



# PRODUCT SPECIFICATION

## SERIAL ATTACH SCSI HOST 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 BACKPLANE, SMT, RECEPTACLE

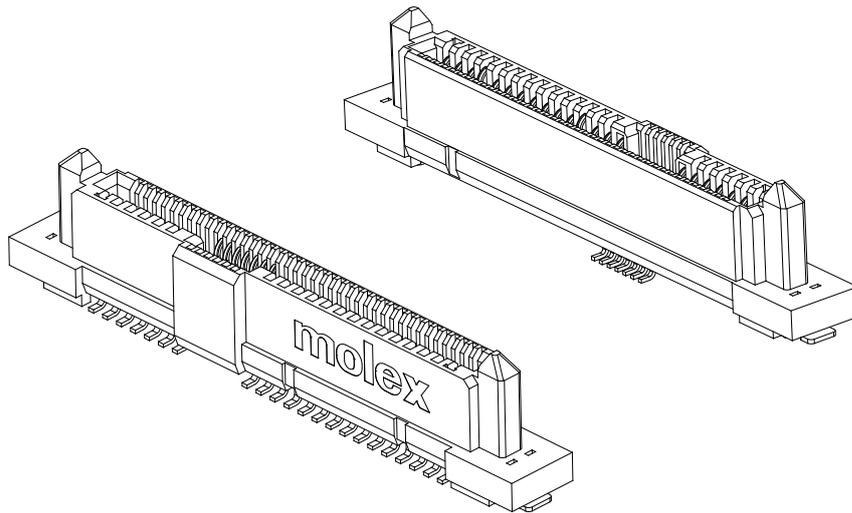
78728

#### 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 : E29179 VOL 10  
CSA : 1699307 (LR 19980)



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DOCUMENT NUMBER: <b>PS-78728-001</b>	CREATED / REVISED BY: <b>SKANG</b>	CHECKED BY: <b>CWANG25</b>	APPROVED BY: <b>SHONG</b>



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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 the event of conflict between the requirements of this specification and the reference documents, this specification shall take precedence.

## 4.0 RATINGS

### 4.1 VOLTAGE

30 Volts Max.

### 4.2 CURRENT

1.5 Amperes per pin.

### 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 connectors to a maximum voltage of 20 mV and a current of 100 mA. (EIA 364-23)	30 mΩ MAXIMUM [Initial]  15 mΩ MAXIMUM [Delta Change from Initial]
2	Temperature Rise (via current cycling) (Power Segment, 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 parallel ground pins. Measure and record 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

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<b>3</b>	<b>Insulation Resistance</b>	After <b>500 VDC</b> for <b>1</b> minute, measure the insulation resistance between adjacent terminals of the mated and unmated connector assemblies. (EIA 364-21)	<b>1000</b> Megohms MINIMUM
<b>4</b>	<b>Dielectric Withstanding Voltage</b>	Subject a voltage of <b>500 VAC</b> for <b>1</b> minute between adjacent terminals of mated and unmated connector at sea level. (EIA 364-20)	No breakdown

## 5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
<b>5</b>	<b>Connector Mate and Unmate Forces</b>	Mate and Unmate connector assemblies at a rate of <b>25</b> mm per minute. (EIA 364-13)	Mate force: <b>25 N</b> MAXIMUM  Unmate force: <b>5 N</b> MINIMUM for Backplane Receptacle  [Initial and After Durability]
<b>6</b>	<b>Durability</b>	<b>500</b> cycles for Backplane Receptacle. All at a maximum rate of <b>200</b> cycles per hour. (EIA 364-09)	No Physical damage  <b>15 mΩ</b> MAXIMUM [Delta Change from Initial]
<b>7</b>	<b>Housing Slip Out Force</b>	Apply axial pull out force on housing at a rate of <b>25.4</b> mm per minute.	<b>60 N</b> MINIMUM
<b>8</b>	<b>Physical Shock</b>	Subject mated connector to <b>50 g's</b> half-sine shock pulses of <b>11</b> msec duration. Three shocks in each direction applied along three mutually perpendicular planes for a total of <b>18</b> shocks. (EIA 364-27 Condition A)  Test Set-Up in Section 8.0	No Physical damage  <b>15 mΩ</b> MAXIMUM [Delta Change from Initial]  No discontinuities of <b>1 μs</b> or longer duration

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<b>9</b>	<b>Random Vibration</b>	<p>Subject mated connector to <b>4.90 g's</b> RMS. <b>30</b> minutes in each of the three mutually perpendicular planes. (EIA 364-28 Condition VII Test letter E)</p> <p>Test Set-Up in Section 8.0</p>	<p style="text-align: center;"><b>15 mΩ MAXIMUM</b> [Delta Change from Initial]</p> <p>No discontinuities of <b>1 μs</b> or longer duration [After Stress]</p>
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## 5.3 ENVIROMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
<b>10</b>	<b>Humidity</b>	<p>Subject the connector to temperature and humidity of <b>40°C</b> with <b>90%</b> to <b>95%</b> RH for <b>96</b> hours. (EIA 364-31 Method II Test Condition A)</p>	<p>No Physical damage</p> <p style="text-align: center;"><b>15 mΩ MAXIMUM</b> [Delta Change from Initial]</p>
<b>11</b>	<b>Solderability</b>	<p>Solder Time: <b>3 ± 0.5</b> seconds Solder Temperature: <b>260 ± 5°C</b></p>	<p>Dipped portion should have <b>95%</b> continuous new solder coating coverage</p>
<b>12</b>	<b>Resistance to Soldering Heat</b>	<p>Refer to Section 9.0 for soldering profile</p>	<p>No damage in appearance of connector</p>
<b>13</b>	<b>Temperature Life</b>	<p>Subject mated connector to temperature life at <b>+85°C</b> for <b>500</b> hours. (EIA 364-17 Method A Test Condition 3)</p>	<p>No Physical damage</p> <p style="text-align: center;"><b>15 mΩ MAXIMUM</b> [Delta Change from Initial]</p>
<b>14</b>	<b>Thermal Shock</b>	<p>Subject connector to <b>10</b> cycles between <b>-55°C</b> and <b>+85°C</b>. (EIA 364-32 Method A Test Condition I)</p>	<p>No Physical damage</p> <p style="text-align: center;"><b>15 mΩ MAXIMUM</b> [Delta Change from Initial]</p>
<b>15</b>	<b>Mixed Flowing Gas</b>	<p><b>1</b> half of samples are exposed unmated (receptacle only) for <b>7</b> days and then mated for additional <b>7</b> days. The other half of samples mated for full <b>14</b> days test period. (EIA 364-65 Class IIA)</p>	<p>No Physical damage</p> <p style="text-align: center;"><b>15 mΩ MAXIMUM</b> [Delta Change from Initial]</p>

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## 6.0 PACKAGING

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

## 7.0 TEST SEQUENCES

Test Group →	A	B	C	D	E	F	G
<b>Test or Examination ↓</b>							
Examination of the connector(s)	1, 5	1,10	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			
Mate Force							
Unmate Force							
Durability	3	3 <sup>(a)</sup>	3 <sup>(a)</sup>	2 <sup>(a)</sup>	3 <sup>(a)</sup>	3 <sup>(a)</sup>	
Physical Shock		8					
Vibration		6					
Humidity					6		5
Temperature Life		4 <sup>(b)</sup>	5	3		4 <sup>(b)</sup>	
Reseating (manually unplug/plug three times)			7	4	8		
Thermal Shock					4		
Housing Slip Out Force							
Resistance to Soldering Heat							2
Solderability							
Mixed Flowing Gas						6	
Note –							
(a) Preconditioning, 50 cycles for the 500-durability cycles requirement. The mate and unmate cycle is at a maximum rate of 200 cycles per hour.							
(b) Preconditioning, 105°C for 72 hours							

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## 7.0 TEST SEQUENCES (CONTINUED)

Test Group →	H	I	J
<b>Test or Examination ↓</b>			
Examination of the connector(s)	1,7		1
Low Level Contact Resistance (LLCR)			
Insulation Resistance			
Dielectric Withstanding Voltage			
Temperature Rise			
Insertion Force	2,5		
Removal Force	3,6		
Durability	4		
Physical Shock			
Vibration			
Humidity			
Temperature Life			
Reseating (manually unplug/plug three times)			
Thermal Shock			
Housing Slip Out Force			3
Resistance to Soldering Heat			2
Solderability		1	
Mixed Flowing Gas			

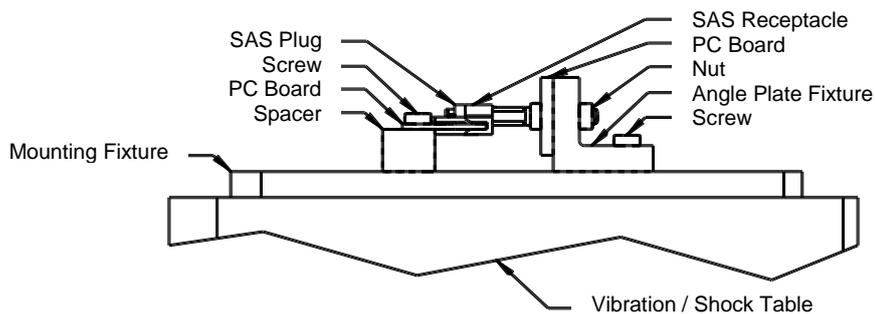
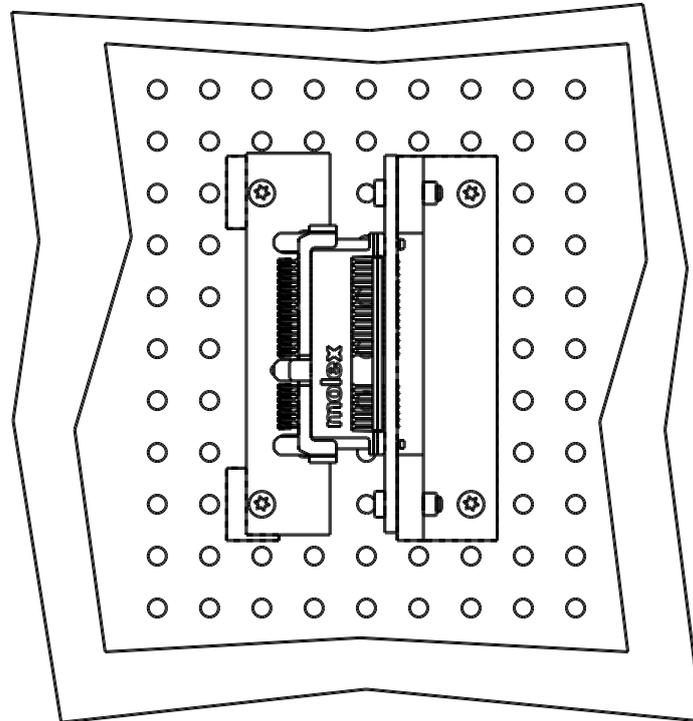
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## 8.0 VIBRATION/SHOCK TEST SET-UP

SAS Receptacle mated with SAS Plug (For Reference Only)

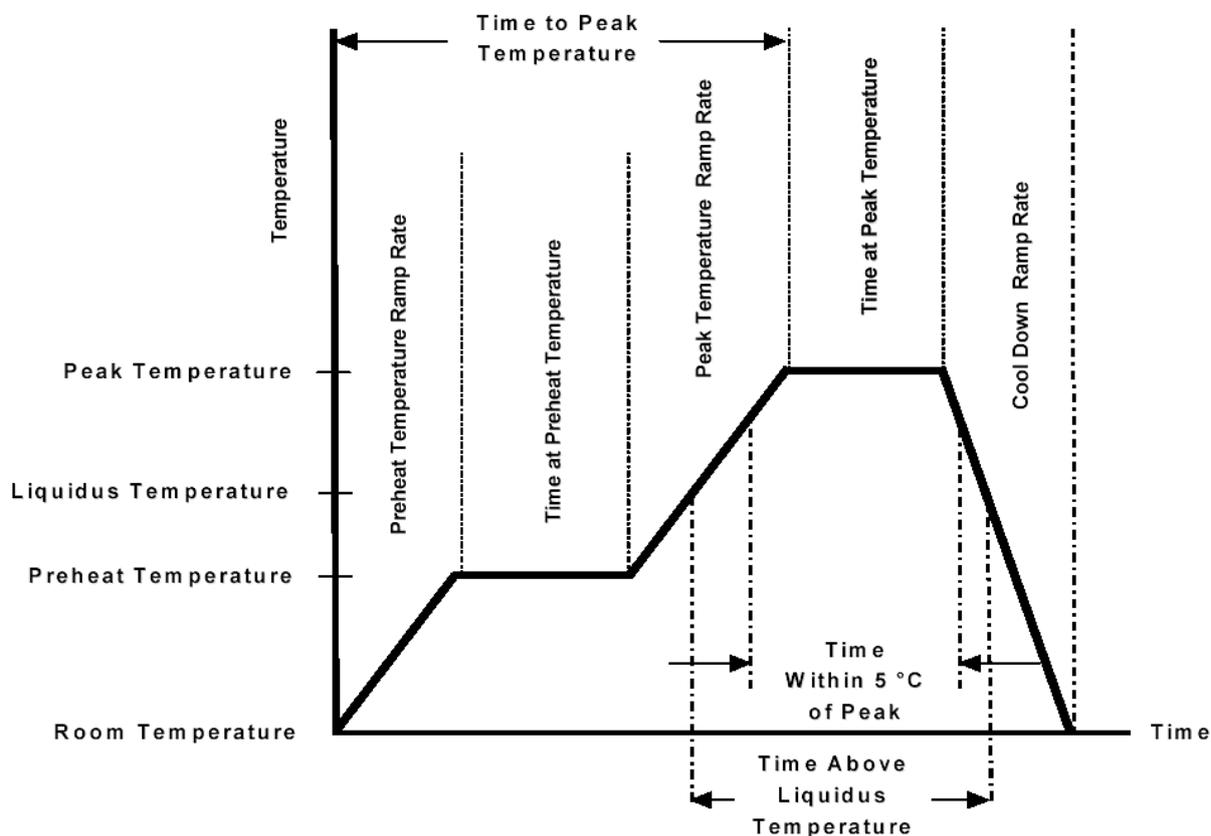


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## 9.0 SOLDERING PROFILE



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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