PRODUCT SPECIFICATION

PRODUCT SERIES NAME: D3961 Series | PAGE: 1/4

1.SCOPE:

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

2.CONSTRUCTION、DIMENSIONS 、 MATERIAL & PLATING:

See the attached drawings

3.RATINGS & APPLICABLE WIRES:

Item	Standard		
Rated Voltage (max.)	600V AC, DC		Insulation O.D. 2.80mm (max.)
Rated Current (max.) and Applicable Wires	AWG #18	7.0A AC, DC	
	AWG #20	5.0A AC, DC	
	AWG #22	4.0A AC, DC	
Ambient Temperature Range	-40°C ~ +105°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 I.D.T. Portion	I.D.T. the applicable wire on to the terminal, measure by dry circuit, 20mV max., 10mA.	5mΩ max.

			APPROVED	CHECKED	WRITTEN
			BY	BY	BY
A2	REVISE	2022.11.30	鄢军峰	梁宋付	黄庆
A1	REVISE	2022.08.12			
A0	NEW RELEASE	2017.10.08			
REV.	DESCRIPTION	DATE	DOCUMENT NO: PS-D3961-001		

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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.
			AWG #24	3.0kgf min.
4-2-3	Terminal Insertion Force	Insert the crimped terminal into the housing at a constant speed of 25±3mm per minute.		2.0kgf 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.		2.0kgf min.
4-2-6	Durability	When mated up to 50 cycles repeatedly by the rate of 10 cycles per minute.	Contact Resistance	20mΩ max.
4-2-7	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.
4-2-8	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	105 ± 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	-40 ± 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) - 40°C 30 minutes b) +105°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	Solderability	Soldering Time: 3 ± 0.5 sec. Solder Temperature: 240 ± 5°C	Solder Wetting	95% of immersed area must show no voids, pin holes
4-3-8	Resistance to Soldering Heat	Solder pot method Soldering Time: 5 ± 0.5 sec. Solder Temperature: 245 ± 5°C	Appearance	No Damage

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5.INSERTION/WITHDRAWAL FORCE:

No. of circuits	Insertion (kgf max.)	Withdrawal (kgf min.)
2	3.6	0.50
3	4.8	0.70
4	6.0	0.90
5	7.7	1.20
6	8.4	1.30
7	9.6	1.50
8	10.8	1.70
9	12.0	1.90
10	13.2	2.10
11	14.4	2.30
12	15.6	2.50