

**1. Scope**

Wafer Connector pitch 1mm series

This specification covers the Wafer Connector FWF10001/FWF10002 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: Copper alloy

Plating: Tin plated

Solder tab: Copper alloy

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
<b>Electrical Performance</b>		
Contact Resistance	20mΩ Max.	Mate connectors, measure by dry circuit, 20mV Max., 10mA. Mated Length : 50mm (AWG. #28) (Based upon JIS C5402 5.4)
Insulation Resistance	100 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)

## Wafer Connector pitch 1mm series

Test item	Requirement	Test Condition
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. #28)

## Mechanical Performance

Insertion force and withdrawal force	Refer to paragraph 9	Insert and withdraw connectors at a speed of 25±3mm/minute.
--------------------------------------	----------------------	---

Crimping pull out force	Wire size		#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 6.22)
	1	width	0.7±0.1			
		height	0.58~0.62	0.55~0.60	0.45~0.58	
	2	width	0.70			
		height	1.10	1.00	0.90	
	Crimp strength		1.5kg min.	0.8kg min.	0.5kg 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	0.5kgf Min.	Apply axial pull out force at a speed of 25±3mm/minute on the terminal assembled In the housing.
-----------------------------------	-------------	--

Pin Retention Force	0.5kgf 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

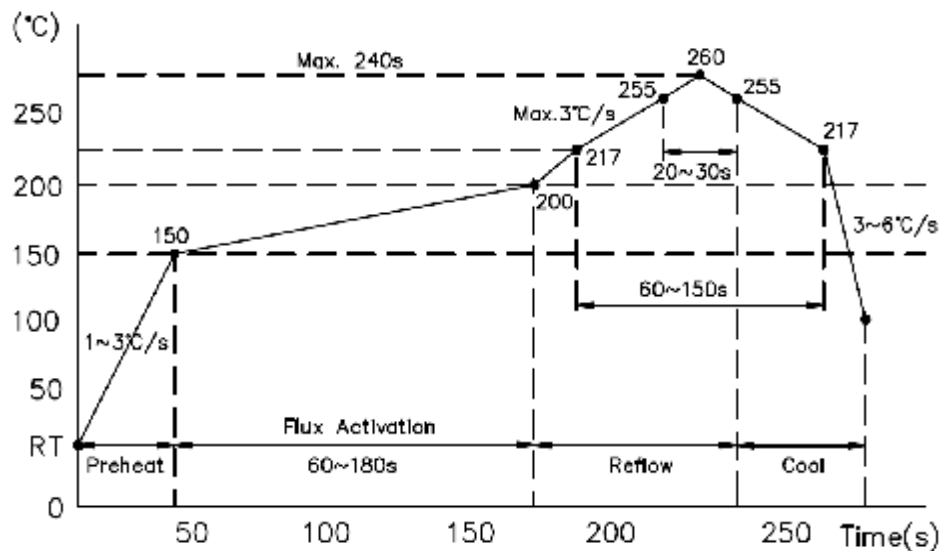
Repeated Insertion and Withdrawal	Contact Resistance	40mΩ Max.	Mate connector up to 30 cycles repeatedly at a rate of 10 cycles/ minute. After which test the contact resistance.
-----------------------------------	--------------------	-----------	--

Temperature Rise	30°C Max.	Apply rated current load on mated connector in series-connection. Measure change of temperature on contact using thermocouples for 4 hours. (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	40mΩ Max.	
	Discontinuity	1μ sec Max.	

Test item	Requirement		Test Condition
Shock	Appearance	No Damage	50G, 3 strokes in each X、Y、Z. axlals. (Based upon JIS C0041)
	Contact Resistance	40mΩ 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	40mΩ Max.	
Cold resistance	Appearance	No Damage	Mated connector shall be placed in a temperature chamber for 96±4 hours at -25±2°C (Based upon JIS C5402 7.9)
	Contact Resistance	40mΩ 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 : 240 Hours (Based upon MIL-STD-202 Method 103 Cond.A)
	Contact Resistance	40mΩ Max.	
	Dielectric Strength	500V,AC/min	
	Insulation Resistance	10MΩ 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	40mΩ Max.	
	Dielectric Strength	500V,AC/min	
	Insulation Resistance	10MΩ 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	40mΩ 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. Reference infrared reflow condition



Standard JEDEC temperature profile (Lead free reflow)

## 9. Insertion force and withdrawal force

(Unit:kgf)

Circuits	Insertion (Max.)	Withdrawal (Min.)	
	Initial	Initial	30th
2	2.04	0.20	0.20
3	2.04	0.20	0.20
4	2.04	0.20	0.20
5	3.06	0.30	0.30
6	3.06	0.30	0.30
7	3.06	0.30	0.30
8	4.08	0.40	0.40
9	4.08	0.40	0.40
10	4.08	0.40	0.40
11	5.10	0.50	0.50
12	5.10	0.50	0.50
13	5.10	0.50	0.50
14	6.12	0.60	0.60
15	6.12	0.60	0.60
16	6.12	0.60	0.60
17	7.14	0.70	0.70
18	7.14	0.70	0.70
19	7.14	0.70	0.70
20	8.16	0.80	0.80