



PRODUCT SPECIFICATION

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			APPROVED	CHECKED	WRITTEN
			BY	BY	BY
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1.SCOPE:

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

2.PART NAME & PART NUMBERS

Part name	Part number
Housing	A2502H A2502HWV
Terminal	A2502-T
Wafer	A2502WV/WVA/WVB A2502WR/WRA/WRB

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/PBT	UL94V-0
Terminal		Phosphor bronze	Tin over Nickel/Gold over Nickel
Wafer	Post	Brass	Tin over Nickel/Gold over Nickel
	Body	Nylon 66/PBT	UL94V-0

4. RATINGS & APPLICABLE WIRES

Item	Standard	
Rated Voltage (Max.)	250V AC DC	
Rated Current (Max.) and Applicable Wires	AWG #22	3.0A AC DC
	AWG #24	2.5A AC DC
	AWG #26	2.0A AC DC
	AWG #28	1.5A AC DC
	AWG #30	1.0A AC DC
Ambient Temperature Range	-40°C~105°C*	

*: 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	6°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	1.9-2.5 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	
# 22	A2502-T	1.40	0.70~0.80	1.90	1.80	5.00(Min.)
# 24			0.65~0.75		1.70	3.00(Min.)
# 26			0.60~0.70		1.60	2.00(Min.)
# 28			0.60~0.65		1.50	1.00(Min.)
# 30			0.57~0.62		1.40	0.50(Min.)

The crimp width at the conductor part、crimp height & crimp width 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)	10mΩ 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 ± 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 ± 3 mm/minute. (Based upon JIS C5402 6.8)	AWG #22	49.0N/5.0kgf Min.
			AWG #24	29.4N/3.0kgf Min.
			AWG #26	19.6N/2.0kgf Min.
			AWG #28	9.8N/1.0kgf Min.
			AWG #30	4.9N/0.5kgf Min.
6-2-3	Crimp Terminal Insertion Force	Insert the crimped terminal into the housing.		0.5kgf Max.
6-2-4	Terminal/Housing Retention Force	Apply axial pull out force at the speed rate of 25 ± 3 mm/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 ± 3 mm/minute.		1.0kgf Min.
6-2-6	Durability	When mated up to 50 cycles repeatedly by the rate of 10 cycles per minute.	Contact Resistance	20mΩ Max.
6-2-7	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	20mΩ 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. (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 20mΩ 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 20mΩ 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 20mΩ 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 20mΩ 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 20mΩ Max.
6-3-7	Solderability	Soldering Time: 3~5 sec. Solder Temperature: 245 ± 5°C		Solder Wetting 95% of immersed area must show no voids, pin holes
6-3-8	Resistance to Soldering Heat	<u>Normal materials</u> Soldering Time:3~5 sec. Solder Temperature: 250± 5°C <u>High temperature resistant materials</u> Soldering Time:3~5 sec. Solder Temperature: 260 ± 5°C <u>Iron soldering</u> Soldering Time:3 sec. Solder Temperature: 340 ± 5°C		Appearance No Damage

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7. INSERTION AND WITHDRAWAL FORCE

unit: kgf

Number of Circuits (W-B)	Insertion (Max.)		Withdrawal (Min.)	
	1 th	50 th	1 th	50 th
2P	2.00	3.40	0.40	0.20
3P	2.50	4.10	0.50	0.30
4P	3.00	4.80	0.60	0.40
5P	3.50	5.50	0.70	0.50
6P	4.00	6.00	0.80	0.60
7P	4.50	6.50	0.90	0.70
8P	5.00	7.00	1.00	0.80
9P	5.50	7.50	1.10	0.90
10P	6.00	8.00	1.20	1.00
11P	6.50	8.50	1.30	1.10
12P	7.00	9.00	1.40	1.20
13P	7.50	9.50	1.50	1.30
14P	8.00	10.00	1.60	1.40
15P	8.50	10.50	1.70	1.50