PRODUCT SPECIFICATION

SERIAL ATTACH SCSI HOST HYBRID RECEPTACLE

1.0 SCOPE

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

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S)

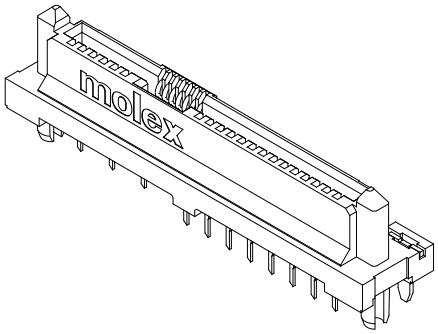
Product Name	Series Number
SERIAL ATTACH SCSI HYBRID RECEPTACLE	78716

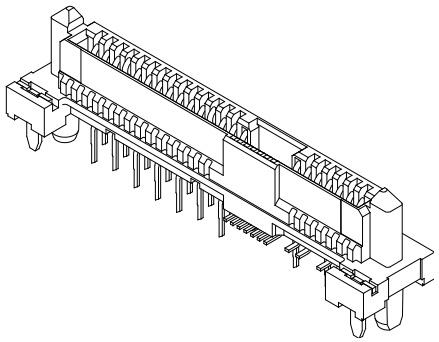
2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

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

2.3 SAFETY AGENCY APPROVALS

UL FILE : E29179, VOL. 10
CSA : 1422869 (LR 19980)





3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

The following documents form a part of this specification to the extend 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 1.5s
- Peak Current Pre-charge 6A 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 connectors to a maximum voltage of **20** mV and a current of **100** mA. (EIA 364-23)	**30** mΩ MAXIMUM [initial] Delta Change **15** mΩ MAXIMUM From Initial Value

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
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)	No breakdown

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
5	**Connector Insertion and Removal Forces**	Mate and Unmate connector assemblies at a rate of **25** mm per minute. (EIA 364-13)	MAXIMUM insertion force **25** N & MINIMUM removal force **5** N for Backplane Receptacle *[At Initial and After Durability]*
6	**Durability**	**500** cycles for Backplane Receptacle and **25** cycles for Cable Receptacle application. All at a maximum rate of **200** cycles per hour. (EIA 364)	No Physical damage Delta Change **15** mΩ MAXIMUM From Initial Value Meet requirements of additional tests as specified in the test sequence in Section 7.0

7	**Resistance to Soldering Heat**	Subject connector to **225**°C for **1** minute, **235**°C for **15** seconds and **260**°C for **10** seconds.	No damage in appearance of connector
8	**Housing Slip Out Force**	Apply axial pull out force on housing at a rate of **25.4** mm per minute.	**90N** Minimum Housing slip out force
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 From Initial Value 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 three mutually perpendicular planes. (EIA 364-28 Condition VII Test letter E)	Delta Change **15** mΩ MAXIMUM From Initial Value [after stress]No discontinuities of **1** μs or longer duration

5.3 ENVIROMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
11	**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 From Initial Value Meet requirements of additional tests as specified in the test sequence in
12	**Solderability**	Solder Time: **3** ± **0.5** seconds Solder Temperature: **260** ± **5**°C	Dipped portion should have 95% continuous new solder coating coverage

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 From Initial Value Meet requirements of additional tests as specified in the test sequence in Section 7.0
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 From Initial Value Meet requirements of additional tests as specified in the test sequence in Section 7.0
15	**Mixed Flowing Gas**	1 half of samples are exposed unmated (receptacle only) 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 From Initial Value Meet requirements of additional tests as specified in the test sequence in Section 7.

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
Test or Examination ↓							
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			
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		
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 insertion and removal cycle is at a maximum rate of 200 cycles per hour.

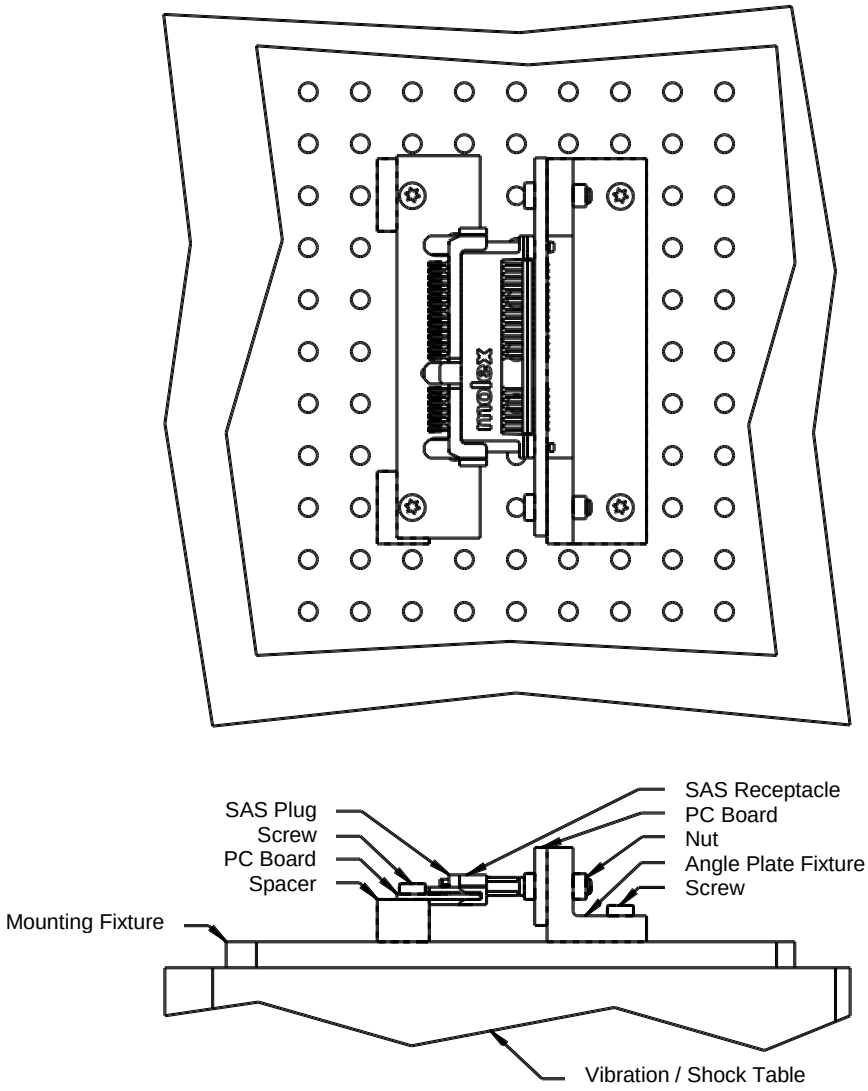
(b) Preconditioning, 105°C for 72 hours

7.0 TEST SEQUENCES (CONTINUED)

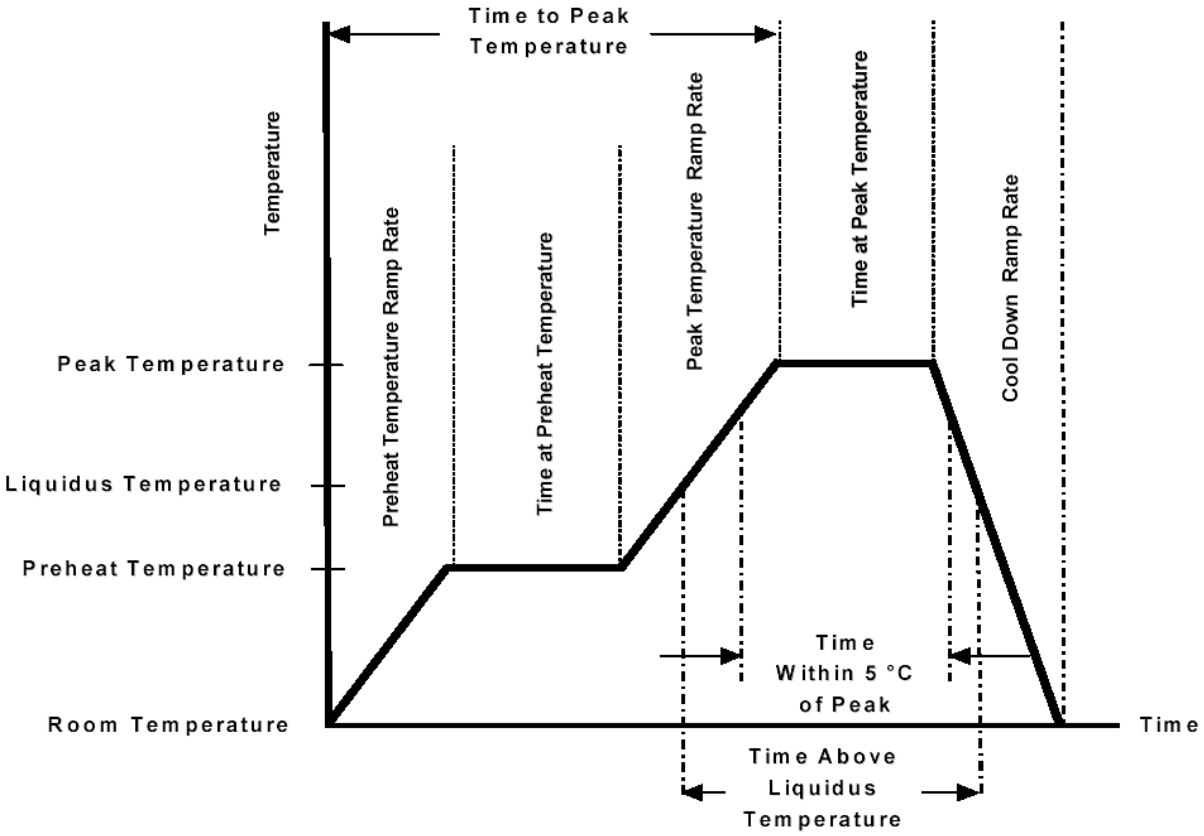
Test Group →	H	I	J
Test or Examination ↓			
Examination of the connector(s)	1,7		1
Low Level Contact Resistance (LLCR)			
Insulation Resistance			
Dielectric Withstanding Voltage			
Temperature Rise			
Insertion Force	2,5		
Removal Force	3,6		
Durability	4		
Physical Shock			
Vibration			
Humidity			
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			

8.0 VIBRATION/SHOCK TEST SET-UP

SAS Receptacle mated with SAS Plug *(For Reference Only)*



9.0 REFLOW 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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