



PRODUCT SPECIFICATION

SERIAL ATTACH SCSI RECEPTACLE

1.0 SCOPE

This Product Specification covers the performance requirements of the Serial Attach SCSI / High Speed Serialized host receptacle connector.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S)

Product Name

Part Number

Serial Attach SCSI Receptacle (Reverse)
Right-Angle SMT 4.99mm Height

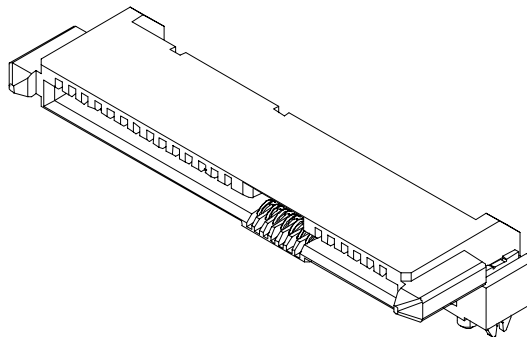
78053-0001
78053-1001

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See Sales Drawing SD-78053-001 for information on dimensions, materials, platings and markings.

2.3 SAFETY AGENCY APPROVALS

UL FILE : E29179
CSA : LR19980



3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See the Sales Drawing and other sections of this Specification for the necessary referenced Documents and Specifications.

Small Form Factor Specification SFF-8482

TENTATIVE RELEASE :

THIS SPECIFICATION IS BASED ON DESIGN OBJECTIVES AND IS STRICTLY TENTATIVE. PRELIMINARY TEST DATA MAY EXIST, BUT THIS SPECIFICATION IS SUBJECTED TO CHANGE BASED ON THE RESULTS OF ADDITIONAL TESTING AND EVALUATION.

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4.0 RATINGS

4.1 VOLTAGE

30 Volts Max.

4.2 CURRENT

1.5 A per pin

4.3 TEMPERATURE

Operating: 0°C to + 55°C

Non-Operating: -40°C to + 85°C

4.4 HUMIDITY

20% - 80%

4.5 PRESSURE

650 mm – 800 mm Hg

5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	Low Level Contact Resistance (LLCR)	Subject mated connectors to a maximum voltage of 20 mV and current of 100 mA. (EIA 364-23)	45 mΩ MAXIMUM [initial] Delta Change 15 mΩ MAXIMUM [from initial]
2	Temperature Rise (via current cycling) Power Section only (P1 thru P15)	Mount connector to a test PCB with ½ oz copper layer. Wire power pins P1, P2, P8 and P9 in parallel for power. Wire ground pins P4, P5, P6, P10 and P12 in parallel for return. Supply 6A total DC current to the power pins in parallel, returning from the ground pins. Measure and record the temperature after 96 hours (45 minutes ON and 15 minutes OFF per hour) Ambient condition : Still air @ 25°C	1.5 A per pin MINIMUM Temperature Rise : 30°C MAXIMUM At any point in the connector when contacts are powered.
3	Dielectric Withstanding Voltage	Subject a voltage of 500 VAC for 1 minute between adjacent terminals of mated and unmated connector at sea level. (EIA 364-20 Method B)	No breakdown

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4	Insulation Resistance	After 500 VDC for 1 minute , measure the insulation resistance between adjacent terminals of the mated and unmated connector assemblies. (EIA 364-21)	1000 MΩ MINIMUM
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5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	Connector Insertion and Removal Forces	Mate and Unmate connectors at a rate of 25 mm per minute . (EIA 364-13)	25 N MAXIMUM insertion force 5 N for Backplane Receptacle MINIMUM removal force <i>(At Initial and After Durability)</i>
6	Durability	Mate and Unmate connectors at a rate maximum rate of 200 cycles/hour . Backplane Receptacle : 500 cycles (EIA 364-13)	No physical damage Delta Change 15 mΩ MAXIMUM <i>[from initial]</i> Meet requirements of additional tests as specified in the test sequence in Section 7.0
7	Resistance to Soldering Heat	Refer to Section 9.0 for soldering profile	No damage in appearance of connector
8	Terminal Retention Force	Apply axial pull out force on terminal in the housing at a rate of 25 mm per minute .	4.45 N (Port 1 / ForkLock) 2.20 N (Port 2) MINIMUM retention force

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9	Physical Shock	Subject mated connector to 50 g's half-sine shock pulses of 11 msec duration. Three shocks in each direction applied along three mutually perpendicular planes for a total of 18 shocks. (EIA 364-27 Condition A)	No physical damage Delta Change 15 mΩ MAXIMUM <i>[from initial]</i> No discontinuities of 1 μs or longer duration
10	Random Vibration	Subject mated connector to 4.90 g's RMS. 30 minutes in each of the 3 mutually perpendicular planes. (EIA 364-28 Condition VII Test letter E)	No discontinuities of 1 μs or longer duration Delta Change 15 mΩ MAXIMUM <i>[from initial]</i>

5.3 ENVIROMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
11	Solderability	Solder Time : 5 ± 0.5 seconds Solder Temperature : 260 ± 5°C	95% MIN Solder coverage
12	Humidity	Subject the connector to temperature and humidity of 40°C with 90% to 95% RH for 96 hours. (EIA 364-31 Method II Test Condition A)	No Physical damage Delta Change 15 mΩ MAXIMUM <i>[from initial]</i> Meet requirements of additional tests as specified in the test sequence in Section 7.0
13	Temperature Life	Subject mated connector to temperature life at +85°C for 500 hours. (EIA 364-17 Test Condition III Method A)	No Physical damage Delta Change 15 mΩ MAXIMUM <i>[from initial]</i> Meet requirements of additional tests as specified in the test sequence in Section 7.0

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14	Thermal Shock	Subject connector to 10 cycles between -55°C and +85°C . (EIA 364-32 Test Condition I)	No Physical damage Delta Change 15 mΩ MAXIMUM <i>[from initial]</i> Meet requirements of additional tests as specified in the test sequence in Section 7.0
15	Mixed Flowing Gas	One half of samples are exposed unmated (only receptacle) for 7 days and then mated for additional 7 days. The other half of samples mated for full 14 days test period. (EIA 364-65, Class 2A)	No Physical damage Delta Change 15 mΩ MAXIMUM <i>[from initial]</i> Meet requirements of additional tests as specified in the test sequence in Section 7.0

6.0 PACKAGING

Refer to Sales Drawing SD-78053-001 for packaging details.

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7.0 TEST SEQUENCES

Test Group √	A	B	C	D	E	F	G
Test or Examination ←							
Examination of the connector(s)	1,5	1	1,9	1,6	1,10	1,8	1
Low Level Contact Resistance (LLCR)	2, 4	2,5,7,9	2,4,6,8		2,5,7,9	2,5,7	
Insulation Resistance							3,6
Dielectric Withstanding Voltage							4,7
Temperature Rise				5			
Insertion Force							
Removal Force							
Durability	3	3 ^(a)	3 ^(a)	2 ^(a)	3 ^(a)	3 ^(a)	
Physical Shock		8					
Vibration		6					
Humidity					6		5
Temperature Life		4 ^(b)	5	3		4 ^(b)	
Reseating (manually unplug/plug three times)			7	4	8		
Thermal Shock					4		
Terminal Retention Force							
Resistance to Soldering Heat							2
Mixed Flowing Gas						6	
Solderability							

Note –

(a) Preconditioning, 50 cycles for the 500-durability cycles requirement. The insertion and removal cycle is at a maximum rate of 200 cycles per hour.

(b) Preconditioning, 105°C for 72 hours

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Test Group ∨	H	I	J
Test or Examination ⇐			
Examination of the connector(s)	1,5	1	
Low Level Contact Resistance (LLCR)			
Insulation Resistance			
Dielectric Withstanding Voltage			
Temperature Rise			
Insertion Force	2		
Removal Force	4		
Durability	3		
Physical Shock			
Vibration			
Humidity			
Temperature Life			
Reseating (manually unplug/plug three times)			
Thermal Shock			
Terminal Retention Force		2,4	
Resistance to Soldering Heat		3	
Mixed Flowing Gas			
Solderability			1
Note – (a) Preconditioning, 50 cycles for the 500-durability cycles requirement. The insertion and removal cycle is at a maximum rate of 200 cycles per hour. (b) Preconditioning, 105°C for 72 hours			

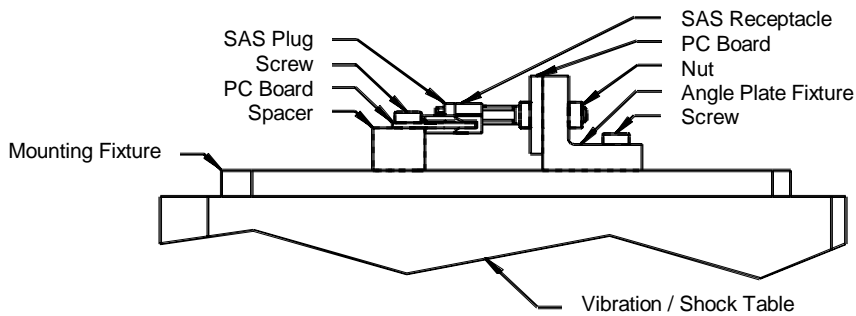
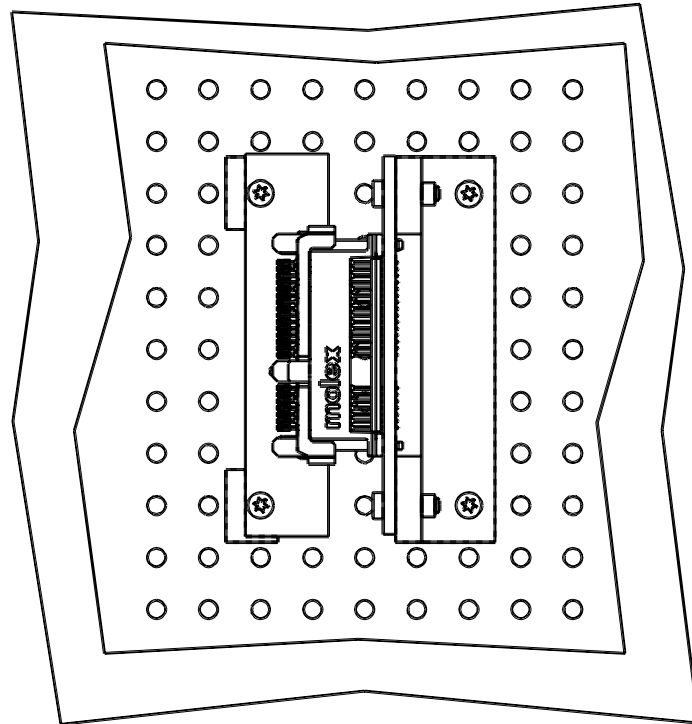
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8.0 VIBRATION/SHOCK TEST SET-UP

SAS Receptacle mated with SAS Plug (For Reference Only)

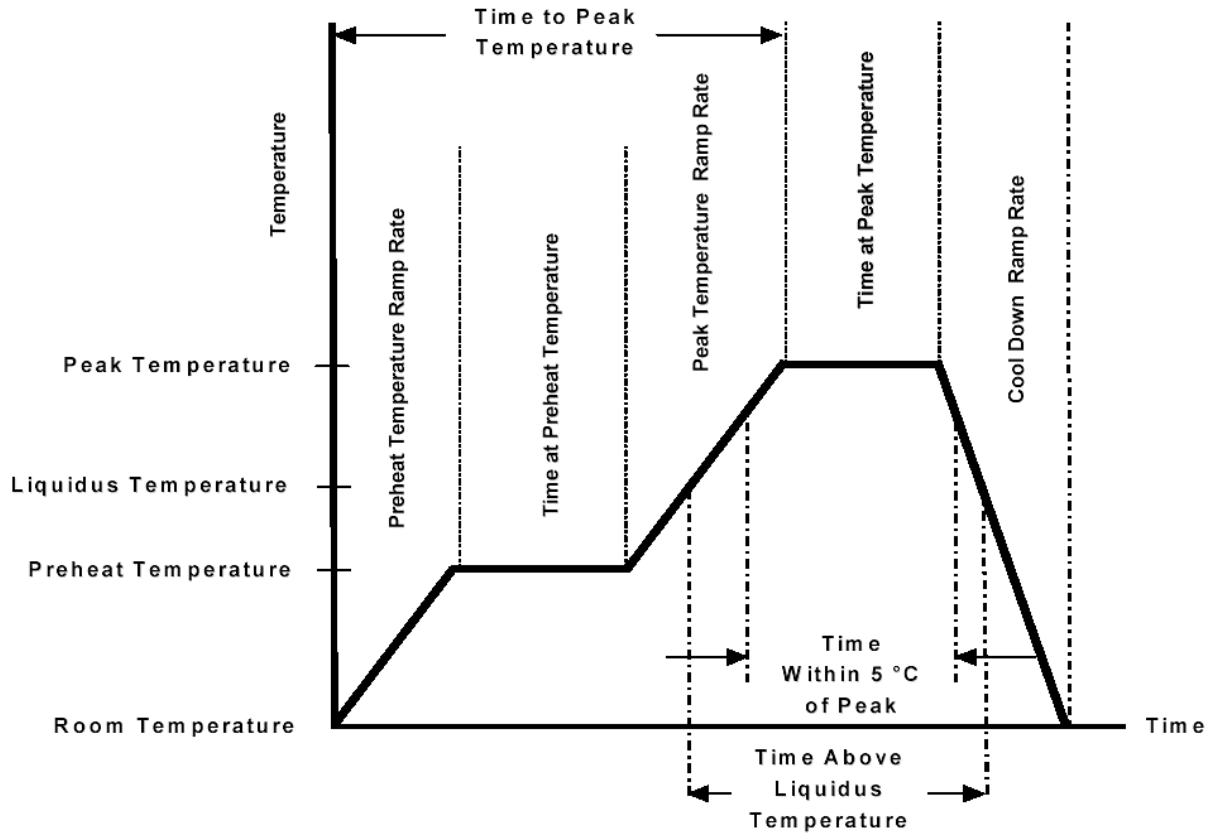


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9.0 SOLDERING PROFILE



Description	Requirement
Average Ramp Rate	3°C/sec Max
Preheat Temperature	150°C Min to 200°C Max
Preheat Time	60 to 180 sec
Ramp to Peak	3°C/sec Max
Time over Liquidus (217°C)	60 to 150 sec
Peak Temperature	260 +0/-5°C
Time within 5°C of Peak	20 to 40 sec
Ramp - Cool Down	6°C/sec Max
Time 25°C to Peak	8 min Max

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