PRODUCT SPECIFICATION

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			APPROVED	CHECKED	WRITTEN
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1.SCOPE:

This specification covers the requirements for product performance of 2.50 mm pitch wire to wire orwire to board connector series.

2.PART NAME & PART NUMBERS

Part name	Part number
Housing	C2504HFA/HM/HMA
Terminal	A2509-T-A /A2501M-T
Wafer	C2504WV/WR/WVR

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		Brass /Phosphor Bronze	Tin over Nickel/Gold over Nickel
Wafer	Post	Brass	Tin over Nickel
	Body	Nylon 66	UL94V-0

4. RATINGS & APPLICABLE WIRES

Item	Standard					
Rated Voltage (Max.)	250V AC DC					Insulation (A2509-T-A O.D.1.90mm Max.) (A2501M-T O.D.1.60mm Max.)
Rated Current (Max.) and Applicable Wires	No.of circuits	Wire size (AWG)				
		#22	#24	#26	#28	
	1 circuit	3.0A	2.5A	2.0A	1.5A	
Ambient Temperature Range	-40℃~105℃*					

Note: Do not branch in parallel current which exceeds the rated current

*: Including terMinal temperature rise

5. CONDITIONS：

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

Number	Item	Requirement
(1)	Bend up	4°Max.
	Bend down	4°Max.
	Twisting	3°Max.
	Rolling	8°Max.
(2)	Bell mouth (flare)	0.2-0.5 mm
(3)	Cut-off tab length	0.2 mm Max.
(4)	Extruded wire length	0-1.0 mm
(5)	Seam	Seam shall not be opened and no wire allowed out of crimping area
(6)	Wire strip length	1.2-1.7 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	A2509-T-A A2501M-T	1.43	0.72~0.82	1.46	1.63	4.00(Min.)
#24				1.44		3.00(Min.)
#26		1.38	0.69~0.79	1.41	1.41	2.00(Min.)
#28						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。

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6. PERFORMANCE

6.1 ELECTRICAL PERFORMANCE

Test Description		Procedure	Requirement
6-1-1	Contact Resistance	Mate connectors, measure by dry circuit, 20mV Max. 10mA.	20mΩ Max.
6-1-2	Insulation Resistance	Mate connectors, apply 500V DC between adjacent terminal or ground.	1000MΩ Min.
6-1-3	Dielectric Withstanding Voltage	Mate connectors, apply 1000V AC (rms) for 1 minute between adjacent terminal or ground.	No Breakdown and Flashover

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.	AWG #22	4.00(Min.)
			AWG #24	3.00(Min.)
			AWG #26	2.00(Min.)
			AWG #28	1.00(Min.)
6-2-3	Crimp Terminal Insertion Force	Insert the crimped terminal into the housing. Testing speed: 25 ± 3mm/minute.		1.5kgf Max.
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.		1.5kgf Min.
6-2-5	Header Terminal Retention Force	Apply axial push force at the speed rate of 25 ± 3mm/minute.		1.2kgf Min.
6-2-6	Durability	mated up to 30 cycles repeatedly	Contact Resistance	40mΩ Max.

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6-2-7	Vibration	Amplitude: 1.5mm P-P Sweep time: 10-55-10 Hz in 1 minute Duration: 2 hours in eachX.Y.Z. axes	Appearance	No Damage
			Contact Resistance	40mΩ Max.
			Discontinuity	1μsec. Max.
6-2-8	Mechanical 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	40mΩ Max.
			Discontinuity	1μsec. Max.

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6.3 ENVIRONMENTAL PERFORMANCE AND OTHERS

Test Description		Procedure		Requirement
6-3-1	Temperature Rise	Carrying rated current load.	Temperature Rise	30°C Max.
6-3-2	Heat Resistance	105 ± 2°C, 96 hours	Appearance	No Damage
			Contact Resistance	40mΩ Max.
6-3-3	Cold Resistance	-40 ± 3°C, 96 hours	Appearance	No Damage
			Contact Resistance	40mΩ Max.
6-3-4	Humidity	Temperature: 60 ± 2°C Relative Humidity: 85 ± 3% Duration: 96 hours	Appearance	No Damage
			Contact Resistance	40mΩ Max.
			Insulation Resistance	100MΩ Min.
			Dielectric Withstanding Voltage	Must meet 6-1-3
6-3-5	Salt Spray	24 hours exposure to a salt spray from the 5 % solution at 35 ± 2℃.	Appearance	No Damage
			Contact Resistance	40mΩ Max.
6-3-6	Solderability	Soldering Time: 3~5 sec. Solder Temperature: 244 ± 5℃	Solder Wetting	95% of immersed area must show no voids, pin holes
6-3-7	Resistance to Soldering Heat	Soldering Time:3~5 sec. Solder Temperature: 250± 5°C	Appearance	No Damage

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7. INSERTION AND WITHDRAWAL FORCE

PREPLATED TIN

unit: kgf

Number of Circuits	Insertion (Max.)			Withdrawal (Min.)		
	1 th	6 th	30 th	1 th	6 th	30 th
2P	3.6	3.4	3.4	0.65	0.55	0.55
3P	4.4	4.1	4.1	0.70	0.60	0.60
4P	5.2	4.8	4.8	0.75	0.65	0.65
5P	6	5.5	5.5	0.80	0.70	0.70
6P	6.6	6.0	6.0	0.90	0.80	0.80
7P	7.2	6.5	6.5	1.00	0.90	0.90
8P	7.8	7.0	7.0	1.15	1.00	1.00
9P	8.4	7.5	7.5	1.30	1.15	1.15
10P	9.0	8.0	8.0	1.45	1.30	1.30
11P	9.6	8.5	8.5	1.60	1.45	1.45
12P	10.2	9.0	9.0	1.85	1.60	1.60
13P	10.8	9.5	9.5	2.00	1.75	1.75
14P	11.4	10.0	10.0	2.15	1.90	1.90
15P	12.0	10.5	10.5	2.30	2.05	2.05
16P	12.6	11.0	11.0	2.45	2.20	2.20
17P	13.2	11.5	11.5	2.60	2.35	2.35
18P	13.8	12.0	12.0	2.75	2.50	2.50
19P	14.4	12.5	12.5	3.00	2.65	2.65
20P	15.0	13.0	13.0	3.15	2.70	2.70