



PRODUCT SPECIFICATION

Doc No: DS01CNF21A

Date: 2014/10/21

Rev: A

PRODUCT NAME

NGFF

(M.2)

PART NUMBER

AWM-215XXR 、 AWM-310XXR

、 AWM-410XXR

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REVISION HISTORY

Rev.	Date	History
A	2014/10/21	Initial release



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1.0 SCOPE

This specification defines the performance for the NGFF.

Unless Otherwise Specified, the test and measurements are to be carried out in the following standard Conditions.

Temperature :20~30°C

Relative Humidity : 25~85% R.H.

2.0 APPLICATION DOCUMENTS AND SPECIFICATIONS

See drawings and any other sections of this specification for the relevant reference documents. In cases where the product specification differs from the product drawings, the product drawings take precedence.

3.0 RATINGS

3.1 Rating Current	0.5A(Max.)/(1PIN)
3.2 Rating Voltage	50V AC
3.3 Durability	60 mating cycles
3.4 Operating Temperature	-40°C to +80°C
3.5 Storage Temperature	-40°C to +80°C
3.6 Ambient Humidity	90%~95% R.H.



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4.0 PART LIST & MATERIAL SPECIFICATIONS

Item	Material
4.1 Plastic Body :	LCP, Color Black.
4.2 Contact :	Phosphor Bronze Alloy (C5210R-EH) Contacts Plating: Contact area: Gold Plated (Gold Flash / 3u" / 10u" / 15u" / 30u") Solder area: Matte Tin All under-plated Ductile Nickel 50 micro inches (Min.)
4.3 Hold Down :	Brass(C2680R-H) Plating: Solder area: Matte Tin All under-plated Ductile Nickel 50 micro inches (Min.)

5.0 ELECTRICAL PERFORMANCE SPECIFICATIONS

Item	Test Condition	Requirement
5.1 Contact Resistance	Solder connectors on PCB and mate them together, measure by applying closed circuit current of 100mA maximum at open circuit voltage of 20mV (max). (JIS C5402 5.4)	Initial: 55 mΩ (Max) After: 20 mΩ Max change
5.2 Insulation Resistance	Apply 500V DC between adjacent contacts, or contact and ground. (MIL-STD-202 METHOD 302)	500 MΩ (Min.)
5.3 Dielectric Withstanding Voltage	Mate connectors; apply 300V AC at 60 Hz(rms.) between two adjacent for 1 minute. (Trip current:0.5mA) (MIL-STD-202 METHOD 301)	No breakdown
5.4 Temperature Rise	Mate connector: measure the temperature rise at rated current after 0.5A/Power contact. (EIA-364-70 Method 2.)	30°C MAX



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6.0 MECHANICAL PERFORMANCE SPECIFICATIONS

Item	Test Condition	Requirement
6.1 Mating / Unmating Force	Card mating/unmating sequence: a) Insert the card at the angle specified by the manufacturer b) Rotate the card into position c) Reverse the installation sequence to unmated Operation Speed: 25.4mm per minute. Measure the force required to mating/unmating connector (EIA-364-13, Method A.)	Mating: 20 N (Max). Unmating: 25 N (Max)
6.2 Durability	After 60 mating and unmating cycles with 1.0mm thick board at the rate of 25 ± 3 mm/min. The connector shall be of no damage to the housing or contacts. The connector shall also meet the requirements of contact resistance in the paragraph 5.1 (EIA364-09)	Finish 1.Contact Resistance: 20 m Ω Max change 2.No Damage
6.3 Vibration	Mate dummy card and subject to the following vibration conditions, for a period of 30 minutes in each of 3 mutually perpendicular axis, passing DC 1 mA during the test. Amplitude: 1.52 mm P-P or 19.6 m/s ² Frequency: 10-55-10Hz Shall be traversed in 1minute. (MIL-STD-202 METHOD 201)	Finish 1. No electrical discontinuity more than 0.1 μ s. 2 .No Damage 3 .Contact Resistance: 20 m Ω Max change



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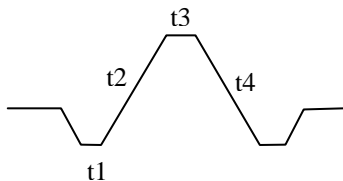
6.4 Shock

Solder connectors on PCB and mate them together, subject to the following shock conditions, 3 shocks shall be performed along 3 mutually perpendicular axes, passing DC 1mA current during the test. A (50G, 11 ms Half-sine) (MIL-STD-202 METHOD 213)

Finish

1. No electrical discontinuity more than 1µs.
2. No Damage
3. Contact Resistance: 20 mΩ Max change

7.0 ENVIRONMENTAL PERFORMANCE SPECIFICATIONS

Item	Test Condition			Requirement
7.1 Temperature Shock 	Stage	Temp	Time	Finish
	t1	-55±5°C	30 min	1. Contact Resistance:
	t2	-55±5°C ~ +85±5°C	5 min	20 mΩ Max change
	t3	+85±5°C	30 min	2. No abnormality
	t4	+85±5°C ~ -55°C±5°C	5 min	
	Test time: 5 cycles (MIL-STD-202 METHOD 107)			
7.2 Heat Resistance	Mated Connector 105°C, 120 hours, (EIA-364-17, Method A.)			Finish 1. Contact Resistance: 20 mΩ Max change
7.3 Cold Resistance	Solder connectors on PCB and mate them together, expose to -55±3°C for 96hrs. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 of 2hrs, after which the specified measurements shall be performed. (EIA364-59)			Finish 1. Contact Resistance: 20 mΩ Max change
7.4 Humidity	Humidity storage at +40±3°C with 90±5% RH for 96 hours. (EIA364-31)			Finish 1. Contact Resistance: 20 mΩ Max change 2. Insulation Resistance: 100MΩ(Min)



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7.5 Salt Spray

5 ± 1% salt solutions, at 35 ± 2°C duration 24 hours.
Connectors detached
(MIL-STD-1344)

Finish

- 1 .Contact Resistance:
20 mΩ Max change
- 2 .No Damage

7.6 Solder ability

Dip solder tails into the molten solder(held at 230±5°C) up to 0.5mm from the tip of tails for 3±0.5 seconds.
(MIL-STD-202 METHOD 208)

95%of immersed area must show no voids , pin holes.

7.7 Resistance to soldering heat

All connectors designed for PCB soldering within this specification must be able to withstand the heat from solder oven according to the graph below. The cycle should be repeated twice.
(MIL-STD-202 METHOD 210)

No melting, cracks or functional damage allowed

Peak temperature: 250°C

Soldering temperature: 180~200°C

Preheating temperature: 155~165°C

