

PRODUCT SPECIFICATION

PS-7460

Rev. **A**

ORIGINAL

Title: Mini SAS HD Integrated Connector Product Specification

Part Number: G40H series

Mini SAS HD Integrated Connector,

Description: 0.75 Pitch, Press-Fit Type

Revisions Control

Rev.	ECN Number	Originator	Approval	Issue Date
A	NE-13131	Hank Hsu		08.12.2013



Product Specification Origination

Originator:	Date:	Checked by:	Date:	Approved by:	Date:
Hank Hsu	20130812	Sondra Sang	20130812	Hank Hsu	20130812

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1. Scope

This document defines the detailed requirements for the Amphenol G40H Series Mini SAS HD integrated connector to insure functionality and reliability.

2. Applicable documents

- 2.1 EIA-364 Standard Test methods for electrical connectors
- 2.2 UL-STD-94 Tests for flammability of plastic materials for parts in devices and appliances.
- 2.3 SFF-8643 SFF specification

3. Requirements**3.1 Design and construction**

Product shall be of the design, construction and physical dimensions specified on the applicable product drawing.

3.2 Material and finish

3.2.1 Housing

- High temperature thermoplastic, UL94V-0
- Color: Black

3.2.2 Contact

- Copper Alloy
- Contact area: Selected Gold plating
- EON tail: Matte Tin plating
- Under-plating: Nickel plating overall

3.2.4 Shell

- Stainless steel

3.3 Rating

- Current: 0.5 A per contact
- Voltage: 30 VDC per contact
- Temperature:
 - Operating: -40°C~ 85°C
 - Non-operating: -55°C~ 85°C
- Durability
 - 30u" Au: 250 cycles

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Test	Test procedure	Test criteria
Visual & Dimensional inspection	EIA-364-18 Visual, dimensional and functional inspection.	Must meet the minimum requirements specified by product drawing.
Electrical:		
Low level Contact Resistance	EIA-364-23 Current: 100 mA maximum Voltage: 20 mV maximum	Baseline
Dielectric Withstanding Voltage	EIA-364-20 Apply a voltage between adjacent terminals. Voltage: 300 VDC Duration: 1 minute	No defect or breakdown No disruptive discharge No leakage current in excess of 5mA
Temperature Rise (via current cycling)	EIA-364-70 Measure the temperature rise at the rated current after 96 hours. (45 minutes ON and 15 minutes OFF)	30°C maximum change from initial
Differential Impedance (connector area)	EIA-364-108 Rise time: 50ps (20-80%) Includes connector cable to connector interface and board termination pads and vias.	90-110 ohms (distribution) 100±5 ohms (distribution of average value)
Near End Isolation	EIA-364-90 50 MHz to 12.5 GHz	-40 dB minimum (Frequencies up to 6.25 GHz)
Insertion Loss	EIA-364-101 50 MHz to 12.5 GHz	1.0 dB maximum (Frequencies up to 6.25 GHz)
Mechanical:		

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Durability (preconditioning)	EIA-364-09 50 unmate/mate cycles No lubrication to be used during cycling. Cycling to be performed manually unless otherwise specified.	No evidence of physical damage.
Durability	EIA-364-09 Cycle rate: 500±50 per hour Number of cycles: 250 cycles	No evidence of physical damage.
Mating Force (Module only)	EIA-364-13 Rate: 25.4 mm/minute	50 N maximum
Un-mating Force (Module only)	EIA-364-13 Rate: 25.4 mm/minute	10 N maximum
Plug Mating Force (Active Latch)	EIA-364-13 Rate: 25.4 mm/minute	4X - 50 N maximum 8X - 100 N maximum
Plug Un-mating Force (Active Latch)	EIA-364-13 Rate: 25.4 mm/minute	4X - 30 N maximum 8X - 50 N maximum
Contact Normal Force	EIA-364-04 Rate: 25.4 mm/minute	0.49 N (50 grams) minimum
Vibration	EIA-364-28, Test Condition VII, Condition D Subject mated specimens to 3.10 G's rms between 20-500 Hz for 15 minutes in each of 3 mutually perpendicular planes.	No Damage No discontinuity longer than 1usec allowed. 10 mOhms maximum change from initial (baseline) contact resistance
Mechanical Shock	EIA-364-27, Test Condition H Subject mated specimens to 30 G's half-sine shock pulses of 11 milliseconds duration. 3 shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks.	No Damage 10 mOhms maximum change from initial (baseline) contact resistance
Reseating	Manually unmate/mate the connector 3 cycles.	No evidence of physical damage.
Environmental:		
Thermal Shock	EIA-364-32, Method A Test condition 1 -55 °C to 85 °C (10 cycles)	No Damage 10 mOhms maximum change from initial (baseline) contact resistance

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Humidity- Temperature Cycling	EIA-364-31, Method III Subject unmated specimens to 24 cycles between 25°C / 80%RH and 65°C / 50%RH Ramp times should be 0.5 hour and dwell times should be 1.0 hour	No Damage 10 mOhms maximum change from initial (baseline) contact resistance
Temperature Life (preconditioning)	EIA-364-17, Method A Subject mated specimens to 105°C for 336 hours	No Damage
Temperature Life	EIA-364-17, Method A Test Condition 2, Test Time Condition C Subject mated specimens to 105°C for 840 hours	No Damage 10 mOhms maximum change from initial (baseline) contact resistance

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4.2 Test Sequence

Test or Examination	Test Groups								
	1	2	3	7		A	B	C	D
Low Level Contact Resistance	1,4,6	1,4,6,8	1,4,6,8	2,4					
Dielectric Withstanding Voltage				1,5					
Temperature Rise						V			
Differential Impedance (connector area)									V
Near End Isolation									V
Insertion Loss									V
Durability (preconditioning)	2	2	2						
Durability				3					
Mating Force (Module only)							V		
Un-mating Force (Module only)							V		
Plug Mating Force (Active Latch)							V		
Plug Un-mating Force (Active Latch)							V		
Contact Normal Force								V	
Vibration			7						
Mechanical Shock			5						
Reseating	5	7							
Thermal Shock		3							
Humidity-Temperature Cycling		5							
Temperature life (preconditioning)			3						
Temperature life	3								

Note:

1. Test specimen: 5 PCS/ group unless otherwise specified.
2. Test specimen shall be sure to meet the drawing before the testing.
3. Test group A-D need to implement individual test.

List of Appendix

Product Drawing : G40H1XXXXHR

Qualification Test Report : 11-11-EAT-027-E00