PRODUCT SPECIFICATION

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1.SCOPE:

This specification covers the requirements for product performance of 2.54mm pitch FFC connector series.

2.CONSTRUCTION、DIMENSIONS 、 MATERIAL & PLATING:

See the attached drawings

3.RATINGS:

Item	Standard
Rated Voltage (max.)	300V AC, DC
Rated Current (max.)	3A AC, DC
Ambient Temperature Range	-40°C ~ +105°C*

*: Including terminal temperature rise

4.RECOMMENDED FFC THICKNESS:

0.20 ± 0.05mm

5.PERFORMANCE:

5-1.ELECTRICAL PERFORMANCE

Test Description		Procedure	Requirement
5-1-1	Contact Resistance	Mate connectors, measure by dry circuit, 20mV max. 10mA. (Based upon JIS C5402 5.4)	5mΩ max.
5-1-2	Insulation Resistance	Mate connectors, apply 500V DC between adjacent terminal or ground. (Based upon JIS C5402 5.2/ MIL-STD-202 Method 302 Cond. B)	1000MΩ min.
5-1-3	Dielectric Withstanding Voltage	Mate connectors, apply 1100V AC(rms) for 1 minute between adjacent terminal or ground. (Based upon JIS C5402 5.1/MIL-STD-202 Method 301)	No Breakdown

			APPROVED	CHECKED	WRITTEN
			BY	BY	BY
A1	REVISE	2007.06.30	董正一	伍建永	歐陽小強
A0	NEW RELEASE	2006.07.07			
REV.	DESCRIPTION	DATE	DOCUMENT NO: PS-2550-001		

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5-2.MECHANICAL PERFORMANCE

Test Description		Procedure		Requirement
5-2-1	Insertion & Withdrawal Force	Insert and withdraw connectors at the speed rate of 25 ± 3mm/minute.		Insertion: 0.25kgf/Pin max. Withdrawal: 0.07kgf/Pin min.
5-2-2	Terminal/ Housing Retention Force	Apply axial pull out force at the speed rate of 25 ± 3mm/minute on the terminal assembled in the housing.		1.0kgf min.
5-2-3	Durability	When mated up to 50 cycles repeatedly by the rate of 10 cycles per minute.	Contact Resistance	10mΩ max.
5-2-4	Vibration	Amplitude: 1.5mm P-P Sweep time: 10-55-10 Hz in 1 minute Duration: 2 hours in each X.Y.Z. axes (Based upon MIL-STD-202 Method 201A)	Appearance	No Damage
			Contact Resistance	10mΩ max.
			Discontinuity	1μsec. max.
5-2-5	Physical Shock	490m/s² {50G}, 3 strokes in each X.Y.Z. axes. (Based upon JIS C0041/MIL-STD-202 Method 213B Cond. A)	Appearance	No Damage
			Contact Resistance	10mΩ max.
			Discontinuity	1μsec. max.

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5-3.ENVIRONMENTAL PERFORMANCE AND OTHERS

Test Description		Procedure		Requirement
5-3-1	Temperature Rise	Carrying rated current load. (Based upon UL 498)	Temperature Rise	30°C max.
5-3-2	Heat Resistance	85 ± 2°C, 96 hours (Based upon JIS C0021/MIL-STD-202 Method 108A Cond. A)	Appearance	No Damage
			Contact Resistance	10mΩ max.
5-3-3	Cold Resistance	-25 ± 3°C, 96 hours (Based upon JIS C0020)	Appearance	No Damage
			Contact Resistance	10mΩ max.
5-3-4	Humidity	Temperature: 40 ± 2°C Relative Humidity: 90 ~ 95% Duration: 96 hours (Based upon JIS C0022/MIL-STD-202 Method 103B Cond. B)	Appearance	No Damage
			Contact Resistance	10mΩ max.
			Insulation Resistance	500MΩ min.
			Dielectric Withstanding Voltage	Must meet 5-1-3
5-3-5	Temperature Cycling	5 cycles of: a) - 55°C 30 minutes b) +85°C 30 minutes (Based upon JIS C0025)	Appearance	No Damage
			Contact Resistance	10mΩ max.
5-3-6	Salt Spray	24 ± 4 hours exposure to a salt spray from the 5 ± 1% solution at 35 ± 2°C. (Based upon JIS C0023/MIL-STD-202 Method 101D Cond. B)	Appearance	No Damage
			Contact Resistance	10mΩ max.
5-3-7	SO_2 Gas	24 hours exposure to 50 ± 5ppm. SO_2 gas at 40 ± 2°C.	Appearance	No Damage
			Contact Resistance	10mΩ max.
5-3-8	NH_3 Gas	40 minutes exposure to NH_3 gas evaporating from 28% Ammonia solution.	Appearance	No Damage
			Contact Resistance	10mΩ max.

6. Mechanical test：

6.1 Crimp width、crimp height & crimp strength

After crimping，the crimped areas [(6)、(7)] should be as follows.

Wire Size	Terminal Part Number	Conductor(mm) Crimp Width	Insulation(mm) Crimp Width	Crimp Strength (Kg)
FFC	A2550-T	1.45±0.15	FFC	1.80(min)

Note：no distorted after terminal crimped.

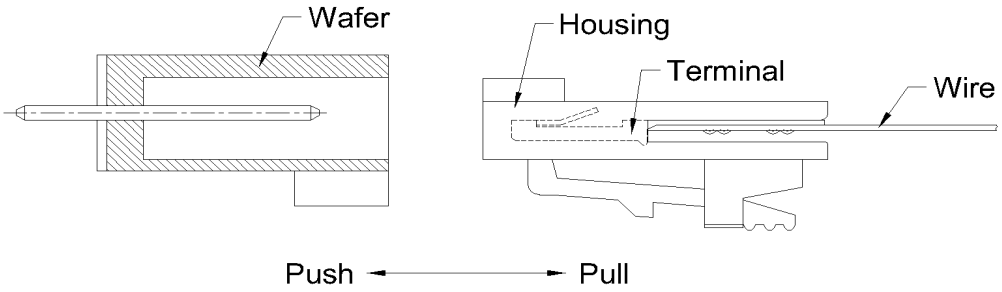
6.2 Insertion force (I.F.) & withdrawal force (W.F.)

(1) Requirement：

Number of Circuits	At initial		At 50th
	I.F. (max)	W.F. (min)	W.F. (min)
Single	1.50kg	0.15kg	0.12kg
4	3.00kg	0.40kg	0.35kg
5	3.50kg	0.50kg	0.45kg

(2) Test method：Housing with crimped terminal and wafer shall be mated and unmated on the same axis. Initial insertion and withdrawal forces and withdrawal forces at 50th shall be measured for single circuit and multi-circuits. For the measurement of single circuit , housing lock shall be removed.

Insertion and withdrawal speed：20±5 mm/minute.



(3) Test results：

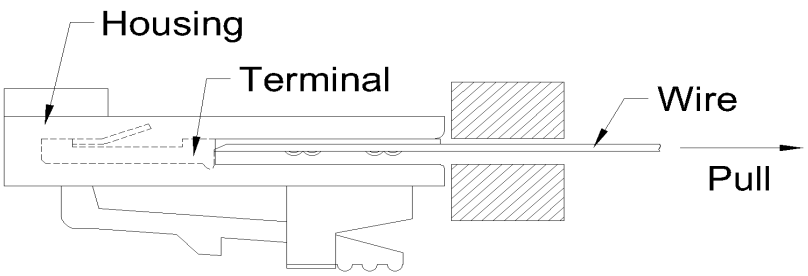
Number of Circuits		At initial		AT 50th
		I.F. (Kg)	W.F. (Kg)	W.F. (Kg)
Single	Max.	0.78	0.91	0.85
	Min.	0.35	0.26	0.23
	Ave.	0.61	0.67	0.62
4	Max.	1.22	1.18	1.12
	Min.	0.81	0.79	0.71
	Ave.	1.16	1.10	0.98
5	Max.	1.55	1.65	1.42
	Min.	0.88	0.80	0.71
	Ave.	1.21	1.28	1.16

N=20

6.3 Contact retention force

(1) Requirement：1.5 Kg (min.)

(2) Test method：Crimped terminal shall be mounted in a housing and pulled in an alignment. The load to pull the terminal out of the housing shall be measured.



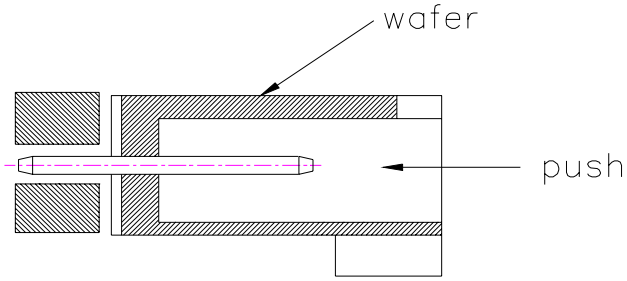
(3) Test results：

Max.	Min.	Ave.	N=10
1.99kg	1.10kg	1.54kg	

6.4 Post retention force

(1) Requirement：1.5Kg (min.)

(2) Test method：The end of a post shall be pushed in a perpendicular to wafer. The load to make the post start moving shall be measured.



(3) Test results .

Max.	Min.	Ave.	N=10
2.35kg	2.31kg	2.33kg	

7. Electrical test：

7.1 Contact resistance

(1) Requirement：Initial : 5 mΩ (max.)
After environmental test : 10 mΩ (max.)

(2) Condition：Test current : 10 mA (DC)
Open voltage : 20mV (max.)

7.2 Insulation resistance

(1) Requirement：Initial : 1000 MΩ (min.)
After humidity test ：500 MΩ (min.)

After thermal shock test ：500 MΩ (min.)

(2) Test method ：DC 1000V shall be applied between outer surface of housing and terminal and between adjacent terminals to measure insulation resistance. (MIL-STD-202 , test method 302 , condition B)

7.3 Dielectric withstanding voltage

(1) Requirement：There shall be no breakdown nor flashover.

(2) Test method ：Initially AC 1100V (rms) and after humidity and thermal shock tests AC 1000V (rms) shall be applied between outer surface of housing and terminal and between adjacent terminals for one minutes. (MIL-STD-202 , test method 301)
Test current : 1mA