PRODUCT SPECIFICATION

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1.SCOPE:

This specification covers the requirements for product performance of 3.96mm pitch wire to board connector series.

2.CONSTRUCTION、DIMENSIONS 、 MATERIAL & PLATING:

See the attached drawings

3.RATINGS & APPLICABLE WIRES:

Item	Standard		
Rated Voltage (max.)	250V AC, DC		Insulation O.D. 3.00mm (max.)
Rated Current (max.) and Applicable Wires	AWG #18	7A AC, DC	
	AWG #20	5A AC, DC	
	AWG #22	4A AC, DC	
Ambient Temperature Range	-25°C ~ +85°C*		

*: Including terminal temperature rise

4.PERFORMANCE:

4-1.ELECTRICAL PERFORMANCE

Test Description		Procedure	Requirement
4-1-1	Contact Resistance	Mate connectors, measure by dry circuit, 20mV max. 10mA. (Based upon JIS C5402 5.4)	10mΩ max.
4-1-2	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.
4-1-3	Dielectric Withstanding Voltage	Mate connectors, apply 1500V AC (rms) for 1 minute between adjacent terminal or ground. (Based upon JIS C5402 5.1/MIL-STD-202 Method 301)	No Breakdown
4-1-4	Contact Resistance on Crimped Portion	Crimp the applicable wire on to the terminal, measure by dry circuit, 20mV max., 10mA.	5mΩ max.

			APPROVED	CHECKED	WRITTEN
			BY	BY	BY
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4-2.MECHANICAL PERFORMANCE

Test Description		Procedure		Requirement
4-2-1	Insertion & Withdrawal Force	Insert and withdraw connectors at the speed rate of 25 ± 3mm/minute.		Refer to paragraph 5
4-2-2	Crimping Pull Out Force	Fix the crimped terminal, apply axial pull out force on the wire at the speed rate of 25 ± 3mm/minute. (Based upon JIS C5402 6.8)	AWG #18	9.0kgf min.
			AWG #20	6.0kgf min.
			AWG #22	4.0kgf min.
4-2-3	Terminal Insertion Force	Insert the crimped terminal into the housing.		1.5kgf max.
4-2-4	Terminal/ Housing Retention Force	Apply axial pull out force at the speed rate of 25 ± 3mm/minute on the terminal assembled in the housing.		3.0kgf min.
4-2-5	Pin Retention Force	Apply axial push force at the speed rate of 25 ± 3mm/minute.		3.0kgf min.
4-2-6	Latch Yield Strength	Mate connectors and pull apart until latch break at the speed rate of 25 ± 3mm/minute.		2.0kgf min.
4-2-7	Durability	When mated up to 50 cycles repeatedly by the rate of 10 cycles per minute.	Contact Resistance	20mΩ max.
4-2-8	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	20mΩ max.
			Discontinuity	1μsec. max.
4-2-9	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	20mΩ max.
			Discontinuity	1μsec. max.

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4-3.ENVIRONMENTAL PERFORMANCE AND OTHERS

Test Description		Procedure		Requirement
4-3-1	Temperature Rise	Carrying rated current load. (Based upon UL 498)	Temperature Rise	30°C max.
4-3-2	Heat Resistance	85 ± 2°C, 96 hours (Based upon JIS C0021/MIL-STD-202 Method 108A Cond. A)	Appearance	No Damage
			Contact Resistance	20mΩ max.
4-3-3	Cold Resistance	-25 ± 3°C, 96 hours (Based upon JIS C0020)	Appearance	No Damage
			Contact Resistance	20mΩ max.
4-3-4	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	20mΩ max.
			Insulation Resistance	100MΩ min.
			Dielectric Withstanding Voltage	Must meet 4-1-3
4-3-5	Temperature Cycling	5 cycles of: a) - 55°C 30 minutes b) +85°C 30 minutes (Based upon JIS C0025)	Appearance	No Damage
			Contact Resistance	20mΩ max.
4-3-6	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	20mΩ max.
4-3-7	SO_2 Gas	24 hours exposure to 50 ± 5ppm. SO_2 gas at 40 ± 2°C.	Appearance	No Damage
			Contact Resistance	20mΩ max.
4-3-8	NH_3 Gas	40 minutes exposure to NH_3 gas evaporating from 28% Ammonia solution.	Appearance	No Damage
			Contact Resistance	20mΩ max.
4-3-9	Solderability	Soldering Time: 5 ± 0.5 sec. Solder Temperature: 245 ± 5°C	Solder Wetting	95% of immersed area must show no voids, pin holes
4-3-10	Resistance to Soldering Heat	<u>Solder pot method</u> Soldering Time: 10 ± 0.5 sec. Solder Temperature: 260 ± 5°C <u>Solder iron method</u> Soldering Time: 5 ± 0.5 sec. Solder Temperature: 370°C ~ 400°C	Appearance	No Damage

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5.INSERTION/WITHDRAWAL FORCE:

No. of circuits	Insertion (kgf max.)	Withdrawal (kgf min.)	No. of circuits	Insertion (kgf max.)	Withdrawal (kgf min.)
Single	1.0	0.20	15	11.5	4.00
2	2.0	0.40			
3	3.0	0.60			
4	4.0	0.80			
5	4.5	1.00			
6	5.5	1.30			
7	6.0	1.60			
8	7.0	1.90			
9	7.5	2.20			
10	8.0	2.50			
11	9.0	2.80			
12	9.5	3.10			
13	10.0	3.40			
14	11.0	3.70			