PRODUCT SPECIFICATION

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1.SCOPE:

This specification covers the requirements for product performance of 2.00 mm pitch wire to board or wire to wire connector series.

2.PART NAME & PART NUMBERS

Part name	Part number
Housing	C2003HFB C2003HMB C2003HMC
Terminal	C2003FB-T C2003MB-T
Wafer	C2003WVB

3. CONSTRUCTION. DIMENSIONS . MATERIAL & SURFACE FINISH

Construction and dimensions shall be in accordance with the referenced drawings.
Material and surface finish shall be as specified below.

Part name	Material	Surface finish
Housing	Nylon 66	UL94V-0
Terminal	Phosphor bronze	Tin over Nickel/Gold over Nickel

4. RATINGS & APPLICABLE WIRES

<table>
<tr><td>Item</td><td colspan="3">Standard</td></tr>
<tr><td>Rated Voltage (Max.)</td><td colspan="2">100V AC DC</td><td rowspan="5">Insulation O.D.
0.76mm~1.50mm</td></tr>
<tr><td rowspan="4">Rated Current (Max.)
and Applicable Wires</td><td>AWG #22</td><td>3.0A AC DC</td></tr>
<tr><td>AWG #24</td><td>2.5A AC DC</td></tr>
<tr><td>AWG #26</td><td>2.0A AC DC</td></tr>
<tr><td>AWG #28</td><td>1.5A AC DC</td></tr>
<tr><td>Ambient Temperature Range</td><td colspan="3">-40℃~105℃*</td></tr>
</table>

*: Including terminal temperature rise

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5. CONDITIONS：

The conditions shall be in accordance with the referenced data of next table.

Number	Item	Requirement
(1)	Bend up	6°Max.
	Bend down	3°Max.
	Twisting	5°Max.
	Rolling	7°Max.
(2)	Bell mouth (flare)	0.1-0.3 mm
(3)	Cut-off tab length	0.5 mm Max.
(4)	Extruded wire length	0.3-0.6 mm
(5)	Seam	Seam shall not be opened and no wire allowed out of crimping area
(6)	Wire strip length	2.1-2.3 mm ref.
(7)	Lance height	0.3 mm ref.

After crimping，the crimped areas [(5)、(6)] should be as follows.

Wire Size (AWG)	Terminal Part Number	Conductor(mm)		Insulation(mm)		Crimp Strength (kgf)
		Crimp Width	Crimp Height	Crimp Width	Crimp Height	
#22	C2003FB-T C2003MB-T	1.30	0.62~0.67	1.50	1.80	4.00(Min.)
#24			0.55~0.60		1.80	3.00(Min.)
#26			0.52~0.57		1.60	2.00(Min.)
#24	C2003FB-T-L C2003MB-T-L	1.20	0.57~0.62	1.50	1.70	3.00(Min.)
#26			0.52~0.57		1.60	2.00(Min.)
#28			0.47~0.52		1.50	1.00(Min.)

The crimp width at the conductor part & crimp height at the insulation part is a reference value, so adjust it according to a wire to be used。

6. PERFORMANCE

6.1 ELECTRICAL PERFORMANCE

Test Description		Procedure	Requirement
6-1-1	Contact Resistance	Mate connectors, measure by dry circuit, 20mV Max. 10mA. (Based upon JIS C5402 5.4)	15mΩ Max.
6-1-2	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.
6-1-3	Dielectric Withstanding Voltage	Mate connectors, apply 800V AC (rms) for 1 minute between adjacent terminal or ground. (Based upon JIS C5402 5.1/MIL-STD-202 Method 301)	No Breakdown

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6.2 MECHANICAL PERFORMANCE

Test Description		Procedure		Requirement
6-2-1	Insertion & Withdrawal Force	Insert and withdraw connectors at the speed rate of 25 ± 3mm/minute.		Refer to section 7
6-2-2	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 #22	39.2N/4.0kgf Min.
			AWG #24	29.4N/3.0kgf Min.
			AWG #26	19.6N/2.0kgf Min.
			AWG #28	14.7N/1.5kgf Min.
6-2-3	Crimp Terminal Insertion Force	Insert the crimped terminal into the housing. Testing speed: 25 ± 3mm/minute.		N/A
6-2-4	Terminal/Housing Retention Force	Apply axial pull out force at the speed rate of 25 ± 3mm/minute on the terminal assembled in the housing.		1.0kgf Min.
6-2-5	Locking Strength	A socket housing and a header (A plug housing and receptacle housing) shall be mated. A load shall be applied between them.The load to come them off etch other shall be measured. Testing speed: 25 ± 3mm/minute.		2P: 2.0kgf Min. 3P~10P: 3.1kgf Min.
6-2-6	Header Terminal Retention Force	Apply axial push force at the speed rate of 25 ± 3mm/minute.		1.0kgf Min.
6-2-7	Durability	When mated up to 30 cycles repeatedly by the rate of 10 cycles per minute.	Contact Resistance	25mΩ Max.
6-2-8	Vibration	Amplitude: 1.52mm P-P Sweep time: 10-55-10 Hz in 1 minute Duration: 2 hours in each X.Y.Z. axes (Based upon JIS C 60068-2-6/MIL-STD-202 Method 201)	Appearance	No Damage
			Contact Resistance	25mΩ Max.
			Discontinuity	1μsec. Max.
6-2-9	Physical Shock	Mate connectors and shock at 50 g's with ½ sine wave (11 milliseconds) shocks in the ±X,±Y,±Z axes (18 shocks total).	Appearance	N/A
			Contact Resistance	
			Discontinuity	

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6.3 ENVIRONMENTAL PERFORMANCE AND OTHERS

Test Description		Procedure		Requirement
6-3-1	Temperature Rise	Carrying rated current load. (Based upon UL 498)	Temperature Rise	30°C Max.
6-3-2	Heat Resistance	85 ± 2°C, 250 hours (Based upon JIS C0021/MIL-STD-202 Method 108A Cond. A)	Appearance	No Damage
			Contact Resistance	25mΩ Max.
6-3-3	Humidity	Temperature: 40 ± 2°C Relative Humidity: 90 ~ 95% Duration: 240 hours (Based upon JIS C0022/MIL-STD-202 Method 103B Cond. B)	Appearance	No Damage
			Contact Resistance	25mΩ Max.
			Insulation Resistance	500MΩ Min.
			Dielectric Withstanding Voltage	Must meet 6-1-3
6-3-4	Temperature Cycling	25 cycles of: a) - 55°C 30 minutes b) +85°C 30 minutes (Based upon MIL-STD-202 Method 107 Cond. A-1)	Appearance	No Damage
			Contact Resistance	25mΩ Max.
6-3-5	Salt Spray	24 hours exposure to a salt spray from the 5 % solution at 35 ± 2°C. (Based upon JIS C0023/MIL-STD-202 Method 101D Cond. B)	Appearance	No Damage
			Contact Resistance	25mΩ Max.
6-3-6	Hydrogen Sulfide Gas	Concentration: 3 ± 1ppm. Temperature: 40 ± 2°C Relative Humidity: 80±5% 96 hours	Appearance	No Damage
			Contact Resistance	25mΩ Max.
6-3-7	NH_3 Gas	40 minutes exposure to NH3 gas evaporating from 28% Ammonia solution.	Appearance	No Damage
			Contact Resistance	25mΩ Max.
6-3-8	Solderability	Soldering Time: 3~5 sec. Solder Temperature: 245 ± 5°C	Solder Wetting	N/A
6-3-9	Resistance to Soldering Heat	Normal materials Soldering Time:3~5 sec. Solder Temperature: 250± 5°C High temperature resistant materials Soldering Time:3~5 sec. Solder Temperature: 260 ± 5°C	Appearance	N/A

7. INSERTION AND WITHDRAWAL FORCE

unit:N

Number of Circuits (W-B)	Insertion (Max.)	Withdrawal (Min.)	
	1 th	1 th	30 th
2P	15	0.5	0.5
3P	18	1.0	1.0
4P	20	1.5	1.5
5P	23	2.0	2.0
6P	25	2.5	2.5
7P	28	3.0	3.0
8P	30	3.5	3.5
9P	33	4.0	4.0
10P	35	4.5	4.5
11P	38	5.0	5.0
12P	40	5.5	5.5
13P	43	6.0	6.0
14P	45	6.5	6.5
15P	48	7.0	7.0