

**1. Scope**

Wafer Connector FWF20012/FWF20017 Series

This specification covers the Wafer Connector FWF20012/FWF20017 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

### Electrical Performance

Contact Resistance	30mΩ 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 1000V 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	30mΩ Max	Crimp the maximum applicable wire on to the terminal, measure by dry circuit, 20mV MAX, 10mA Wire Length : 50mm (AWG. #22)

### Mechanical Performance

Mechanical Performance				
Insert and withdrawal force	Insertion (Max)	Initial	220g	Insert and withdraw connectors at the speed rate of 25±3mm/minute.
	Withdrawal (Min)	Initial	120g	
		10th	100g	
		30th	100g	
Crimping pull out force	AWG #22	2.5 kgf Min		Fix the crimped terminal,apply axial pull out force on the wire at the speed rate of 25±3mm/minute. (Based upon JIS C5402 6.22)
	AWG #24	2.0 kgf Min		
	AWG #26	1.8 kgf Min		
	AWG #28	1.0 kgf Min		
Terminal Insertion force	1.0kgf Max	Insert the crimped terminal into the housing at the speed rate of 25±3mm/minute.		
Terminal/Housing Retention force	2.0kgf Max	Apply axial pull out force at the speed rate of 25±3mm/minute on the terminal assembled in the housing		
Pin retention force	1.5kgf Min	Apply axial push force at a speed of 25±3mm/minuted on the contact pin assembled in the base wafer		

### Environmental Performance and others

Repeated insertion/withdrawal	When mated up to 30 cycles repeatedly by the rate of 10 cycles per minute	Contact Resistance	50 mΩ Max
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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	50mΩ Max
		Discontinuity	1μsec Max
Shock	50G , 3 strokes in each X,Y,Z axlals. (Based upon JIS C0041)	Appearance	No Damage
		Contact Resistance	50mΩ 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	50mΩ 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	50mΩ 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	50mΩ Max
		Dielectric strength	No Breakdown
		Insulation Resistance	500MΩ Min
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	50mΩ 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 101 Cond.B)	Appearance	No Damage
		Contact Resistance	50mΩ Max
Solderability	Tip of solder tails and fitting nails into the molten solder (held at 230±5°C) up to 0.1mm from 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