CJTconn 長江連接器有限公司
CHANGJIANG CONNECTORS CO.,LTD.

PRODUCT SPECIFICATION

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1.SCOPE:

This specification covers the requirements for product performance of 5.00mm pitch wire to board connector series.

2.PART NAME & PART NUMBERS

Part name	Part number
Housing	A5001H A5001HB
Terminal	A3963-T A3963-T-H
Wafer	A5001WV A5001WVA A5001WRA

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
Wafer	Post	Brass	Tin over Nickel
	Body	Nylon 66	UL94V-0

4. RATINGS & APPLICABLE WIRES

Item	Standard		
Rated Voltage (Max.)	250V AC DC		Insulation O.D(mm)
Rated Current (Max.) and Applicable Wires	AWG #16	10A AC DC(W-B 2-circuit)	Insulation O.D. 3.40mm (max.)
	AWG #18	8.5A AC DC(W-B 2-circuit)	
	AWG #20	7.0A AC DC(W-B 2-circuit)	
	AWG #22	6.0A AC DC(W-B 2-circuit)	
Ambient Temperature Range	-40℃~105℃*		

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

*: 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	3°Max.
	Bend down	3°Max.
	Twisting	4°Max.
	Rolling	6°Max.
(2)	Bell mouth (flare)	0.1-0.40 mm
(3)	Cut-off tab length	0.3 mm Max.
(4)	Extruded wire length	0.5-1.0 mm
(5)	Seam	Seam shall not be opened and no wire allowed out of crimping area
(6)	Wire strip length	3.0-3.5 mm ref.
(7)	Lance height	1 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	
#16	A3963-T A3963-T-H	1.85	1.45-1.60	2.95 (max)	3.05	10.00(Min.)
#18			1.00-1.40		2.85	9.00(Min.)
#20			1.15~1.25		2.65	5.9(Min.)
#22			0.95~1.05		2.65	3.60(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.	10 mΩ Max.
6-1-2	Insulation Resistance	Mate connectors, apply 500V DC between adjacent terminal or ground.	1000 MΩMin.
6-1-3	Dielectric Withstanding Voltage	Mate connectors, apply 1500V AC (rms) for 1 minute between adjacent terminal or ground.	No Breakdown and Flashover Current leakage: 5 mA Max.

6.2 MECHANICAL PERFORMANCE

Test Description		Procedure		Requirement
6-2-1	Insertion & Withdrawal Force (Without Housing Lock.)	Insert and withdraw connectors at the speed rate of 100mm/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.	#16	10.00(Min.)
			#18	9.00(Min.)
			#20	5.9(Min.)
			#22	3.60(Min.)
6-2-3	Locking Strength	Apply axial pull out force at the speed rate of 100 mm/minute on the terminal assembled in the housing.		2Pos :1.5kgf Min. 3-11Pos :5.0kgf Min.
6-2-3	Crimp Terminal Insertion Force	Insert the crimped terminal into the housing. Testing speed: 25 ± 3mm/minute.		0.7kgf Max
6-2-4	Terminal/Housing Retention Force	Apply axial pull out force at the speed rate of 100mm/minute on the terminal assembled in the housing.		3.0kgf Min.
6-2-5	Header Terminal Retention Force	Apply axial push force at the speed rate of 100mm/minute.	After reflow	3.0kgf Min.
6-2-6	Durability	When mated up to 50 cycles by therate of insertion and Withdrawal (TE Spec. 109-5213)	Contact Resistance	20mΩ Max.

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6-2-7	Vibration	Amplitude: 1.52mm P-P Sweep time: 10-55-10 Hz in 1 minute Duration: 2 hours in eachX.Y.Z. axes	Appearance	No Damage
			Contact Resistance	20mΩ Max.
			Discontinuity	1μsec. max.
6-2-8	Mechanical Shock	Accelerated Velocity: 490 m/s2 (50 G) Waveform : Haif sine curve Duration : 11 m sec. Velocity Change : 11.3 m/s Number of Drops : 3 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops. TE Spec. 109-5208	Appearance	No Damage
			Contact Resistance	20mΩ max.
			Discontinuity	1μsec. max.

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	85 °C, 250 hours	Appearance	No Damage
			Contact Resistance	20mΩ Max.
6-3-3	Cold Resistance	-30 ± 3°C, 96 hours	Appearance	No Damage
			Contact Resistance	20mΩ Max.
6-3-3	Thermal shock	High temperature: 85 ℃ Time: 30 minutes, Low temperature: - 55 ℃ Time: 30 minutes, Test round: 25cycles,	Appearance	No Damage
			Contact Resistance	20mΩ Max.

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6-3-4	Humidity	Temperature: 40 ± 2°C Relative Humidity: 90~95% Duration: 240 hours	Appearance	No Damage
			Contact Resistance	20mΩ Max.
			Insulation Resistance	500MΩ Min.
			Dielectric Withstanding Voltage	Must meet 6-1-3
6-3-5	Salt Spray	24 hours exposure to a salt spray from the 5 % .	Appearance	No Damage
			Contact Resistance	20mΩ Max.
6-3-6	Solderability	Soldering Time: 3±0.5 sec. Solder Temperature: 230 ± 5°C	Solder Wetting	95% of immersed area must show no voids, pin holes
6-3-7	Resistance to Soldering Heat	Normal materials Soldering Time:5~7 sec. Solder Temperature: 255~260°C	Appearance	No Damage
6-3-8	H_2S Gas	Duration: 96 hours exposure; Atmosphere: 2~4ppm， H_2S gas; Temperature: 40 ± 2°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	1 th	50 th
2P	2.0	0.4	0.2
3P	3.0	0.6	0.3
4P	4.0	0.8	0.4
5P	5.0	1.0	0.5
6P	6.0	1.3	0.7
7P	7.0	1.6	0.9
8P	8.0	1.9	1.1
9P	9.0	2.2	1.3
10P	10.0	2.5	1.5
11P	11.0	2.7	1.7
12P	12.0	2.9	1.9