FUJITSU THE POSSIBILITIES ARE INFINITE

POWER RELAY

1 POLE—5,10, 16 A (TV-5 rated Cadmium free type)

FTR-F2 / H2 / K2 Series

RoHS compliant

■ FEATURES

- HIGH DENSITY MOUNTING
  25mm height and 275mm^2 mounting space
- HIGH ISOLATION
  Insulation Distance: Minimum 6mm between coil and contact
  Dielectric Strength: 4KV
  Surge Strength: 10KV
- TV-5 rated slim type suitable for power supply
- HEAT RESISTANCE, FLAMMABILITY
  Class B (130° C) insulation, flammability 94V-0
- CADMIUM FREE CONTACT FOR ECO-PROGRAM
- SAFETY STANDARDS
  UL, CSA, VDE approved, SEMKO
  UL/CSA TV-5 rating approved
- RoHS compliant since date code: 0437L2
  Please see page 8 for more information

■ ORDERING INFORMATION

[Example] FTR-F2 (a) A (b) K (c) 012 (d) T (e) – ** (f)

(a) Series Name	FTR-F2: FTRF2 series (5A) FTR-H2: FTR-H2 series (10A) FTR-K2: FTR-K2 series (16A)		
(b) Contact Arrangement	A: 1 Form A (SPST-NO)		
(c) Coil Type	K: Standard (530mW) L: High sensitivity (250mW) only FTR-F2 / H2		
(d) Coil Nominal Voltage	005: 5VDC 006: 6VDC 009: 9VDC	012: 12VDC 018: 18VDC* 024: 24VDC	048: 48VDC* *: standard type only
(e) Contact / TV-Rating	T: Silver alloy and TV-5		
(f) Custom Designation (option)	To be assigned custom specification TH: TV-8		

■ SAFETY STANDARD AND FILE NUMBERS

UL508 (File No. E63614)
C22.2 No.1and No. 14 (File No. LR40304)
VDE 0435, 0860 (File No. 11039-4940-1020)

	Nominal voltage	Contact rating
FTR-F2	5 to 48 VDC	TV-5 125 VAC 1/2 HP 250 VAC 1/6 HP 125 VAC 5 A 250 VAC/ 30 VDC resistive 2 A 250 VAC inductive (PF=0.4) Pilot duty C 300
FTR-H2	5 to 48 VDC	TV-5 120 VAC 1/2 HP 250 VAC 1/6 HP 125 VAC 10 A 30 VDC/250 VAC resistive 3A 250VAC inductive (PF=0.4) Pilot duty C300
FTR-K2	5 to 48 VDC	TV-5 120 VAC 1/3 HP 125VAC / 1HP 277VAC 10A 277VAC 16 A 30 VDC / 125VAC resistive Pilot duty C300

■ SPECIFICATIONS

Item			FTR-F2 series		FTR-H2 series		FTR-K2 series
			Standard	Sensitive	Standard	Sensitive	Standard
Contact	Arrangement		1 Form A (SPST-NO)				
	Material		Silver alloy				
	Resistance (initial)		Maximum 100 m ohm (at 1A 6 VDC)				
	Rating (resistive)		250 VAC / 30VDC, 5A		250 VAC / 30VDC, 10A		250 VAC / 30VDC, 16A
	Maximum carrying current		5A		10A		16A
	Maximum switching rating		1,250VA /150W		2,500VA / 300W		4,000VA / 480W
	Maximum switching voltage		400VAC / 300VDC				
	Maximum switching current		5A		10A		16A
	Maximum switching load		100 mA, 5VDC				
	Maximum inrush current		78A, 120 VAC (at lamp load)				
Coil	Nominal power (at 20°C)		530mW	250mW	530mW	250mW	530mW
	Operate power (at 20°C)		260mW	160mW	260mW	160mW	260mW
	Operating temperature		-40°C to +70°C (no frost)				
Time value	Operate time (at nominal voltage)		Maximum 15ms				
	Release time (at nominal voltage)		Maximum 5ms				
Insulation	Resistance (at 500VDCl)		Minimum 1,000M ohm				
	Dielectric strength	between open contacts	1,000 VAC1 minute				
		between coil and contacts	4,000 VAC 1 minute				
	Surge strength		10,000V (at 1.2 x 50μs)				
Life	Mechanical		$2x10^6$ operations minimum				
	Electrical	Contact rating	$100x10^3$ operations minimum				
		Lamp load	$25x10^3$ operations minimum				
Other	Vibration resistance	Misoperation	10-55 Hz)double amplitude of 1.5mm)				
		Endurance	10-55 Hz)double amplitude of 1.5mm)				
	Shock resistance	Misoperation	200m/s2 (11±1ms)				
		Endurance	1,00m/s2 (11±1ms)				
	Weight		Approximately 12g				

■ COIL DATA CHART

Standard Type (530mW)

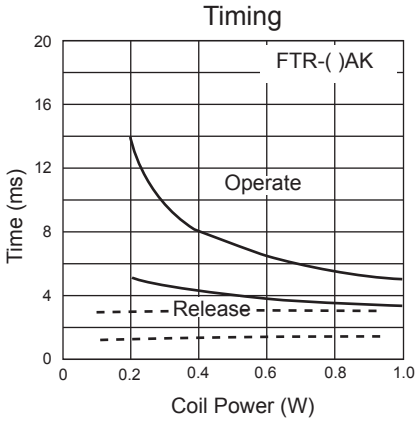
MODEL			Nominal Voltage	Coil Resistance (±10%)	Must Operate Voltage	Must Release Voltage
FTR-F2 series	FTR-H2 series	FTR-K2 series				
FTR-F2AK005T	FTR-H2AK005T	FTR-K2AK005T	5 VDC	47Ω	3.5 VDC	0.25 VDC
FTR-F2AK006T	FTR-H2AK006T	FTR-K2AK006T	6 VDC	68Ω	4.2 VDC	0.30 VDC
FTR-F2AK009T	FTR-H2AK009T	FTR-K2AK009T	9 VDC	155Ω	6.3 VDC	0.45 VDC
FTR-F2AK012T	FTR-H2AK012T	FTR-K2AK012T	12 VDC	270Ω	8.4 VDC	0.60 VDC
FTR-F2AK018T	FTR-H2AK018T	FTR-K2AK018T	18 VDC	610Ω	12.6 VDC	0.90 VDC
FTR-F2AK024T	FTR-H2AK024T	FTR-K2AK024T	24 VDC	1,100Ω	16.8 VDC	1.20 VDC
FTR-F2AK048T	FTR-H2AK048T	FTR-K2AK048T	48 VDC	4,400Ω	33.6 VDC	2.40 VDC

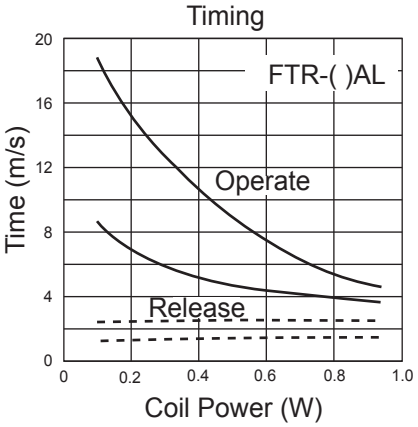
SENSITIVE TYPE (250MW)

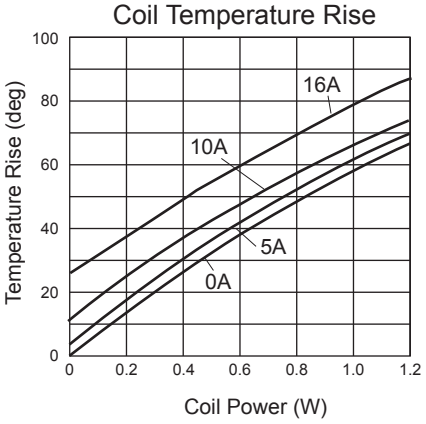
MODEL		Nominal Voltage	Coil Resistance (±10%)	Must Operate Voltage	Must Release Voltage
FTR-F2 series	FTR-H2 series				
FTR-F2AL005T	FTR-H2AL005T	5VDC	100Ω	4.0 VDC	0.25 VDC
FTR-F2AL006T	FTR-H2AL006T	6VDC	145Ω	4.8 VDC	0.30 VDC
FTR-F2AL009T	FTR-H2AL009T	9VDC	325Ω	7.2 VDC	0.45 VDC
FTR-F2AL012T	FTR-H2AL012T	12VDC	575Ω	9.6 VDC	0.60 VDC
FTR-F2AL024T	FTR-H2AL024T	24VDC	2,310Ω	19.2 VDC	1.20 VDC

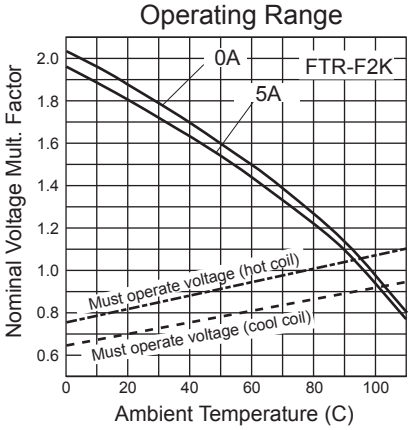
Note: All values in the table are measured at 20°C.

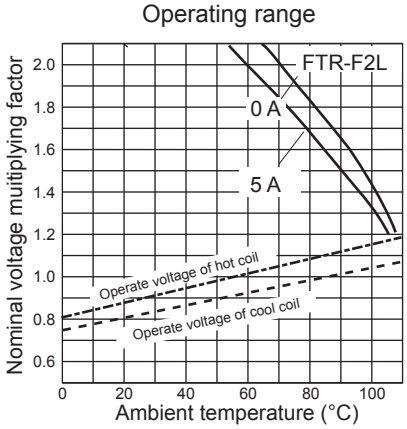
■ REFERENCE DATA

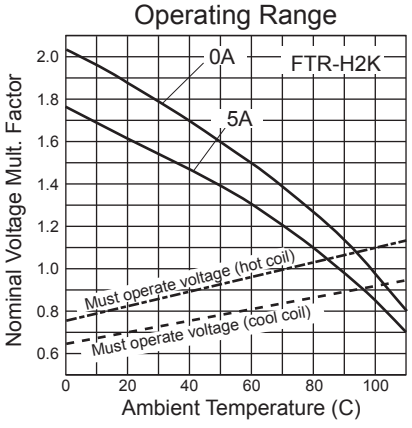




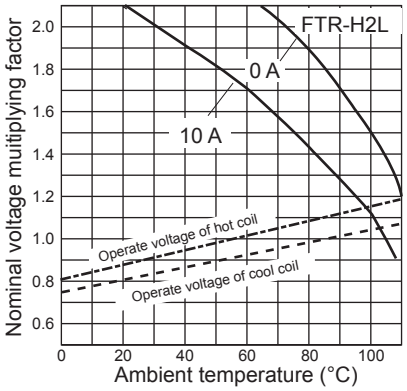




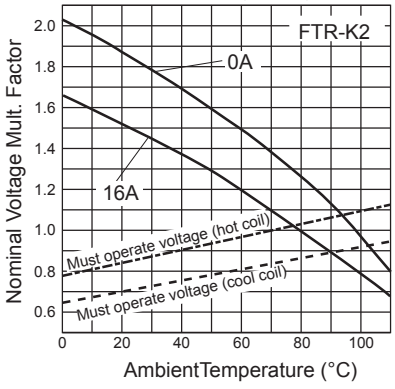




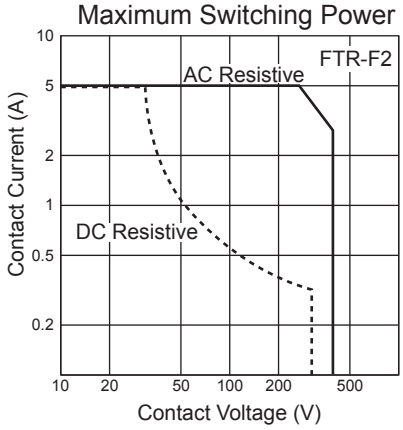
Operating range



Operating Range



Maximum Switching Power



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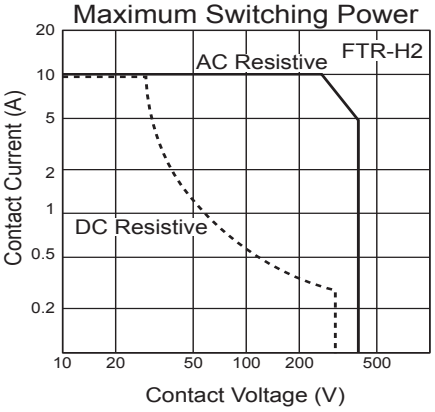

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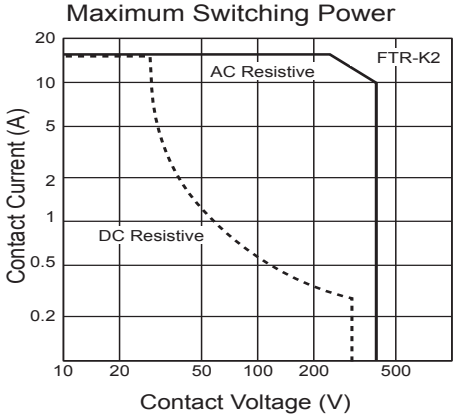
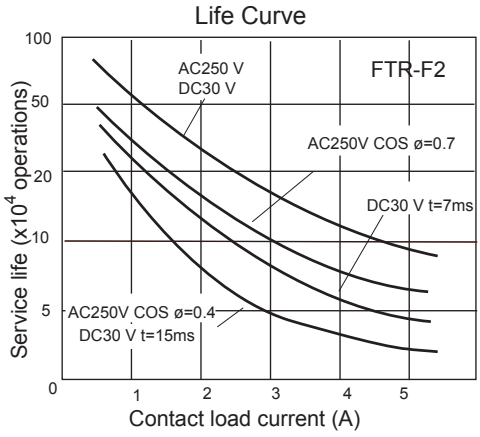
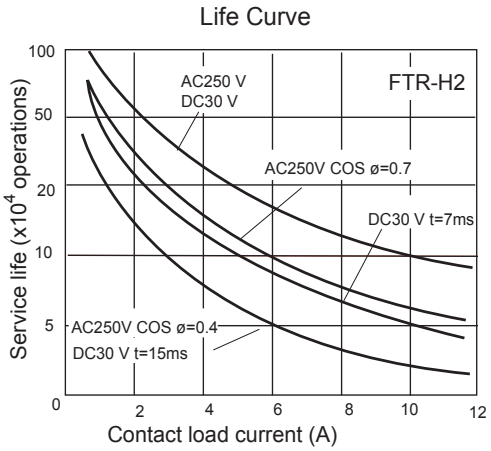


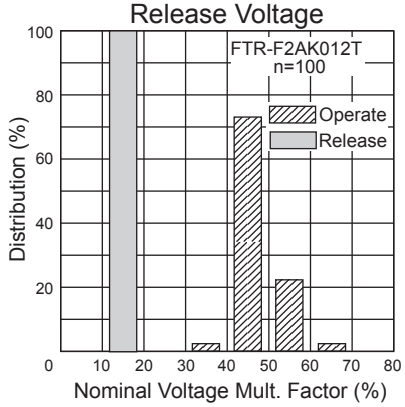
Life Curve



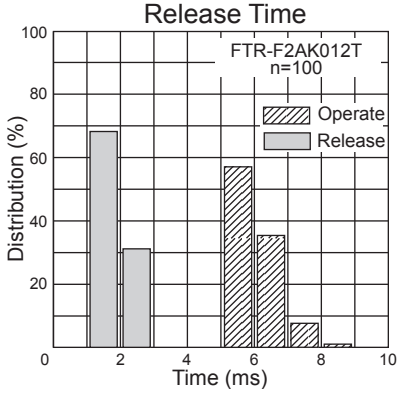
Life Curve



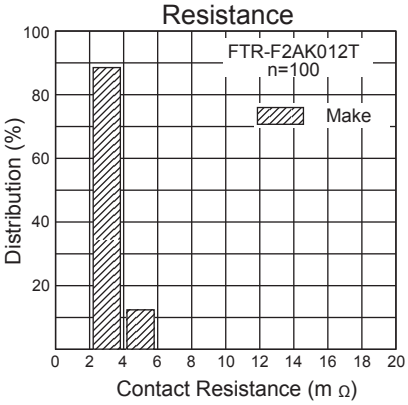
Distribution of Operate & Release Voltage



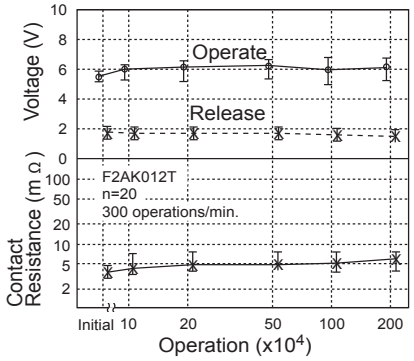
Distribution of Operate & Release Time



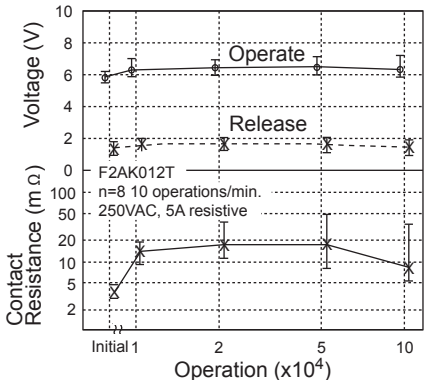
Distribution of Contact Resistance



Mechanical Life Test



Electrical Life Test



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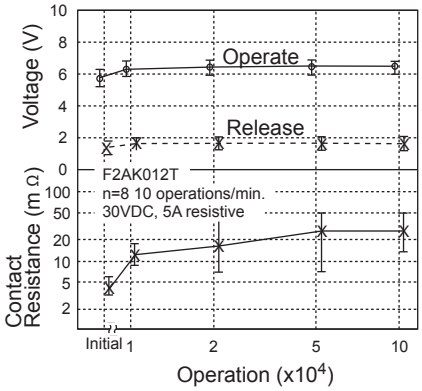

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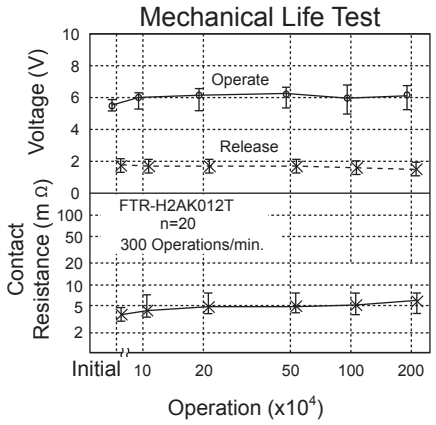

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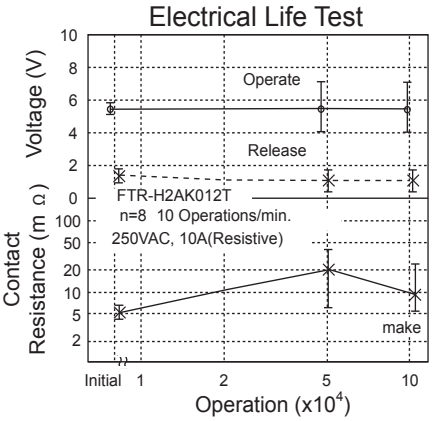

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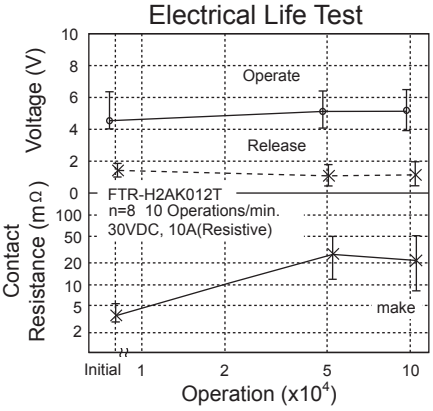

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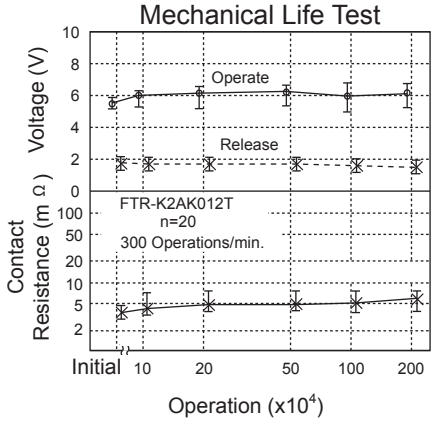

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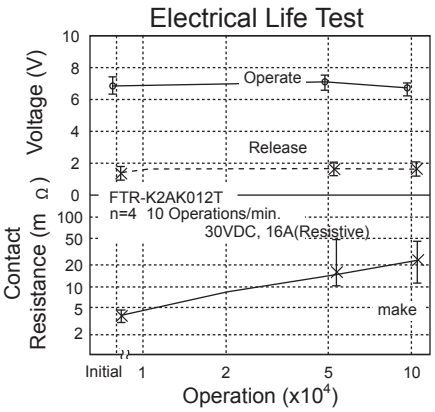

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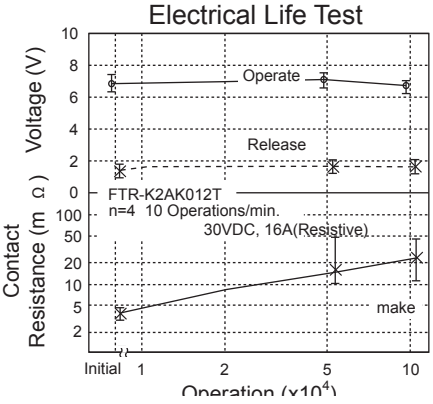
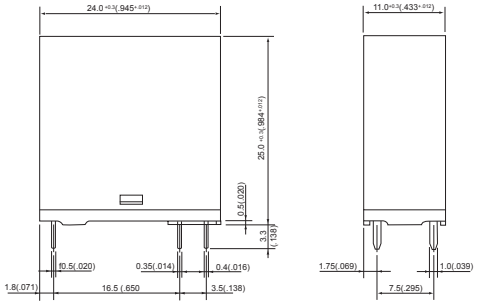
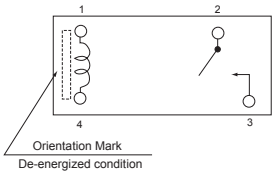


■ DIMENSIONS

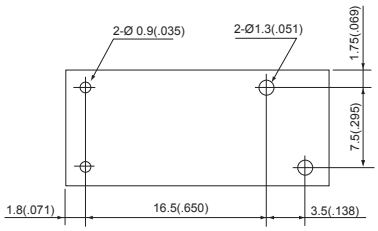
● **Dimensions**



● Schematics
(BOTTOM VIEW)



● **PC board mounting hole layout**
(BOTTOM VIEW)



Unit: mm (in.)

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.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 most 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 condtion

Flow Solder condtion:

Pre-heating:	maximum 120˚C
Soldering:	dip within 5 sec. at 260˚C soler 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 realys.

4. Tin Whisker

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

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