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ELECTRONICS

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Jameco Part Number 2077271

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 275mm² 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 K 012 T — **
 (a) (b) (c) (d) (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 500VDCI)		Minimum 1,000M ohm				
	Dielectric strength	between open contacts	1,000 VAC 1 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 resis- tance	Misoperation	200m/s2 (11±1ms)				
		Endurance	1,00m/s2 (11±1ms)				
	Weight		Approximately 12g				

FTR-F2/H2/K2 Series

COIL DATA CHART

Standard Type (530mW)

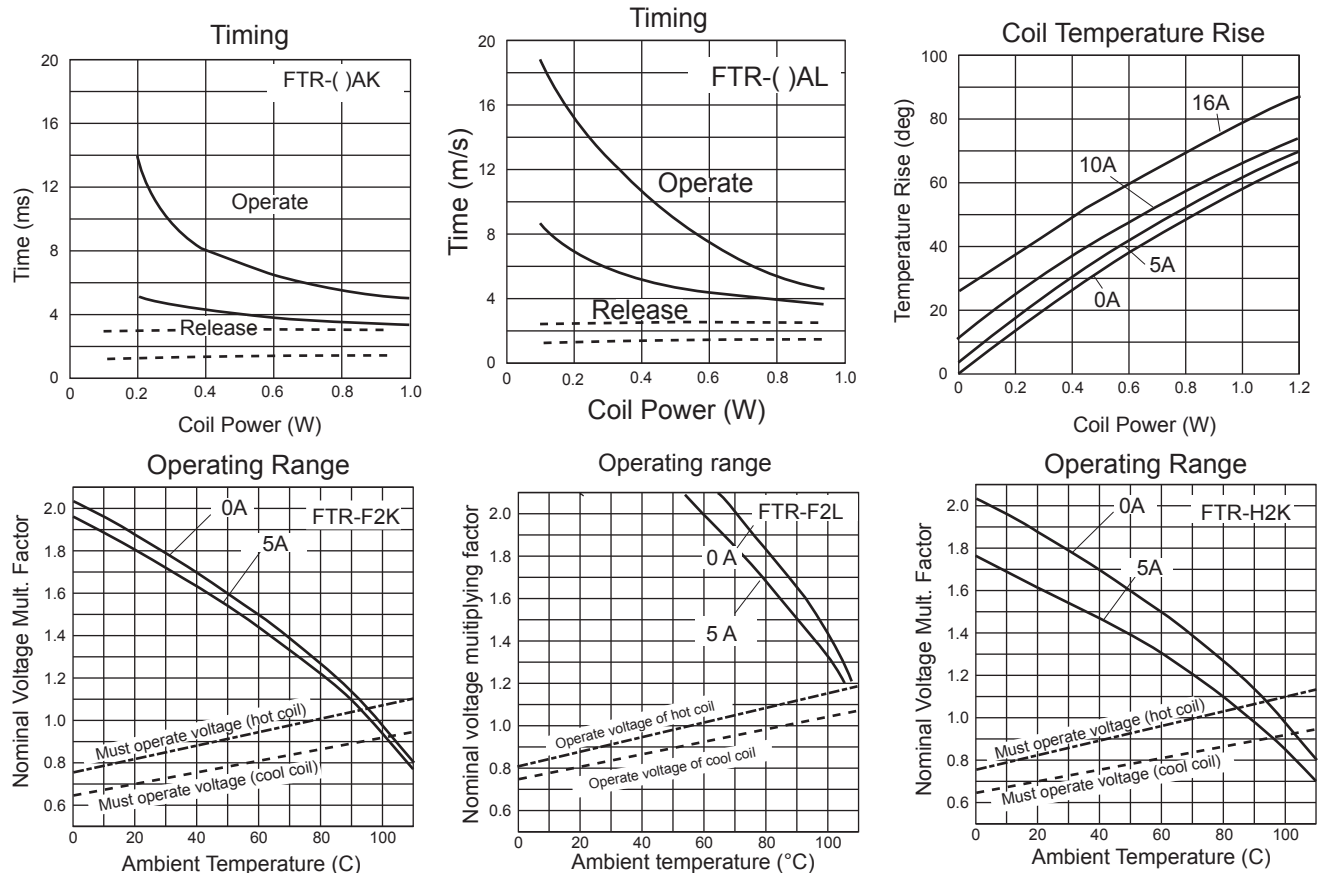
MODEL			Nominal Voltage	Coil Resistance ($\pm 10\%$)	Must Operate Voltage	Must Release Voltage
FTR-F2 series	FTR-H2 series	FTR-K2 series				
FTR-F2AK005T	FTR-H2AK005T	FTR-K2AK005T	5 VDC	47 Ω	3.5 VDC	0.25 VDC
FTR-F2AK006T	FTR-H2AK006T	FTR-K2AK006T	6 VDC	68 Ω	4.2 VDC	0.30 VDC
FTR-F2AK009T	FTR-H2AK009T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

SENSITIVE TYPE (250MW)

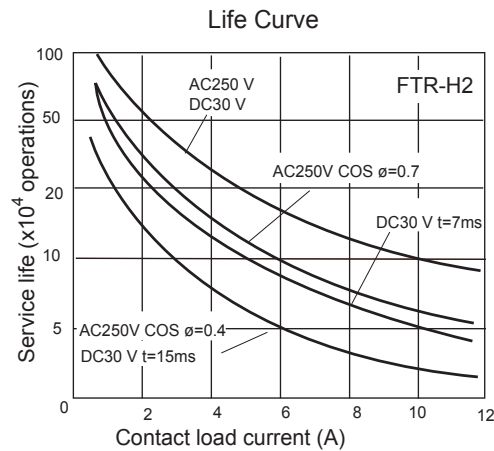
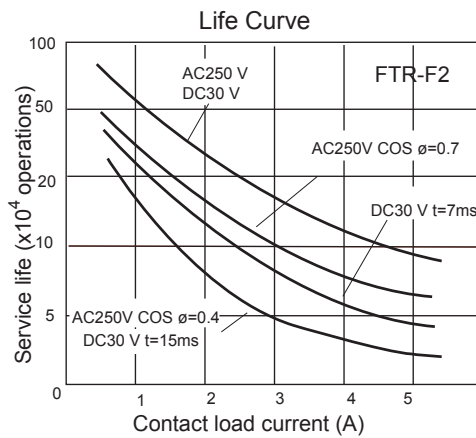
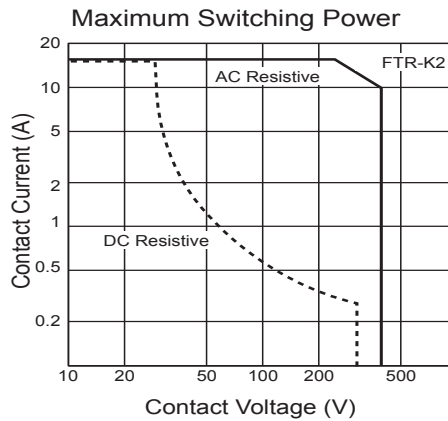
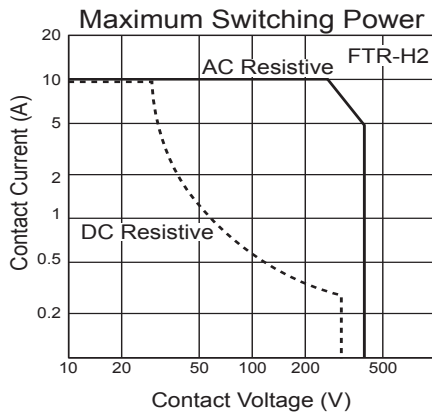
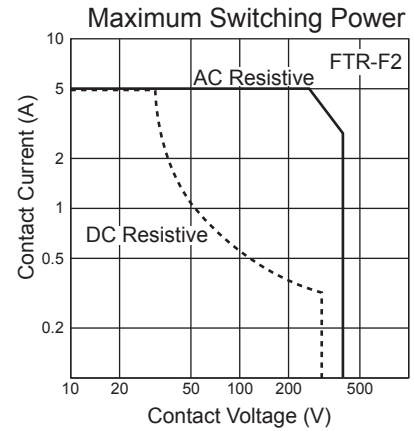
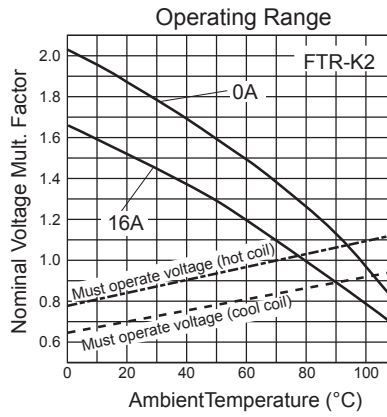
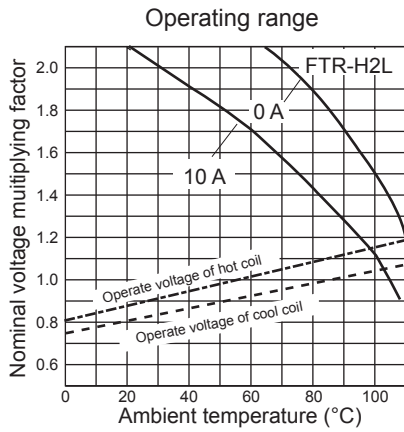
MODEL		Nominal Voltage	Coil Resistance ($\pm 10\%$)	Must Operate Voltage	Must Release Voltage
FTR-F2 series	FTR-H2 series				
FTR-F2AL005T	FTR-H2AL005T	5VDC	100 Ω	4.0 VDC	0.25 VDC
FTR-F2AL006T	FTR-H2AL006T	6VDC	145 Ω	4.8 VDC	0.30 VDC
FTR-F2AL009T	FTR-H2AL009T	9VDC	325 Ω	7.2 VDC	0.45 VDC
FTR-F2AL012T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

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

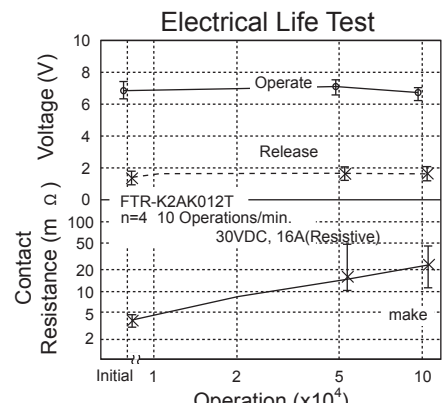
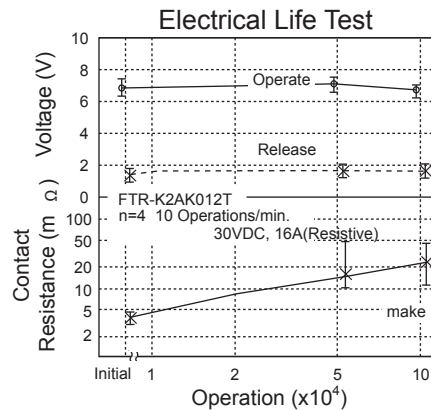
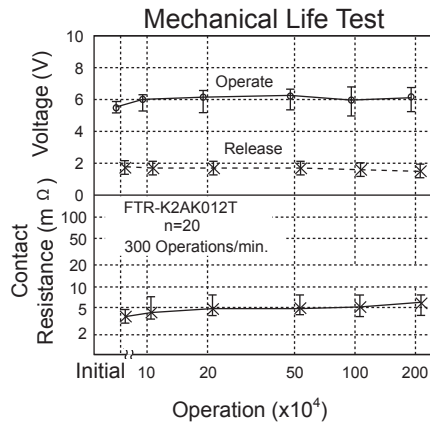
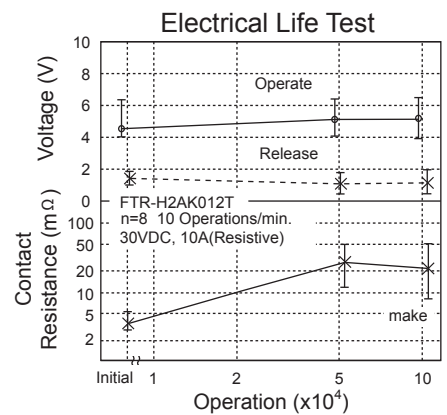
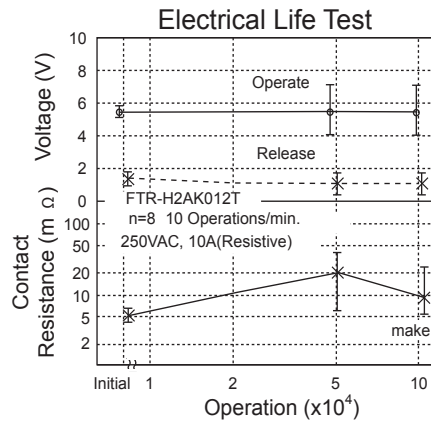
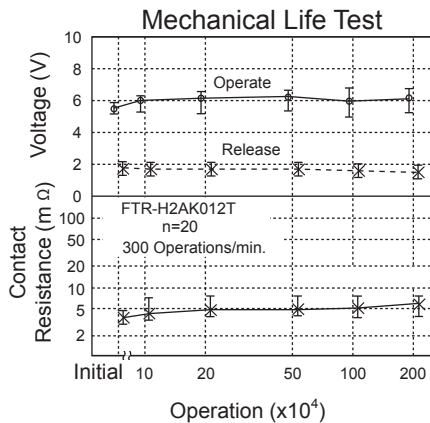
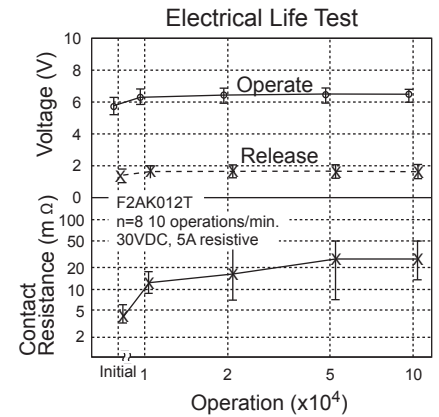
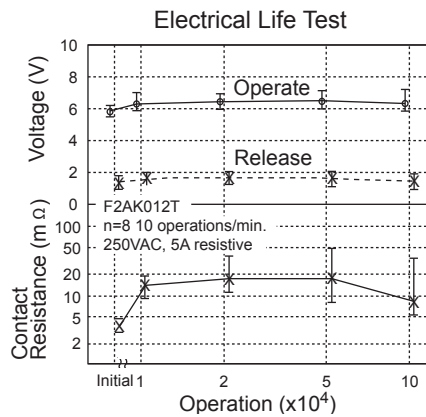
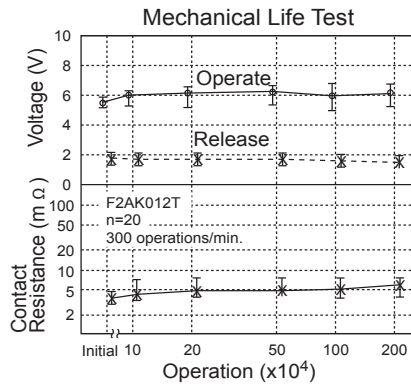
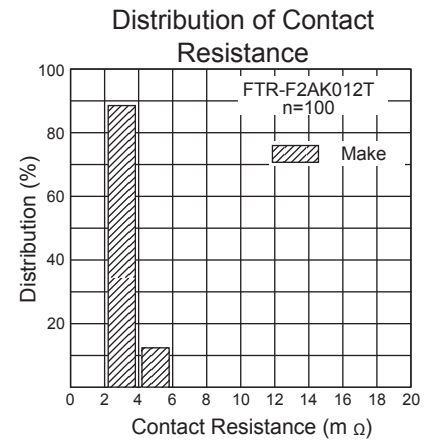
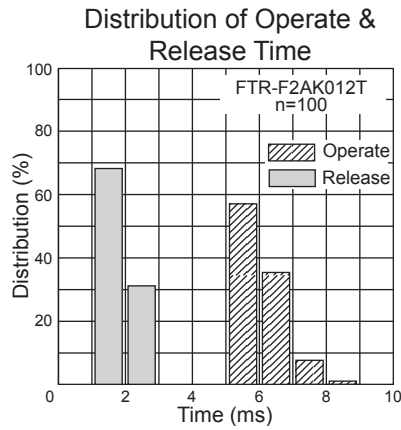
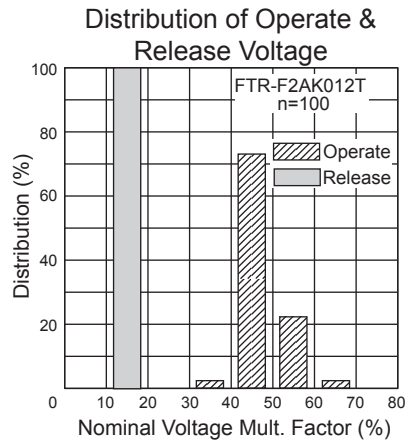
REFERENCE DATA



FTR-F2/H2/K2 Series

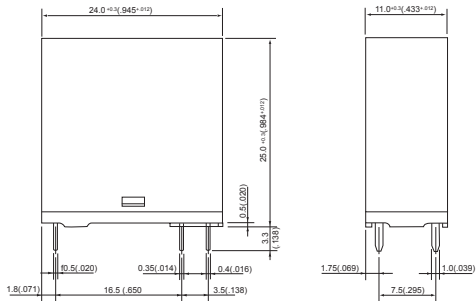


FTR-F2/H2/K2 Series

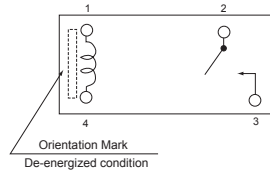


■ DIMENSIONS

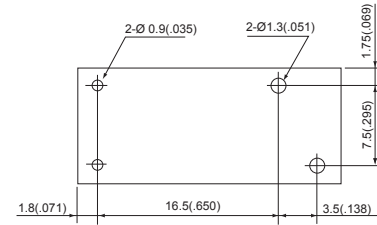
● Dimensions



● 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 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.

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 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

- 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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