1. **Scope**

Wafer Connector pitch 1.5mm series
This specification covers the Wafer Connector FWF15004/FWF15005 Series

2. **Ordering information**

Refer to the drawing.

3. **Connector dimensions**

Refer to the drawing.

4. **Material**

Housing: PA9T (UL 94V-0)
Color: Natural
Terminal: Brass
Plating: Tin plated
Solder tab: Phosphor bronze
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	Procedure
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 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)

Test item	Requirement	Procedure
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. #26)

Mechanical Performance

Insertion force and withdrawal force	Refer to paragraph 8					Insert and extract connectors at a speed of 25±3mm/minute
Crimping pull out force	Wire size		#26	#28	#30	#32	Fix the crimped terminal, apply axial pull out force on the wire at a speed of 25±3mm/minute (Based upon JIS C5402 6.8)
	1	Width	1.00±0.1mm			
		Height	0.57-0.62	0.52-0.57	0.47-0.52	0.42-0.47
	2	Width	1.1mm			
		Height	1.45	1.10	1.00	1.00
	Crimp strength		1.8kgf Min.	1.5kgf Min.	0.8kgf Min.	0.5kgf Min.
	1: Conductor(mm) 2: Insulation(mm)					
Terminal insertion force	0.5kgf (Max.)					Insert the crimped terminal into the housing at a speed of 25± 3mm/min.
Terminal/ Housing retention force	1.0kgf (Min.)					Apply axial pull out force at a speed of 25±3mm/minute on the terminal assembled In the housing.
Pin retention force	1.0kgf (Min.)					Apply axial push force at a speed of 25±3mm/minute on the contact pin assembled in the base wafer.

Environmental Performance and others

Repeated insertion/withdrawal	Contact resistance	30mΩ Max.	Mate connector up to 30 cycles repeatedly at a rate of 10 cycles/ minute. After which test the contact resistance
Temperature rise	30°C Max.		Apply rated current load on mated connector in series-connection. Measure change of temperature on contact using thermocouples for 4hours. (Based upon UL 1977)
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	30mΩ Max.	
	Discontinuity	1μ sec Max.	

Test item	Requirement		Procedure
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	30mΩ Max.	
	Discontinuity	1μ sec Max.	
Heat resistance	Appearance	No Damage	Mated connector shall be placed in an oven for 96±4 hours at +85±2°C. (Based upon JIS C5402 7.8)
	Contact Resistance	30mΩ Max.	
Cold resistance	Appearance	No Damage	Mated connector shall be placed in a temperature chamber for 96±4 hours at -25±3°C (Based upon JIS C5402 7.9)
	Contact Resistance	30mΩ Max.	
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% Duration : 96 hours (Based upon JIS C0022/MIL-STD-202 Method 103B Cond.B)
	Contact Resistance	30mΩ Max.	
	Dielectric Strength	No breakdown and flashover	
	Insulation Resistance	100MΩ Min.	
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	No breakdown and flashover	
	Insulation Resistance	100MΩ Min.	
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	30mΩ 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

Test item	Requirement	Procedure
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	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
16	8.5	1.9	1.7	1.6