# CRS Precision electronic Co., LTD | Control NO | El085 | | Issued BY | ED | | Date Issued | 2020/04/28 | | Date Revised | 2021/11/15 | | Revised Edition | A1 |

变更履历:	<u> </u>			<u>'</u>
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

## **CRS Precision electronic Co., LTD**

Document Name

## SPEC-FP1019H-XXXXX

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Approval By	Check By	Originator By
SHEN ZHI JIN	ZHAO DA PING	YUXIAOFANG

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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

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#### 3. CONNECTOR DIMENSIONS

See attached drawings.

#### 4. MATERIAL

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

#### 5. ACCOMMODATED P.C.B. LAYOUT

See attached drawings.

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

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	Apply axial pull out force at the speed rate	of	0.030kg	gf/Pin
FPC/FFC Retention	25±3 mm/Min. on the terminal assembled	in	Min.(P	IN > = 13)
Force	the housing		0.040kg	gf/Pin
			Min.(P	IN<13)
	Apply axial pull out force at the speed rate	of		
Contact Retention	25±3 mm/Min. on the terminal assembled	in	0.150kg	gf Min.
Force	the housing			
	ENVIRONMENTAL PERFORMANCE AN	ND OTHERS		
	Measure the temperature rise of	Temperature ri	se 30°	°C Max.
Temperature Rise	contactwhen the maximum AC rated			
	current ispassed. (UL498)			
				T
ITEM	TEST CONDITION	REC	QUIRMI	ENT
			<u> </u>	
	When mated up to 30 cycles repeatedly	Contact	50	mΩ Max.
Life test	(the	Resistance		
	rate is 10 cycles per minute).			
				_
	Amplitude: 1.5mm P-P	Appearance	No	Damage
	Frequency: 10~55~10 Hz in 1 minute.			
7.71	Duration: 2 hours in each of X, Y, Z axes.	Contact	50	mΩ Max.
Vibration	(MIL-STD-202 Method 201)	Resistance		IIIaa IVIWX.
		resistance		
		Discontinuity	1 1	ı sec Max.
		Biscontinuity	' '	1,14,11.
	Subject to the following shock	Appearance	No	Damage
	conditions. 3			
	times of shocks shall be applied for each			
Shock	6	Contact	50	mΩ Max.
		Resistance		
	directions along 3 mutually perpendicular			

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

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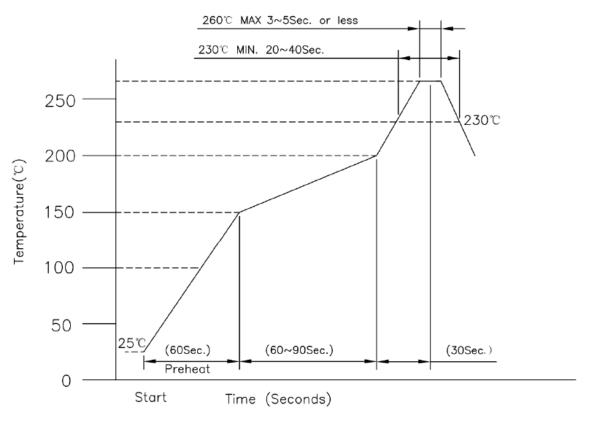
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Name			AI
ITEM	TEST CONDITION	REQUIRMENT	
	Expose to $60 \pm 2^{\circ}$ C, relative humidity 90 to 95% for 96 hours.	Contact Resistance	50 mΩ Max.
Humidity	Upon completion of the exposure period, the test specimens shall be conditioned at	Dielectric Strength	No Breakdown
	ambient room conditions for 1 to 2 hours, after which the specified measurements shall	Insulation Resistance	250 MΩ Min.
	be performed. (JIS C0022 / MIL-STD-202 Method 103)	Appearance	No Damage
	Subject to the following conditions for 5 cycles. Upon completion of the exposure period, the test specimens shall be	Contact Resistance	50 mΩ Max.
Temperature Cycling	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)	Appearance	No Damage
	Expose to the following salt mist conditions.  Upon completion of the exposure period,	Contact Resistance	50 mΩ Max.
Salt Spray	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: $5 \pm 1\%$	Appearance	No Damage

[	CRS Precision  Cocument  Name	Spray time : 24 ± 2 hours Ambient temperature : 35 ± 2°C	Control NO Issued BY Date Issued Date Revised Revised Edition	EI085 ED 2020/04/28 2021/11/15 A1
	Resistance to Soldering Heat	(JIS C0023 / MIL-STD-202 Method 101)  When reflowingRefer 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 shal more than 95% of immersed area solder.	

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## 8. NFRARED REFLOW CONDITION



TEMPERATURE CONDITION GRAPH

(TEMPERATURE ON BOARD PARTTERN SIDE)

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# 9. Product Qualification and Requalification test

	Test Group										
Test or Examination	Α	В	С	D	Е	F	G	Н	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