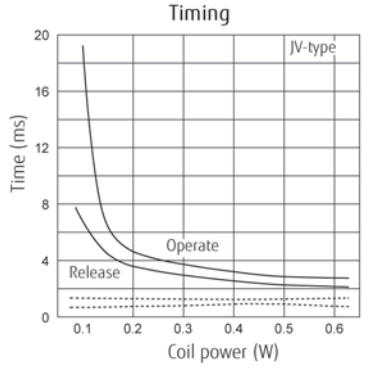
Note: All values in the tables are valid for 20°C and zero contact current.
* Specified operate values are valid for pulse wave voltage.

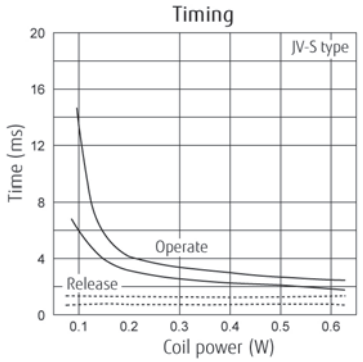
■ SAFETY STANDARDS

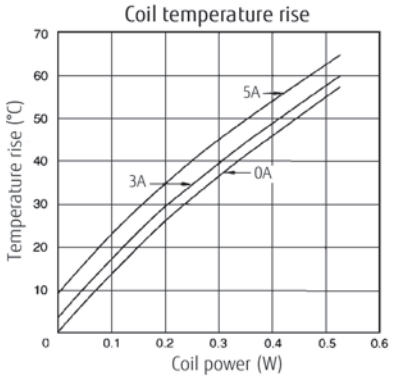
Type	Compliance	Contact rating
UL	UL 508, UL 873 E56140	Flammability: UL 94-V0 (plastics) 5A, 250 VAC / 30 VDC (resistive) 1/8 HP, 125VAC/250VAC
CSA	C22.2 No. 14 LR 35579	Pilot duty: C300
VDE	0435, 0631, 0700 40016247	5A, 250VAC (cosφ1), 100K 2A, 250VAC (cos φ0.4), 100K 5A, 30VDC (omsec), 100K 10A, 250VAC (cosφ1), JV-KS, 25K 10A, 30VDC (0msec), JV-KS, 100K

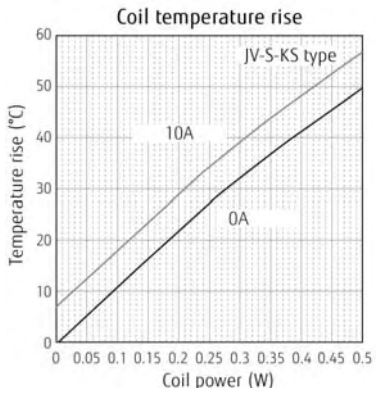
Also complies with SEMKO, CQC.
Please contact sales office when SEMKO, CQC logo marking is neccessary on the cover.

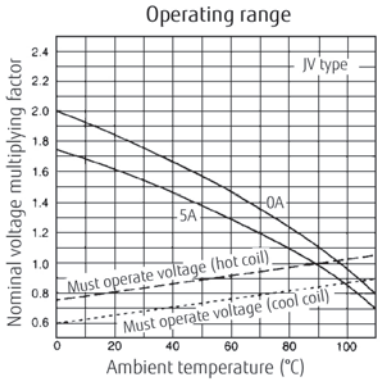
■ CHARACTERISTIC DATA

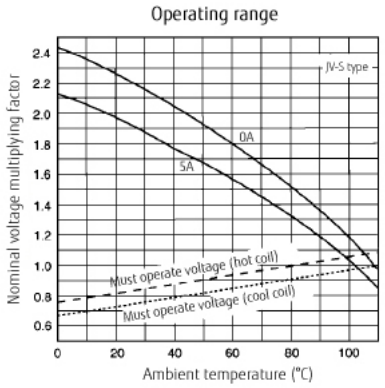


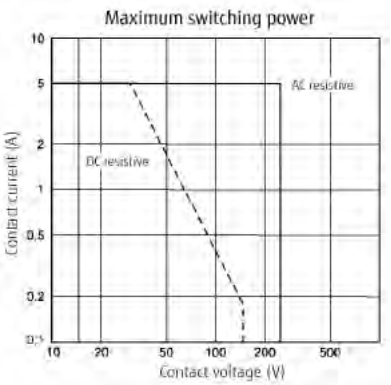


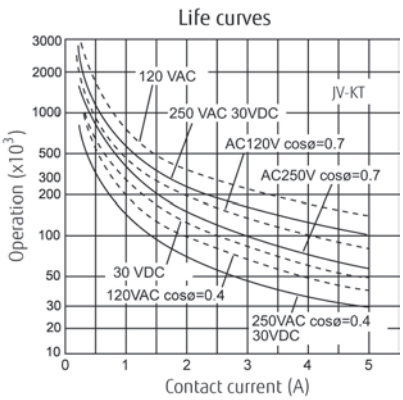




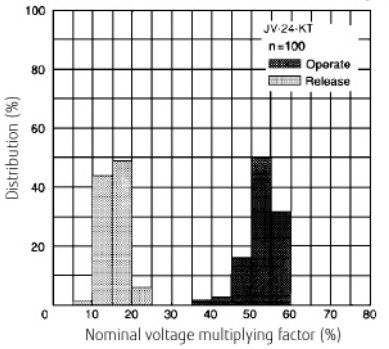




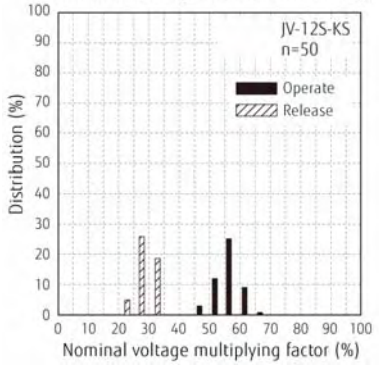




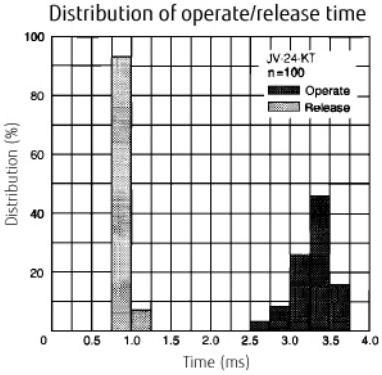
Distribution of operate/release voltage



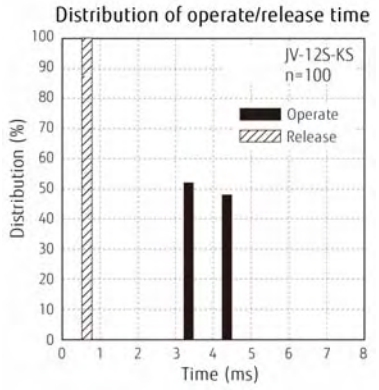
Distribution of operate/release voltage



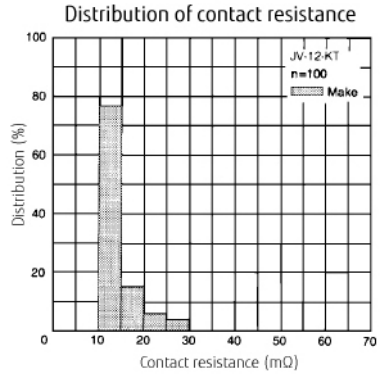
Distribution of operate/release time



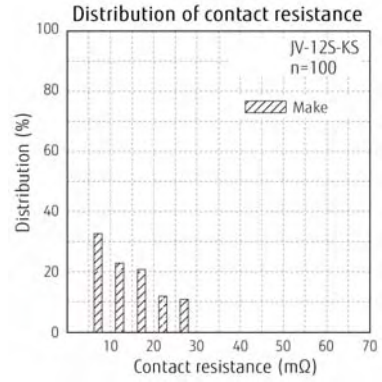
Distribution of operate/release time



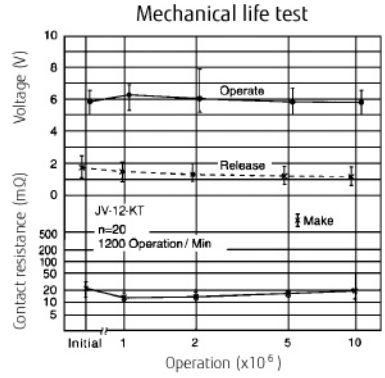
Distribution of contact resistance



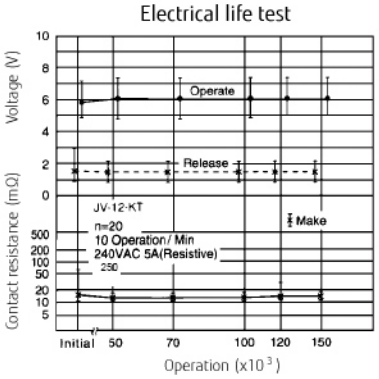
Distribution of contact resistance



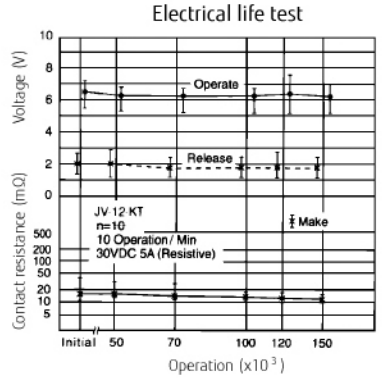
Mechanical life test



Electrical life test



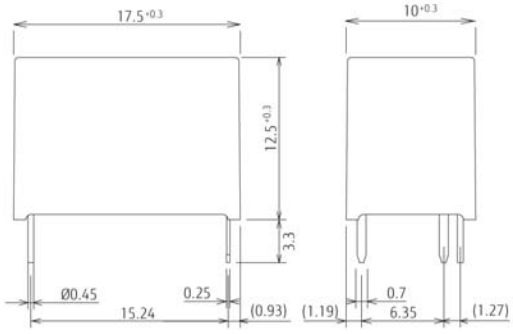
Electrical life test



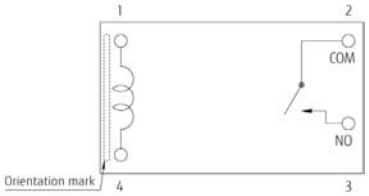
■ DIMENSIONS

JV-KT type + JV-( )S-KS

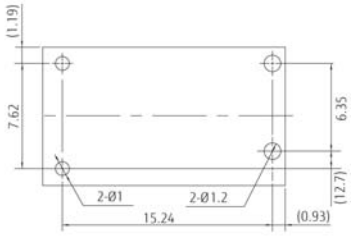
- **Dimensions**



- **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.