PRODUCT SPECIFICATION **PS-7522** Rev. A

ORIGINAL

Title: **Box Header Connector Product Specification**

Part Number: **G823 Series**

Description: **Box Header 2.00 MM PITCH, Connector**

Revisions Control

Rev.	ECN Number	Originator	Approval	Issue Date
A	NE-13140	Aqua Chou	Roger Tsai	08/26/2013

Product Specification Origination

Originator:	Date:	Checked by:	Date:	Approved by:	Date:
Aqua Chou	08/26/2013	Roger Tsai	08/26/2013	Roger Tsai	08/26/2013

1.0 GENERAL DESCRIPTION

This specification defines the detail requirements of the Box Header connector, G823 series..

2.0 APPLICABLE DOCUMENTS

ANSI/EIA-364	Test Methods For Electrical Connectors
MIL-STD-1344A	Test methods for electrical connectors
MIL-G-45204	Gold plating (electrodeposited)

3.0 REQUIREMENTS

3.1 Material and Finish:

A) Insulator: High Temperature Thermoplastic, UL 94 flammability rated
B) Contact: Copper Alloy
C) Contact finish:
- Contact area: Selective Gold Plated or Tin Plated
- Soldering area: Selective Gold Plated or Tin Plated
- Under-plated: Nickel Plated

3.2 *Rating*

A) Rate Voltage: 250 V DC

B) Rate Current: 1.5 Amps

C) Operating Temperature: -25°C to +85°C

3.3 Laboratory Approvals/Flammability:

A) Laboratory Approvals: Product shall be UL listed or recognized and CSA certified.
B) Flammability: Plastic material used in the construction of this product shall be rated 9flammability rated or better, per UL-STD-94.

3.4 Workmanship:

Product shall be uniform in quality and be free from defects that adversely affect life, serviceability, performance, or appearance.

3.5 Packaging and Shipping:

Per Amphenol′s Company Operating Procedure #COP-15-1 and Packing Specification PKS-0001.

4.0 PERFORMANCE AND TEST DESCRIPTION

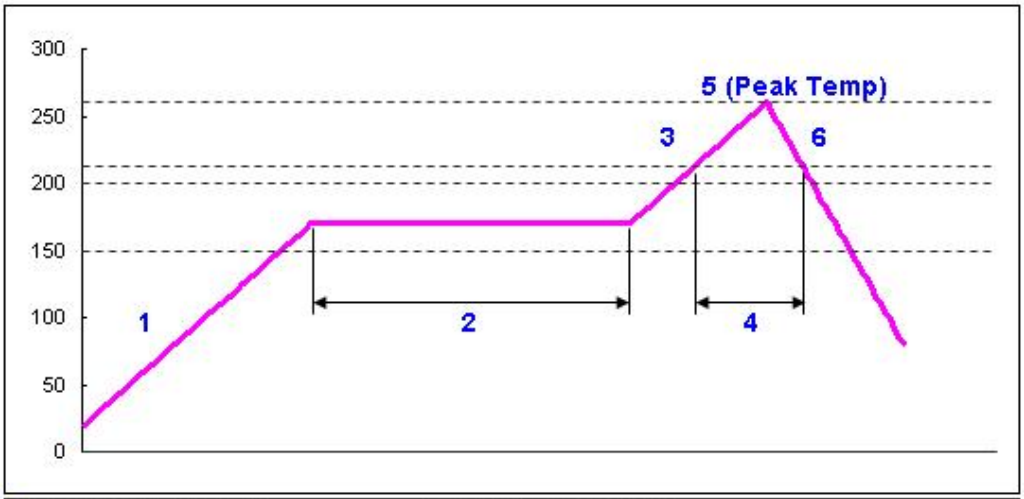
Product is designed to meet electrical, mechanical and environmental performance requirements specified in Table I. Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

Table I - Test Requirements and Procedures Summary

Test Description	Requirements	Procedure
• Examination of product	Meets requirements of product drawing. No physical damage.	**EIA 364-18** Visual, dimensional and functional compliance.
ELECTRICAL		
• Low Level Contact resistance	Initial: 20 mΩ maximum. Final: 30 mΩ maximum.	**EIA 364-23** Mating connector, apply a maximum voltage of 20 mV and current of 100mA.
• Insulation resistance	1000 MΩ minimum	**EIA 364-21** Mating connector, mounted to a PCB, apply a voltage of 500 VDC between terminals to ground.
• Dielectric withstanding voltage	No breakdown	**EIA 364-20** 1000VAC rms (0.5mA cutoff current) for 60 seconds duration between adjacent terminals and between terminals to ground.
MECHANICAL		
• Pin Retention	1.20 kgf (Min.) Before solder 0.90 kgf (Min.) After solder	**EIA 364-05** Measure the contact retention with tensile strength tester. Rate: 25±3 mm/minute
• Vibration, random	No discontinuities of 1 μs or longer duration. No physical damage.	Frequency: 50~2000 Hz / minute. PSD value : 3.13 Grms minimum Direction: Each of X, Y, Z-axis directions. Duration : 15 minutes/axis Times : Each of three mutually perpendicular planes.
• Mechanical shock	No discontinuities of 1 μs or longer duration. No physical damage.	**EIA 364-27 Condition H.** Subject mated connectors to 30G half-sine shock pulses of 11 ms duration. 3 shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks.

• Durability	Contact resistance: △R=10 mΩ maximum. No physical damage.	**EIA 364-09** Mate and unmate connector assemblies for 300 cycles at maximum rate of 12.7mm per minute.
ENVIRONMENTAL		
• Thermal shock	Contact resistance: △R=20 mΩ maximum. No physical damage. Voltage proof : 1000Vrms, 1 minute. Insulation resistance: 1000 MΩ minimum.	**EIA 364-32 Test Condition I.** Subject mated connectors to 5 cycles between -55°C and 85°C.
• Humidity	Contact resistance: △R=10 mΩ maximum. No physical damage. Voltage proof : 1000Vrms, 1 minute. Insulation resistance: 1000 MΩ minimum.	**EIA 364-31 Method III Test Condition A.** Subject mated connectors: Temperature: 25~65°C Relative humidity: 90-95% RH Duration time: 96 hours
• Temperature life	Contact resistance: △R=10 mΩ maximum. No physical damage.	**EIA 364-17 Test Condition 3 Method A.** Subject mated connectors to ambient temperature 85°C for 96 hours.
• Salt Spray	Contact resistance: △R=10 mΩ maximum. No exposure of the base metal due to corrosion.	**EIA 364-26** Subject test samples to a salt water spray having a concentration of 5% for 48 hours at a temperature of 35°C.Measure resistane before and after salt spray exposure
• Solderability	Solderable area shall have minimum of 95% solder coverage	**EIA-364-52** Dip solder tails into the molten solder (heat at 245±5°C) up to 1.0mm from the bottom of the housing for 5±0.5 seconds.
• Resistance to Solder Heat	No physical damage.	**EIA-364-29** Withstand Peak Temp.:260℃ Max., 5sec Max. (Refer to attached profile)

- Resistance to Soldering Heat: (refer to attached profile)
  Test condition: Peak temperature: 260+0 / -10 ℃
  Preheating temperature: 150 – 200 ℃



1	Average ramp rate	3°C per second max.
2	Pre-heat temp.(minimum)	150°C
	Pre-heat temp.(maximum)	200°C
	Pre-heat time	60 to 120 seconds
3	Ramp to peak	3°C per second max.
4	Time over liquidus(217°C)	60 to 150 seconds
5	Peak temp.	260 +0/-10°C
	Time within 5°C of peak	10 seconds max.
6	Ramp- cool down	6°C per second max.
	Time 25°C to peak	8 minutes max.

List of Appendix

□ Product Drawing

□ Qualification Test Report