



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

Series Number

SERIAL ATTACH SCSI, VERTICAL MOUNT, SMT

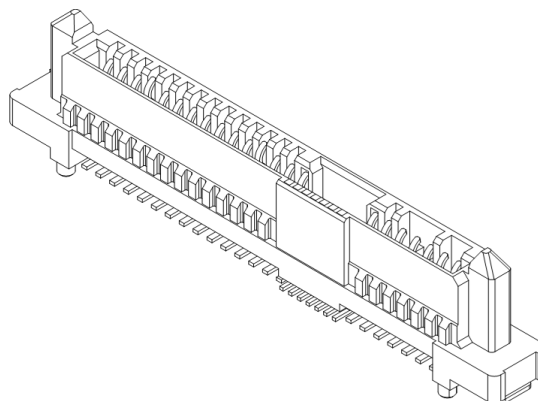
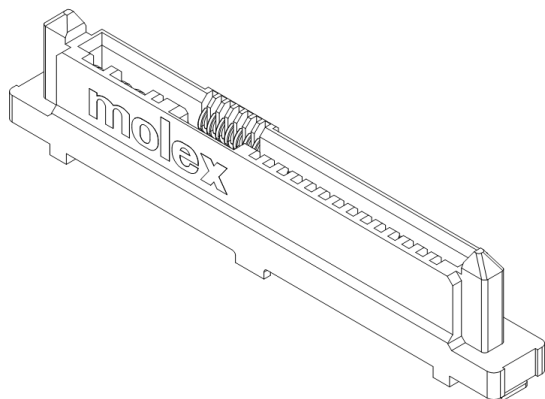
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2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See the appropriate Sales drawing for information on dimensions, materials, platings and markings.

2.3 SAFETY AGENCY APPROVALS

UL FILE : UL29179
CSA : 1422869 (LR19980)



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3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

The following documents form a part of this specification to the extent specified herewith. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In addition, in event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

Small Form Factor (SFF) Specification 8680

4.0 RATINGS

4.1 VOLTAGE

30 Volts Max.

4.2 CURRENT

Power section (per pin):

- Continuous Current 1.5A
- Peak Current 2.5A for 1.5s
- Peak Current Pre-Charge 6A for 1ms

Signal section (per pin)

- Continuous current 500mA

4.3 TEMPERATURE

Operating: 0°C to + 55°C

Non-Operating: -40°C to + 85°C

5.0 PERFORMANCE

5.1 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	Low Level Contact Resistance (LLCR)	Subject mated contacts assembled in housing to 20 mV maximum open circuit at 100 mA maximum. (EIA 364-23)	<p>30 mΩ MAXIMUM [Initial]</p> <p>15 mΩ MAXIMUM [Delta change from Initial]</p>

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2	Contact Current Rating (Power Segment)	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 parallel ground pins. Measure and record the temperature after 96 hours (45 minutes ON and 15 minutes OFF per hour)	1.5 A per pin MINIMUM Temperature rise shall not exceed 30°C at any point in the connector when contacts are powered Still Air at Ambient temperature 25°C
3	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 Megohms MINIMUM
4	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

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	Connector Mate and Unmate Forces	Mate and Unmate connector assemblies at a rate of 25.4 mm per minute. (EIA 364-13)	Insertion force - 25 N MAXIMUM Removal force - 5 N MINIMUM [Initial and after Durability]
6	Durability	500 cycles for Backplane Receptacle. All at a maximum rate of 200 cycles per hour. (EIA 364-09)	No Physical damage
7	Housing Slip Out Force	Apply axial pull out force on housing at a rate of 25.4 mm per minute.	60N Minimum Housing slip out force

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8	Physical Shock	<p>Subject mated connector to 50 g's half-sine shock pulses of 11 milliseconds duration. Three shocks in each direction applied along three mutually perpendicular planes for a total of 18 shocks. (EIA 364-27 Test Condition A)</p> <p>Test Set-Up per Section 8.0</p>	<p>No Physical damage</p> <p>No discontinuities of 1 μs or longer duration</p>
9	Random Vibration	<p>Subject mated connector to 4.90 g's RMS. 30 minutes in each of the three mutually perpendicular planes. (EIA 364-28 Test Condition VII Test letter E)</p> <p>Test Set-Up per Section 8.0</p>	<p>No discontinuities of 1 μs or longer duration</p>

5.3 ENVIROMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
10	Humidity	<p>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)</p>	No Physical damage
11	Solderability	<p>Unmated Connector. Steam age for 8 hours +/- 15 minutes. Solder Time: 3 ± 0.5 seconds Solder Temperature: 260 ± 5°C Flux type: ROL0 (JESD 22-B-102 Condition C)</p>	95% MINIMUM Solder coverage
12	Temperature Life	<p>Subject mated connector to temperature life at +85°C for 500 hours. (EIA 364-17 Method A Test Condition 3)</p>	No Physical damage
13	Thermal Shock	<p>Subject connector to 10 cycles between -55°C and +85°C. (EIA 364-32 Test Condition I)</p>	No Physical damage

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14	Mixed Flowing Gas	Subject connector to the following condition: SO ₂ gas concentration: 0.1 ppm. NO ₂ gas concentration: 0.2 ppm. H ₂ S gas concentration: 0.01 ppm. CL ₂ gas concentration: 0.01 ppm. Temperature: 30 ± 1 °C Relative Humidity: 70 ± 2 % Half of the samples are exposed unmated for 7 days, then mated for the remaining 7 days. The other half of the samples mated for full 14 days test period. (EIA 364-65, Class IIA)	No Physical damage
15	Resistance to Soldering Heat	Refer to Section 9.0 for Soldering profile.	Visual: No damage in appearance of connector.

6.0 PACKAGING

Parts shall be packaged to protect against damage during handling, transit and storage.

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7.0 TEST SEQUENCES

Test Group A to E are covered by SAS specification.

Test Group →	A	B	C	D	E	F	G
Test or Examination ↓							
Examination of the connector(s)	1, 5	1, 9	1, 8	1, 8	1, 7	1	
Low Level Contact Resistance (LLCR)	2, 4	3, 7	2,4,6		4, 6		
Insulation Resistance				2, 6			
Dielectric Withstanding Voltage				3, 7			
Current Rating (Temperature Rise)			7				
Mate Force		2					
Unmate Force		8					
Durability	3	4 ^(a)			2 ^(a)		
Physical Shock		6					
Vibration		5					
Humidity				5			
Temperature Life			3				
Reseating (manually unplug/plug three times)			5		5		
Thermal Shock				4			
Mixed Flowing Gas					3		
Resistance to Soldering Heat						2	
Housing Slip Out Force						3	
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.							

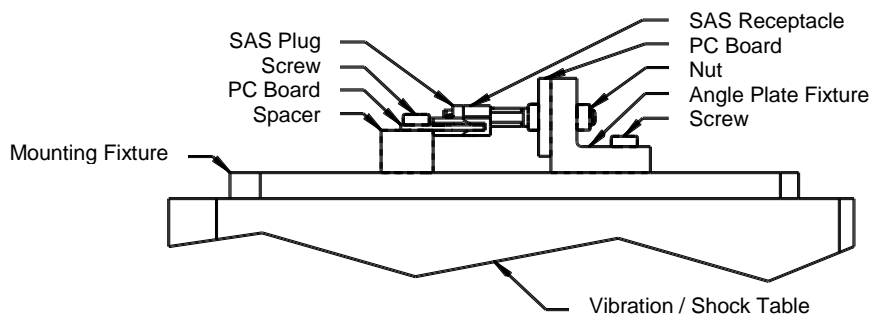
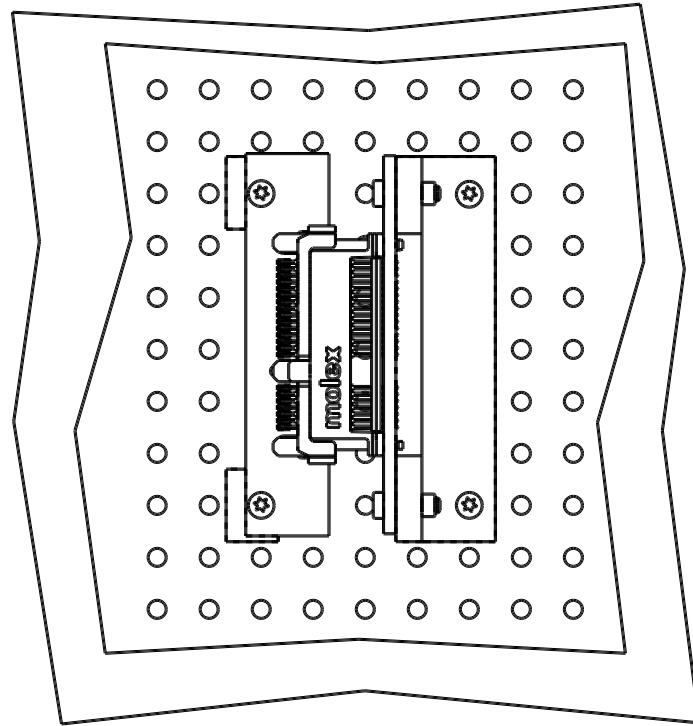
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8.0 VIBRATION/SHOCK TEST SET-UP

SAS Receptacle mated with SAS Plug (For Reference Only)

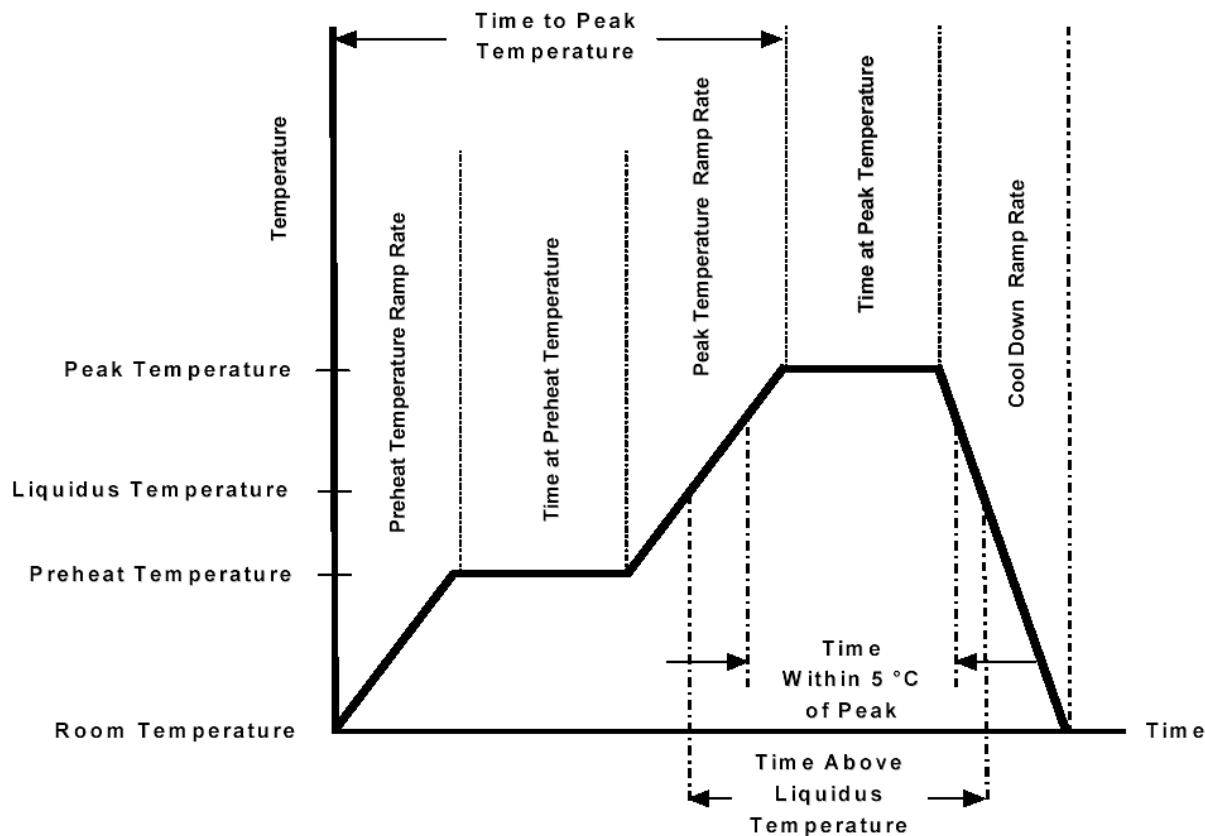


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9.0 SOLDERING PROFILE



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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