

ORIGINAL

Title: Pin Header Connector Product Specification

Part Number: G800 / G801MB Series

Description: Pin Header 2.54 MM PITCH, Connector

Revisions Control

Rev.	ECN Number	Originator	Approval	Issue Date
A	NE-12143	Aqua Chou	Roger Tsai	08/15/2012
B	NE-17237	Aqua Chou	Roger Tsai	10/23/2017



Product Specification Origination

Originator:	Date:	Checked by:	Date:	Approved by:	Date:
Aqua Chou	10/23/2017	Karen Su	10/23/2017	Roger Tsai	10/23/2017

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1.0 GENERAL DESCRIPTION

This specification defines the detail requirements of the Pin Header connector, G800 series..

2.0 APPLICABLE DOCUMENTS

Underwriters' Laboratories, Inc.

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 94V-0 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: 3 Amps
- C) Operating Temperature: -25°C to +105°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 94V-0 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
<ul style="list-style-type: none"> Examination of product 	Meets requirements of product drawing. No physical damage.	EIA 364-18 Visual, dimensional and functional compliance.
ELECTRICAL		
<ul style="list-style-type: none"> 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.
<ul style="list-style-type: none"> Insulation resistance 	1000 MΩ minimum	EIA 364-21 Mating connector, mounted to a PCB, apply a voltage of 500 VDC between terminals to ground.
<ul style="list-style-type: none"> 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		
<ul style="list-style-type: none"> 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
<ul style="list-style-type: none"> Mating Force 	350 g Max. per pin	EIA 364-13 Measure the contact mating force with tensile strength tester. Rate: 25±3 mm/minute
<ul style="list-style-type: none"> Un-mating Force 	40 g Min. per pin	EIA 364-13 Measure the contact un-mating force with tensile strength tester. Rate: 25±3 mm/minute

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• Vibration, random	No discontinuities of 1 μ s 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 μ s 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: $\Delta R=10$ m Ω 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: $\Delta R=20$ m Ω maximum. No physical damage. Voltage proof : 1000Vrms, 1 minute. Insulation resistance: 1000 M Ω minimum.	EIA 364-32 Test Condition I. Subject mated connectors to 5 cycles between -55°C and 85°C.
• Humidity	Contact resistance: $\Delta R=10$ m Ω maximum. No physical damage. Voltage proof : 1000Vrms, 1 minute. Insulation resistance: 1000 M Ω 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
• Salt Spray	Contact resistance: $\Delta R=10$ m Ω 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 resistance 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 \pm 5°C) up to 1.0mm from the bottom of the housing for 5 \pm 0.5 seconds.

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• Resistance to Solder Heat	No physical damage.	EIA-364-29 Withstand Peak Temp.:260°C Max., 5sec Max.
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List of Appendix

- Product Drawing
- Qualification Test Report