PRODUCT SPECIFICATION

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A0	NEW RELEASE	2021.12.27			
REV.	DESCRIPTION	DATE	DOCUMENT NO: PS-A2508-B-000		

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1.SCOPE:

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

2.PART NAME & PART NUMBERS

Part name	Part number
Housing	A2508HB/HMB
TPA	A2508S
Terminal	A2508-T(-H) A2508M-T-B(-H)

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

Item	Standard		
Rated Voltage (max)	250V AC DC		
Rated Current (max.) and Applicable Wires	AWG #20	3.0A AC, DC	Insulation O.D. 0.80~1.90mm
	AWG #22	3.0A AC, DC	
	AWG #24	2.5A AC, DC	
	AWG #26	2.0A AC, DC	
	AWG #28	1.5A 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 drawing of next page.

Number	Item	Requirement
(1)	Bend up	3°max.
	Bend down	3°max.
	Twisting	4°max.
	Rolling	5°max.
(2)	Bell mouth (flare)	0.1-0.3 mm
(3)	Cut-off tab length	0.3 mm max.
(4)	Extruded wire length	0.3-0.7mm
(5)	Seam	Seam shall not be opened and no wire allowed out of crimping area
(6)	Wire strip length	2.0-2.2 mm ref.
(7)	Lance height	0.5 mm ref.

5.1 Crimp width、crimp height & crimp strength

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	
#20	A2508-T-H A2508M-T-B-H	1.40	0.85~0.95	1.90(Max)	2.0	5.00(Min.)
#22			0.75~0.85		1.9	4.00(Min.)
#24			0.70~0.80		1.8	3.00(Min.)
#22	A2508-T A2508-T-L A2508M-T-B		0.70~0.80		1.9	4.00(Min.)
#24			0.65~0.75		1.8	3.00(Min.)
#26			0.60~0.70		1.7	2.00(Min.)
#28			0.57~0.62		1.7	1.00(Min.)

Crimp width at the conductor part & crimp height at the insulation part is a reference value when UL1007 is used.

Note: When using the retainer, crimp height of the insulation part is 1.9mm at the maximum.

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)	500MΩ Min.
6-1-3	Dielectric Withstanding Voltage	Mate connectors, apply 1500V 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	50N/5.1kgf Min.
			AWG #22	40N/4.08kgf Min.
			AWG #24	30N/3.06kgf Min.
			AWG #26	20N/2.04kgf Min.
			AWG #28	10N/1.02kgf Min.
6-2-3	Locking Strength	A socket housing and a header 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~3P: 2.0kgf Min. 4P~16P: 3.0kgf Min.
6-2-4	Crimp Terminal Insertion Force	Insert the crimped terminal into the housing. Testing speed: 25 ± 3mm/minute.		0.8kgf Max.
6-2-5	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.
6-2-6	Panel Withdrawal Forces	withdraw connectors at the speed rate of 25 ± 3mm/minute.(Based upon EIA 364-13)		2P~16P: 70N Min 2x9P: 85N Min
6-2-7	Durability	When mated up to 30 cycles repeatedly by the rate of 10 cycles per minute.	Contact Resistance	20mΩ 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	20mΩ 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, 96 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	300MΩ 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	NH3 Gas	40 minutes exposure to NH3 gas evaporating from 28% Ammonia solution.	Appearance	No Damage
			Contact Resistance	20mΩ 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	<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	Appearance	N/A

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7. INSERTION FORCE (I.F.) & WITHDRAWAL FORCE (W.F.)

Number of Circuits	At initial		At 30th
	I.F. (max)(kg)	W.F. (Min.)(kg)	W.F. (Min.)(kg)
Single	/	/	/
2	2.04	0.10	0.08
3	2.55	0.15	0.10
4	3.06	0.20	0.12
5	3.57	0.26	0.15
6	4.08	0.30	0.20
7	4.59	0.36	0.26
8	5.10	0.41	0.30
9	5.61	0.46	0.36
10	6.12	0.51	0.41
11	6.63	0.56	0.46
12	7.14	0.61	0.51
13	7.65	0.66	0.56
14	8.16	0.71	0.61
15	8.67	0.76	0.66
16	9.18	0.81	0.71
2x9	8.67	0.76	0.66