1. **Scope**

Wafer Connector pitch 2mm series
This specification covers the Wafer Connector FWF20001/FWF20002 Series

2. **Ordering information**

Refer to the drawing.

3. **Connector dimensions**

Refer to the drawing.

4. **Material**

Housing: PA66 (UL 94V-0)
Color: Natural
Terminal: Brass
Plating: Tin plated

5. **Accommodated P.C.B layout**

Refer to the drawing.

6. **Rating**

Operating voltage(Max.)	100V AC/DC
Current rating(Max.)	2.0A AC/DC
Temperature range-operating	-25°C -- +85°C(Including terminal temperature rese)

7. **Performance**

Test item	Requirement	Test Condition
Electrical Performance		
Contact Resistance	10mΩ Max.	Mate connectors, measure by dry circuit, 20mV MAX., 10mA. Mated Length : 50mm (AWG. #24) (Based upon JIS C5402 5.4)
Insulation Resistance	1000 MΩ Min.	Mate connectors, apply 500V DC between adjacent terminals or ground. (Based upon JIS C5402 5.2/MIL-STD-202 method 302 Cond.B)
Dielectric Strength	No breakdown and flashove	Mate connectors, apply 500V AC for 1 minute between adjacent terminal or ground. (Based upon JIS C5402 5.1/MIL-STD-202 Method 301)
Contact resistance on crimped portion	10mΩ Max.	Crimp the maximum applicable wire on to the terminal, measure by dry circuit, 20mV MAX., 10mA. Wire Length : 50mm (AWG.#24)

Test item	Requirement	Test Condition
Mechanical Performance		
Insertion force and withdrawal force	Refer to paragraph 8	Insertion and withdrawal connectors at the speed rate of 25± 3mm/minute
Terminal/Housing Retention Force	1.5kgf Min.	Apply axial pull out force at the speed rate of 25±3mm/minute on the terminal assembled In the housing.
Crimping pull out Force	Wire size: #24 / #26 / #28 / #30 1 width: 1.3±0.1 1 height: 0.68~0.77 / 0.61~0.70 / 0.52~0.61 / 0.47~0.56 2 width: 1.50 2 height: 1.56 / 1.50 / 1.45 / 1.40 Crimp strength: 3.0kg min. / 1.8kg min. / 1.1kg min. / 0.6kg min. 1. Conductor (mm) 2: Insulation (mm)	Fix the crimped terminal,apply axial pull out force on the wire at the speed rate of 25±3mm/minute (Based upon JIS C5402 6.8)
Terminal Insertion Force	1.2kgf Max.	Insert the crimped terminal into the housing at the speed rate of 25±3mm/min.
Pin Retention Force	1.0kgf Min.	Apply axial push force at the speed rate of 25±3mm/minute on the contact pin assembled in the base wafer.
Environmental Performance and others		
Heat resistance	Appearance: No Damage Contact Resistance: 20mΩ Max.	Mated connector shall be placed in an oven for 96±4 hours at +85±2°C. (Based upon JIS C5402 7.8)
Cold resistance	Appearance: No Damage Contact Resistance: 20mΩ Max.	Mated connector shall be placed in a temperature chamber for 96±4 hours at -25±3°C (Based upon JIS C5402 7.9)
Humidity	Appearance: No Damage Contact Resistance: 20mΩ Max. Dielectric Strength: 500V,AC/min Insulation Resistance: 500MΩ Min.	Mated connector shall be placed in a humidity chamber on the following conditions. Temperature: 40±2°C Relative humidity: 90~95% Duration : 240 Hours (Based upon MIL-STD-202 Method 103 cond.A)

Test item	Requirement		Test Condition
Vibration	Appearance	No Damage	Amplitude: 1.52mm P.P Sweep time: 10-55-10Hz/minute Duration: 2 hours in each X、Y、Z axlals. (Based upon MIL-STD-202 method 201A)
	Contact Resistance	20mΩ Max.	
	Discontinuity	1μ sec Max.	
Shock	Appearance	No Damage	50G, 3 strokes in each X、Y、Z. axlals. (Based upon JIS C0041/MIL-STD-202 method 213B Cond.A)
	Contact Resistance	20mΩ Max.	
	Discontinuity	1μ sec Max.	
Temperature cycling	Appearance	No Damage	Mated connector shall be set to temperature cycling for 5 cycles of which 1 cycle consists of: 1>.+25°C ~ 3 minutes 2>.-25°C ~ 30 minutes 3>.+25°C ~ 3 minutes 4>.+85°C ~ 30 minutes (Based upon JIS C5402 7.2)
	Contact Resistance	20mΩ Max.	
	Dielectric Strength	500V,AC/min	
	Insulation Resistance	500MΩ Min.	
Temperature Rise	30°C Max.		Apply rated current load on mated connector in series-connection. Measure change of temperature on contact using thermocouples for 4 hours. (Based upon UL 1977)
Repeated Insertion/ withdrawal	Contact Resistance	20mΩ Max.	Mate connector up to 30 cycles repeatedly at a rate of 10 cycles/minute. After which test the contact resistance
Salt Spray	Appearance	No Damage	Mated connector shall be placed in a salt spray chamber on the following conditions. Salt Solution Density : 5±1% Temperature : 35±2°C Duration : First punch,second plate:24±4Hours First plate,second punch:8±2Hours Remarks : we make sure the important area
	Contact Resistance	20mΩ Max.	
Solderability	95% of immersed area must show no voids nor pin holes.		Immerse fluxed soldered section of contact pin into a solder bath for 3±0.5sec Temperature: 230±5°C
Resistance to soldering heat	No Damage in appearance		Mated connector shall be dipped on solder bath for 5±0.5sec Temperature: 260±5°C

8. **Insertion force and withdrawal force**

(Unit:kgf)

Circuits	Insertion (Max.)	Withdrawal (Min.)		
	Initial	Initial	10th	30th
2	2.4	0.60	0.50	0.50
3	2.8	0.75	0.60	0.60
4	3.2	0.90	0.70	0.70
5	3.6	1.05	0.80	0.80
6	4.0	1.20	0.90	0.90
7	4.4	1.35	1.00	1.00
8	4.8	1.50	1.10	1.10
9	5.2	1.65	1.20	1.20
10	5.6	1.80	1.30	1.30
11	6.0	1.95	1.40	1.40
12	6..4	2.10	1.50	1.50
13	6.8	2.25	1.60	1.60
14	7.2	2.40	1.70	1.70
15	7.6	2.55	1.80	1.80
16	8.0	2.70	1.90	1.90