



PRODUCT SPECIFICATION

PRODUCT SERIES NAME: A1002-P SERIES

PAGE : 1/6

Index

1. Scope
2. Part name & part numbers
3. Construction. dimensions. material & surface finish
4. Ratings & applicable wires
5. Conditions
6. Performance
  - 6.1 Electrical performance
  - 6.2 Mechanical performance
  - 6.3 Environmental performance and others
7. Insertion and Withdrawal Force

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## PRODUCT SPECIFICATION

PRODUCT SERIES NAME: A1002-P SERIES

PAGE : 2/6

## 1.SCOPE:

This specification covers the requirements for product performance of 1.00 mm pitch wire to board connector series.

## 2.PART NAME &amp; PART NUMBERS

Part name	Part number
Housing	A1002HP
Terminal	A1006-T
Wafer	A1002WVP A1002WRP

## 3. CONSTRUCTION. DIMENSIONS . MATERIAL &amp; 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	PBT		UL94V-0
Terminal	Phosphor bronze		Tin over Nickel/Gold over Nickel
Wafer	Post	Phosphor bronze	Tin over Nickel/Gold over Nickel
	Body	LCP/Nylon 9T	UL94V-0

## 4. RATINGS &amp; APPLICABLE WIRES

Item	Standard		
Rated Voltage (Max.)	50V AC DC		Insulation O.D. 0.40~0.80m
Rated Current (Max.) and Applicable Wires	AWG #28	1.0A AC DC	
	AWG #30	1.0A AC DC	
	AWG #32	0.8A AC DC	
Ambient Temperature Range	-40℃~105℃*		

\*: Including terminal temperature rise

**PRODUCT SPECIFICATION**
**PRODUCT SERIES NAME: A1002-P SERIES**

PAGE : 3/6

**5. CONDITIONS:**

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

Number	Item	Requirement
(1)	Bend up	2°Max.
	Bend down	3°Max.
	Twisting	2°Max.
	Rolling	5°Max.
(2)	Bell mouth (flare)	0.05-0.25 mm
(3)	Cut-off tab length	0.3 mm Max.
(4)	Extruded wire length	0.2-0.6 mm
(5)	Seam	Seam shall not be opened and no wire allowed out of crimping area
(6)	Wire strip length	1.2-1.5 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	
# 28	A1006-T	0.70	0.43~0.47	0.80	1.00	1.00(Min.)
# 30			0.40~0.44		0.95	0.51(Min.)
# 32			0.38~0.42		0.90	0.30(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)	30mΩ Max.
6-1-2	Insulation Resistance	Mate connectors, apply 250V DC between adjacent terminal or ground. (Based upon JIS C5402 5.2/MIL-STD-202 Method 302 Cond. B)	100MΩ Min.
6-1-3	Dielectric Withstanding Voltage	Mate connectors, apply 500V AC (rms) for 1 minute between adjacent terminal or ground. (Based upon JIS C5402 5.1/MIL-STD-202 Method 301)	No Breakdown
6-1-4	Contact Resistance on Crimped Portion	Crimp the applicable wire to the terminal, measured by dry circuit, 20mV Max, 10 mA Max.	5mΩ Max.

**PRODUCT SPECIFICATION**
**PRODUCT SERIES NAME: A1002-P SERIES**

PAGE : 4/6

**6.2 MECHANICAL PERFORMANCE**

Test Description		Procedure		Requirement
6-2-1	Insertion & Withdrawal Force	Insert and withdraw connectors at the speed rate of $25 \pm 3$ mm/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 $25 \pm 3$ mm/minute. (Based upon JIS C5402 6.8)	AWG #28	1.00kgf Min.
			AWG #30	0.51kgf Min.
			AWG #32	0.30kgf Min.
6-2-3	Crimp Terminal Insertion Force	Insert the crimped terminal into the housing. Testing speed: $25 \pm 3$ mm/minute.		N/A
6-2-4	Terminal/Housing Retention Force	Apply axial pull out force at the speed rate of $25 \pm 3$ mm/minute on the terminal assembled in the housing.		0.71kgf Min.
6-2-5	Locking Strength	A socket housing and a header shall be mated. A load shall be applied between them. The load to come them off each other shall be measured. Testing speed: $25 \pm 3$ mm/minute.		1.00kgf Min..
6-2-6	Header Terminal Retention Force	Apply axial push force at the speed rate of $25 \pm 3$ mm/minute.		0.51kgf Min.
6-2-7	Durability	When mated up to 30 cycles repeatedly by the rate of 10 cycles per minute.	Contact Resistance	50mΩ 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 MIL-STD-202	Appearance	No Damage
			Contact Resistance	50mΩ Max.
			Discontinuity	1μsec. Max.
6-2-9	Physical Shock	Mate connectors and shock at 50 g's with $\frac{1}{2}$ sine wave (11 milliseconds) shocks in the $\pm X, \pm Y, \pm Z$ axes (18 shocks total).	Appearance	N/A
			Contact Resistance	
			Discontinuity	

**PRODUCT SPECIFICATION**
**PRODUCT SERIES NAME: A1002-P SERIES**

PAGE : 5/6

**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	50mΩ Max.
6-3-3	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	50mΩ Max.
			Insulation Resistance	100MΩ 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 JIS C0025)	Appearance	No Damage
			Contact Resistance	50mΩ 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	50mΩ 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	50mΩ Max.
6-3-7	NH <sub>3</sub> Gas	40 minutes exposure to NH <sub>3</sub> gas evaporating from 28% Ammonia solution.	Appearance	No Damage
			Contact Resistance	10mΩ Max.
6-3-8	Solderability	Soldering Time: 3~5 sec. Solder Temperature: 245 ± 5°C	Solder Wetting	95% of immersed area must show no voids, pin holes
6-3-9	Resistance to Soldering Heat	<u>High temperature resistant materials</u> Soldering Time: 3~5 sec. Solder Temperature: 260 ± 5°C	Appearance	No Damage



PRODUCT SPECIFICATION

PRODUCT SERIES NAME: A1002-P SERIES

PAGE : 6/6

7. INSERTION AND WITHDRAWAL FORCE

unit:N

Number of Circuits (W-B, Single Pin)	Insertion (Max.)	Withdrawal (Min.)	
	1 th	1 th	30 th
2P	20	2.0	2.0
3P	20	2.0	2.0
4P	20	2.0	2.0
5P	30	3.0	3.0
6P	30	3.0	3.0
7P	30	3.0	3.0
8P	40	4.0	4.0
9P	40	4.0	4.0
10P	40	4.0	4.0
11P	50	5.0	5.0
12P	50	5.0	5.0
13P	50	5.0	5.0
14P	60	6.0	6.0
15P	60	6.0	6.0