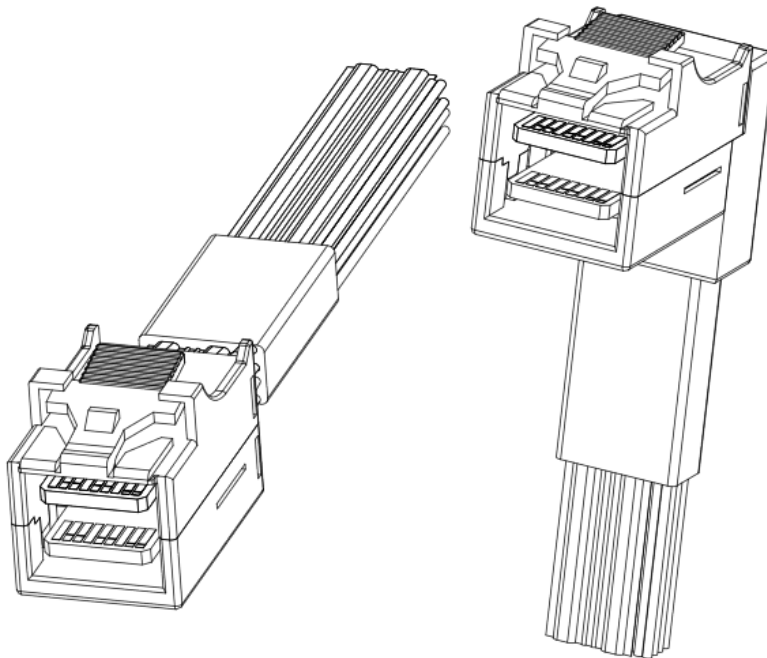


Product Specification

3M™ High Routability Internal MiniSAS HD Cable Assemblies (Shortened/Right-Angle Connectors)



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1. SCOPE

1.1. Content

This specification covers performance, tests and quality requirements for the 3M High Routability Internal HD MiniSAS Cable Assemblies (Shortened Connector).

2. REFERENCE DOCUMENTS

The following documents are referred to form a part of this specification. Unless otherwise specified, latest edition of the reference documents applies. In the event of conflict between requirements of the references and 3M specification, 3M specification shall take precedence.

2.1. Commercial standards, specifications and report

- 2.1.1. EIA-364
- 2.1.2. SAS 2.1 and SAS 3.0
- 2.1.3. SFF-8643

3. REQUIREMENTS

3.1. Design and Construction

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

3.2. Materials

3.2.1. Housing

Material : High Temperature Thermoplastic
Flammability : UL94V-0

3.2.2. Paddlecard

Material : FR4
Mating pad underplate : 1.27 μm (50 μm) Ni MIN
Mating pad finish : 0.76 μm (30 μm) Au MIN

3.2.3. High Speed Ribbon Twin Axial Cable

See related specification PS-0105 for ribbon 3M™ Twin Axial Ribbon Cable material information.

3.3. Ratings

- 3.3.1. Current rating: 0.5 A/contact
- 3.3.2. Operating temperature: 0°C to +80°C
- 3.3.3. Non-Operating temperature: -20°C to +85°C
- 3.3.4. Humidity: 80% RH Maximum

3.4. Performance and Test Description

Product is designed to meet electrical, mechanical and environmental performance requirements specified in section 3.5. All tests are performed at ambient environmental conditions per EIA-364 unless otherwise specified.

3.5. Test Requirements and Procedures Summary

Test Description	Test Condition	Requirement
Visual examination	Inspection of product for abnormality/defects.	No visual defects
Critical dimension measurement	Measure dimensions specified in applicable product drawing.	Product shall meet requirements of applicable product drawing.
ELECTRICAL		
Low level contact resistance (LLCR)	EIA-364-23 Subject a voltage of 20 mV max open circuit at a current of 10 mA max on mated connector assemblies.	Baseline
Dielectric withstanding voltage	EIA-364-20, Method B Subject a voltage of 300 VDC for 1 minute at sea level between adjacent contacts of mated and unmated connector assemblies.	No defect or breakdown between adjacent contacts.
Insulation resistance	EIA-364-21 Subject a voltage of 100 VDC for 1 minute between adjacent contacts of mated and unmated connector assemblies.	1000 MΩ minimum between adjacent contacts.

MECHANICAL		
Mating force	EIA-364-13	100 N Maximum
Unmating force	EIA 364-13	50 N Maximum
Mechanical shock	EIA-364-27	No damage. 20 mΩ maximum change from initial (baseline) contact resistance.
Durability (preconditioning)	EIA-364-09 Perform 50 unplug/plug cycles.	No evidence of physical damage.
Durability	EIA-364-09 Perform 250 unplug/plug cycles.	No evidence of physical damage.
Reseating	Perform 3 unplug/plug cycles.	20 mΩ maximum change from initial (baseline) contact resistance.

ENVIRONMENTAL		
Temperature life	EIA-364-17, Method A 105°C for 240 hours	20 mΩ maximum change from initial (baseline) contact resistance.
Cyclic temperature & humidity	EIA-364-31, Method III 24 cycles. 1 cycle - 25°C, 80%RH to 65°C, 50RH to 25°C 80%. Ramp time – 0.5 hour Dwell time – 1.0 hour.	20 mΩ maximum change from initial (baseline) contact resistance.
Thermal shock	EIA-364-32, Method A, Test Condition I -55°C to +85°C, 10 cycles, 1/2 hour at each temperature extreme.	20 mΩ maximum change from initial (baseline) contact resistance.
Vibration	EIA-364-28, Test Condition VII, Test condition letter D 3.10G RMS between 20 and 500 Hz at 15 minutes in each of 3 mutually perpendicular directions.	No damage. No discontinuity longer than 1μsec allowed. 20 mΩ maximum change from initial (baseline) contact resistance.

3.6. Test Groups and Sequences Summary

TEST DESCRIPTION	TEST GROUP			
	1	2	3	4
Visual examination	1, 10	1, 12	1, 10	1, 9
Low level contact resistance (LLCR)	2, 7, 9	2, 7, 9, 11	2, 7, 9	3, 7
Dielectric withstanding voltage				2, 8
Insulation resistance				
Mating force	3	3	3	4
Unmating force	5	5	5	6
Vibration				
Durability (preconditioning)	4	4	4	
Durability				5
Reseating	8	10		
Temperature life	6		6	
Cyclic temperature and humidity		8		
Thermal shock		6		
Vibration			8	

Unless otherwise noted, references to industry specifications are intended to indicate substantial compliance to the material elements of the specification. Such references should not be construed as a guarantee of compliance to all requirements in a given specification.

Halogen-free is defined as both (1) no halogen compounds are intentionally added to the product or used in the manufacturing process for the product, and (2) any impurities present are less than 900 ppm bromine, less than 900 ppm chlorine, and/or less than 1500 ppm total bromine and chlorine. The latter are the levels set forth in certain industry standards for printed circuit boards, such as the International Electrotechnical Commission (IEC) 61249-2-21 standard.

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