1. **Scope**

Wafer Connector pitch 2 mm series

This specification covers the Wafer Connector FWF20005/FWF20006 Series

2. **Connector Dimensions**

Refer to the drawing.

3. **Material**

Housing:PA46 UL94V-0

Color :White

Contacts Terminal:Brass

Plating:Tin-Plated all

4. **Accommodated P.C.B Layout**

Refer to the drawing.

5. **Rating**

Operating Voltage(Max.)	250V AC/DC
Current Rating(Max.)	3A DC/AC
Operating Temperature	-25°C -- +85°C (Including terminal temperature rese)

6. **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. #22) (Based upon JIS C5402 5.4)
Insulation Resistance	1000MΩ Min	Mate applicable connectors and apply 500V DC between adjacent terminal or ground. (Based upon JIS C5402 5.2/MIL-STD-202 method 302 Cond.B)
Dielectric Strength	No breakdown and flashover	Mate applicable connectors,apply 800V AC(rms)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. #22)
Mechanical Performance		
Insert and withdrawal force	Refer to paragraph 7	Insert and withdraw connectors at the speed rate of 25±3 mm/minute.
Crimping pull out force	Wire size: #22 / #24 / #26 / #28 1 Width: 1.3±0.1 1 Height: 0.87 ~ 0.95 / 0.76 ~ 0.85 / 0.65 ~ 0.75 / 0.54 ~ 0.65 2 Width: 1.50 2 Height: 1.90 / 1.75 / 1.60 / 1.45 Crimp strength: 4.0 kg min. / 3.0 kg min. / 1.8 kg min. / 1.1 kg 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±3 mm/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±3 mm/minute.
Terminal/Housing Retention force	1.5kgf Max	Apply axial pull out force at the speed rate of 25±3 mm/minute on the terminal assembled in the housing
Pin retention force	1.0kgf Min	Apply axial push force at a speed of 25±3 mm/minuted on the contact pin assembled in the base wafer

Test item	Test Condition	Requirement	
Environmental Performance and others			
Repeated insertion / withdrawal	When mated up to 30 cycles repeatedly by the rate of 10 cycles per minute	Contact Resistance	20 mΩ Max
Temperature Rise	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)	Temperature rise	30°C Max
Vibration	Mate connectors and subject to the following vibration conditions,for period of 2 hours in each of 3 mutually perpendicular axes,passing DC 1mA during the test . Amplitude:1.52mm P-P Frequency:10-55-10Hz in 1 munute Duration:2 hours in each of X.Y.Z axe (Based upon MIL-STD-202 method 201)	Appearance	No Damage
		Contact Resistance	20mΩ Max
		Discontinuity	1μsec Max
Shock	50G , 3 strokes in each X,Y,Z axlals. (Based upon JIS C0041)	Appearance	No Damage
		Contact Resistance	20mΩ Max
		Discontinuity	1μsec Max
Heat Resistance	Mated connector shall be placed in a oven for 96±4 hours at +85±2°C (Based upon JIS C5402 7.8)	Appearance	No Damage
		Contact Resistance	20mΩ Max
Cold Resistance	Mated connector shall be placed in a temperature chamber for 96 ± 4 hours at -25 ± 3°C (Based upon JIS C5402 7.9)	Appearance	No Damage
		Contact Resistance	20mΩ Max
Humidity	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)	Appearance	No Damage
		Contact Resistance	20mΩ Max
		Dielectric strength	No Breakdown
		Insulation Resistance	500MΩ Min

Test item	Test Condition	Requirement	
Temperature Cycling	Mated connector shall be set to temperature cycling for 5 cycles of which 1cycle consists of : 1.+25°C---------3minutes 2.-25°C---------30minutes 3.+25°C---------3minutes 4.+85°C---------30minutes (Based upon JIS C5402 7.2)	Appearance	No Damage
		Contact Resistance	20mΩ Max
		Dielectric strength	No Breakdown
		Insulation Resistance	500MΩ Min
Salt Spray	Mated connector shall be placed in a salt spray chamber on the following conditions. Salt solution density: 5±1% Temperature: 35±2°C Duration: 24±4 Hours (Based upon JIS C5402 7.1/MIL-STD-202 Method 101D Cond.B)	Appearance	No Damage
		Contact Resistance	20mΩ Max
Solderability	Tip of solder tails and fitting nails into the molten solder (held at 245±5°C) up to 0.1mm form the bottom of the housing for 3 ±0.5 seconds.	Solder Wetting	95% of immersed area must show no voids nor pin holes
Resistance to Soldering Heat	Mated connector shall be dipped on solder bath for 5±1sec temperature :260±5°C	Appearance	No Damage

7. **Insertion/Withdrawal Force**

Circuits	Unit	Insertion Force (Max.)	Withdrawal Force(Min.)		
		Initial	Initial	10th	30th
6	kgf	2.30	1.50	1.20	1.20
8	kgf	2.90	1.75	1.35	1.35
10	kgf	3.50	2.00	1.50	1.50
12	kgf	4.10	2.25	1.65	1.65
14	kgf	4.70	2.50	1.80	1.80
16	kgf	5.30	2.75	1.95	1.95
18	kgf	5.90	3.00	2.10	2.10
20	kgf	6.50	3.25	2.25	2.25
22	kgf	7.10	3.50	2.40	2.40
24	kgf	7.70	3.75	2.55	2.55
26	kgf	8.30	4.00	2.70	2.70
28	kgf	8.90	4.25	2.85	2.85
30	kgf	9.50	4.50	3.00	3.00
32	kgf	10.10	4.75	3.15	3.15
34	kgf	10.70	5.00	3.30	3.30