1. **Scope**

Wafer Connector pitch 1.5mm series
This specification covers the Wafer Connector FWF15001/FWF15003 Series

2. **Ordering information**

Refer to the drawing.

3. **Connector dimensions**

Refer to the drawing.

4. **Material**

Housing: PA46 (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.)	50V AC/DC
Current rating(Max.)	1.0A AC/DC
Temperature range-operating	-25°C -- +85°C(Including terminal temperature rese)

7. **Performance**

Test item	Requirement	Test Condition
Electrical Performance		
Contact Resistance	20mΩ Max.	Mate connectors, measure by dry circuit, 20mV Max., 10mA. Mated length: 50mm (AWG #26) (Based upon JIS C5402 5.4)
Insulation Resistance	500 MΩ Min.	Mate connectors, apply 500V DC between adjacent terminals or ground. (Based upon JIS C5402 5.2/ MIL-STD-202 method 302 condition B)
Dielectric Strength	No breakdown and flashove	Mate connectors, apply 500V AC for 1 minute between adjacent terminals or ground. (Based upon JIS C5402 5.1/MIL-ST-202 method 301)

<table>
<tr><th>Test item</th><th colspan="6">Requirement</th><th>Test Condition</th></tr>
<tr><td>Contact resistance on crimped portion</td><td colspan="6">20mΩ Max.</td><td>Crimp the maximum applicable wire on to the terminal, measure by dry circuit, 20mV Max., 10mA.
Wire length: 50mm (AWG #26)</td></tr>
<tr><td colspan="8">Mechanical Performance</td></tr>
<tr><td>Insertion force and withdrawal force</td><td colspan="6">Refer to paragraph 8</td><td>Insertion and withdrawal connectors at the speed rate of 25± 3mm/minute.</td></tr>
<tr><td>Terminal/Housing Retention Force</td><td colspan="6">1.0kgf Min.</td><td>Apply axial pull out force at the speed rate of 25±3mm/minute on the terminal assemble in the housing.</td></tr>
<tr><td rowspan="6">Crimping pull out Force</td><td colspan="2">Wire size</td><td>#26</td><td>#28</td><td>#30</td><td>#32</td><td rowspan="6">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)</td></tr>
<tr><td rowspan="2">1</td><td>width</td><td colspan="4">1.0±0.1</td></tr>
<tr><td>height</td><td>0.57~ 0.62</td><td>0.52~ 0.57</td><td>0.47~ 0.52</td><td>0.42~ 0.47</td></tr>
<tr><td rowspan="2">2</td><td>width</td><td>1.2</td><td colspan="3">1.1</td></tr>
<tr><td>height</td><td>1.45</td><td>1.10</td><td>1.00</td><td>1.00</td></tr>
<tr><td colspan="2">Crimp strength</td><td>2.0kg Min</td><td>1.5kg Min</td><td>0.8kg Min</td><td>0.5kg Min</td></tr>
<tr><td colspan="6">1. Conductor(mm)
2. Insulation(mm)</td></tr>
<tr><td>Terminal insertion force</td><td colspan="6">0.5kgf Max.</td><td>Insert the crimped terminal into the housing at the speed of 25±3mm/minute.</td></tr>
<tr><td>Pin retention Force</td><td colspan="6">1.0kgf Min.</td><td>Apply axial push force at the speed rate of 25±3mm/minute on the terminal assemble in the base wafer.</td></tr>
<tr><td colspan="8">Environmental Performance and others</td></tr>
<tr><td rowspan="2">Heat resistance</td><td colspan="3">Appearance</td><td colspan="2">No Damage</td><td colspan="2" rowspan="2">Mated connector shall be placed in an oven for 96±4 hours at 85±2°C
(Based upon JIS C5402 7.8)</td></tr>
<tr><td colspan="3">Contact Resistance</td><td colspan="2">30mΩ Max.</td></tr>
<tr><td rowspan="2">Cold resistance</td><td colspan="3">Appearance</td><td colspan="2">No Damage</td><td colspan="2" rowspan="2">Mated connector shall be placed in a temperature chamber for 96 hours at -25±2°C
(Based upon JIS C5402 7.9)</td></tr>
<tr><td colspan="3">Contact Resistance</td><td colspan="2">30mΩ Max.</td></tr>
</table>

Test item	Requirement		Test Condition
Humidity	Appearance	No Damage	Mated connector shall be placed in a humidity chamber on the following conditions. Temperature: 40±2°C Relative humidity: 90~95% (Based upon MIL-STD-202 Method 103 condition A)
	Dielectric Strength	500V,AC/min	
	Contact Resistance	30mΩ Max.	
	Insulation Resistance	100MΩ Min.	
Vibration	Appearance	No Damage	Amplitude: 1.52mm Sweep time: 10~55~10Hz/minute Duration: 2 hours in each X、Y、Z axes (Based upon MIL-STD-202 method 201)
	Contact Resistance	30mΩ Max.	
	Discontinuity	1μ sec Max.	
Shock	Appearance	No Damage	50G, 3 strokes in each X、Y、Z axes (Based upon JIS C0041)
	Contact Resistance	30mΩ 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	30mΩ Max.	
	Dielectric Strength	500V,AC/min	
	Insulation Resistance	100MΩ 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	30mΩ 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. (Based upon JIS C5402 7.1/MIL-STD-202 method 101 condition B) Salt solution density: 5±1% Temperature: 35±2°C Duration: 24±4 hours
	Contact Resistance	30mΩ Max.	

Test item	Requirement	Test Condition
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±0.5 sec, temperature: 230±5°C
Resistance to soldering heat	No damage in appearance	Mated connector shall be dipped on solder bath for 5±1 sec, temperature: 260±5°C

8. **Insertion force and withdrawal force**

(Unit:kgf)

Circuits	Insertion (Max.)	Withdrawal (Min.)		
	Initial	Initial	10th	30th
2	1.5	0.5	0.3	0.2
3	2.0	0.6	0.4	0.3
4	2.5	0.7	0.5	0.4
5	3.0	0.8	0.6	0.5
6	3.5	0.9	0.7	0.6
7	4.0	1.0	0.8	0.7
8	4.5	1.1	0.9	0.8
9	5.0	1.2	1.0	0.9
10	5.5	1.3	1.1	1.0
11	6.0	1.4	1.2	1.1
12	6.5	1.5	1.3	1.2
13	7.0	1.6	1.4	1.3
14	7.5	1.7	1.5	1.4
15	8.0	1.8	1.6	1.5