CRS Precision electronic Co., LTD		Control NO	EI085
		Issued BY	ED
		Date Issued	2020/04/28
Document Name	SPEC-FP1019H-XXXXX	Date Revised	2021/11/15
		Revised Edition	A1

变更履历：

版本号	变更内容	日期	变更人	核准
AO	新版发行	2020-04-28	于小芳	Leo_he
A1	增加变更履历及编号	2021-11-15	于小芳	Leo_he

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Approval By	Check By	Originator By
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1. SCOPE

1.1 Contents

This specification covers the performance, tests and quality requirements for the FPC Connector

1.2 Qualification

When tests are performed on the subject product line, the procedures specified in CRS Electronics Co.,ltd. inspection plan and product drawings.

2. ORDERING INFORMATION

PART NO.： FP1019H-XXXXX

3. CONNECTOR DIMENSIONS

See attached drawings.

4. MATERIAL

Housing	LCP
	Color : Nature Color
	Flammability Rating (UL94V-0)
Actuator	LCP
	Color:Black
	Flammability Rating (UL94V-0)
Terminal :	Brass
Peg:	Brass
Plating	TIN or Au PLATING

5. ACCOMMODATED P.C.B. LAYOUT

See attached drawings.

6. RATING

ITEM	STANDARD
Operating Voltage (Max.)	50V AC/DC
Current Rating (Max.)	0.5 A AC/DC
Operating Temperature	-25°C ~ +85°C (Including terminal temperature rise)

7. PERFORMANCE

ITEM	TEST CONDITION	REQUIRMENT
Examination of Product	Visual inspection. No physical damage.	Meets requirements of product drawing.
ELECTRICAL PERFORMANCE		
Contact Resistance	Mate applicable FPC/FFC and measure by dry circuit, 20mV Max, 10mA. (JIS C5402 5.4)	30mΩ Max
Insulation Resistance	Mate applicable FPC/FFC and apply 500V DC between adjacent terminal or ground., (JIS C5402 5.2/MIL-STD-202 Method 302)	500MΩ Min.
Dielectric Strength	Mate applicable FPC/FFC and apply 500V AC(rms) for 1 minute between adjacent terminal or ground., (JIS C5402 5.1/MIL-STD-202 Method 301)	No evidence of break-down and flashover
MECHANICAL PERFORMANCE		

FPC/FFC Retention Force	Apply axial pull out force at the speed rate of 25±3 mm/Min. on the terminal assembled in the housing	0.030kgf/Pin Min.(PIN>＝13) 0.040kgf/Pin Min.(PIN<13)
Contact Retention Force	Apply axial pull out force at the speed rate of 25±3 mm/Min. on the terminal assembled in the housing	0.150kgf Min.

ENVIRONMENTAL PERFORMANCE AND OTHERS

Temperature Rise	Measure the temperature rise of contactwhen the maximum AC rated current ispassed. (UL498)	Temperature rise	30°C Max.

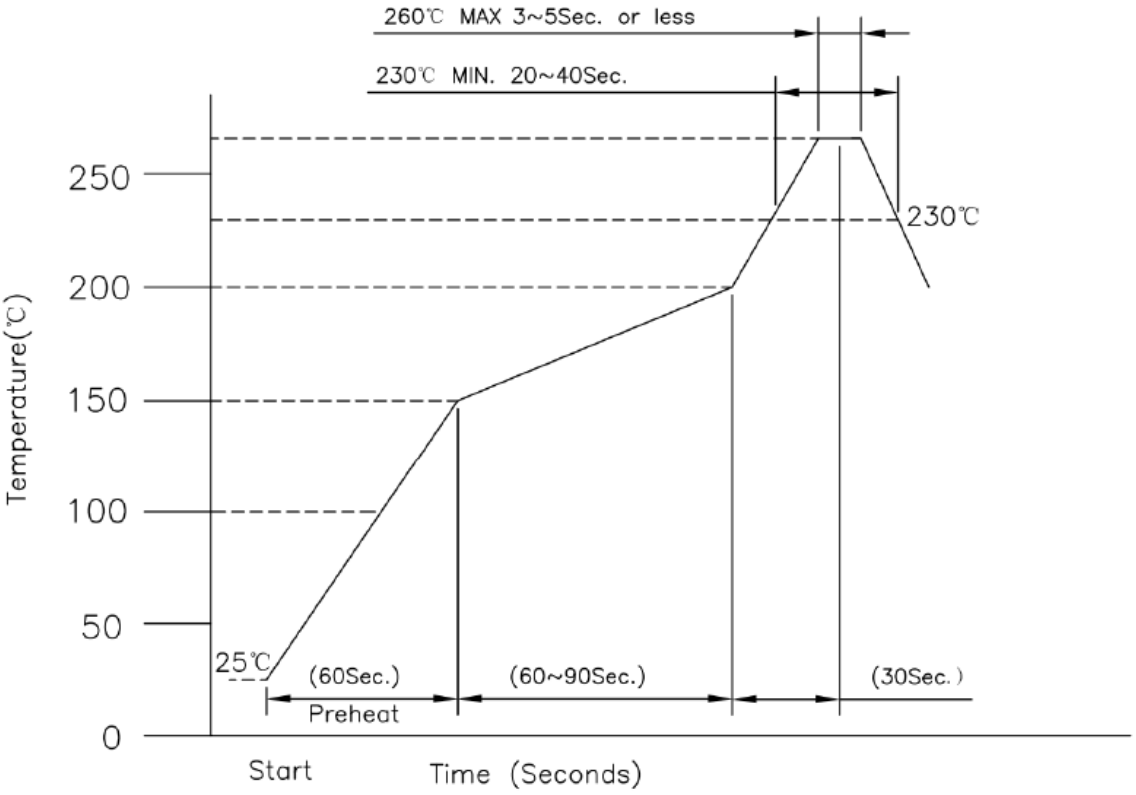
ITEM	TEST CONDITION	REQUIRMENT	
Life test	When mated up to 30cycles repeatedly (the rate is 10 cycles per minute).	Contact Resistance	50 mΩ Max.
Vibration	Amplitude : 1.5mm P-P Frequency: 10~55~10 Hz in 1 minute. Duration: 2 hours in each of X, Y, Z axes. (MIL-STD-202 Method 201)	Appearance	No Damage
		Contact Resistance	50 mΩ Max.
		Discontinuity	1 μ sec Max.
Shock	Subject to the following shock conditions. 3 times of shocks shall be applied for each 6 directions along 3 mutually perpendicular	Appearance	No Damage
		Contact Resistance	50 mΩ Max.

	axes. Peak value : 490m/s2 {50G} (JIS C0041 / MIL-STD-202 Method 213)	Discontinuity	1 μ sec Max.
Heat Resistance	Expose to 85±2°C for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. (JIS C0021 / MIL-STD-202 Method 108)	Appearance	No Damage
		Contact Resistance	50 mΩ Max.
Cold Resistance	Expose to -25±2°C for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. (JIS C0020)	Appearance	No Damage
		Contact Resistance	50 mΩ Max.

ITEM	TEST CONDITION	REQUIRMENT	
Humidity	Expose to 60 ± 2°C, relative humidity 90 to 95% for 96 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. (JIS C0022 / MIL-STD-202 Method 103)	Contact Resistance	50 mΩ Max.
		Dielectric Strength	No Breakdown
		Insulation Resistance	250 MΩ Min.
		Appearance	No Damage
Temperature Cycling	Subject to the following conditions for 5 cycles. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. 1 cycle a) -25±2°C 30minutes b)+85±2°C 30minutes (Transit time shall be with in 3 minutes) (JIS C0025)	Contact Resistance	50 mΩ Max.
		Appearance	No Damage
Salt Spray	Expose to the following salt mist conditions. Upon completion of the exposure period, salt deposits shall be removed by a gentle wash or dip in running water, after which the specified measurements shall be performed. NaCl solution Concentration : 5 ± 1%	Contact Resistance	50 mΩ Max.
		Appearance	No Damage

	Spray time : 24 ± 2 hours Ambient temperature : 35 ± 2°C (JIS C0023 / MIL-STD-202 Method 101)		
Resistance to Soldering Heat	When reflowing…Refer to paragraph 8. Soldering iron method Soldering time: 3 ±0.5seconds Max. Solder temperature : 260±5°C	Appearance	No Damage
Solder ability	Solder Temperature: 245 ±5°C Immersion Period: 5±0.5sec	The test area shall be covered more than 95% of immersed area with fresh solder.	

8. NFRARED REFLOW CONDITION



TEMPERATURE CONDITION GRAPH

(TEMPERATURE ON BOARD PARTTERN SIDE)

9. Product Qualification and Requalification test

Test or Examination	Test Group										
	A	B	C	D	E	F	G	H	I	J	K
	Test Sequence（a）										
Examination of Product	1, 7	1, 7	1,5	1, 5	1, 5	1, 5	1, 5	1, 3		1, 3	
Contact Resistance		2, 6	2, 4	2, 4	2, 4	2, 4	2, 4				
Dielectric withstanding Voltage	3, 6										
Insulation Resistance	2, 5										
Contact/ Peg Retention Force											1
FPC/FFC Retention Force		3, 5									
Durability		4									
Vibration			3								
Shock							3				
Temperature Rise								2			
Solder ability										2	
Resistance to Soldering Heat									2		
Heat Resistance				3							
Cold Resistance					3						
Humidity						3					
Temperature Cycling	4										
Salt Spray							3				
Sample Size	5	5	5	5	5	5	5	5	5	5	5