PRODUCT SPECIFICATION

TITLE:	
	SLIMLINE SATA RECEPTACLE CONNECTOR

SLIMLINE SATA RECEPTACLE CONNECTOR

1.0 SCOPE

This Product Specification covers the dip type for 13pins slimline SATA receptacle connector.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME AND SERIES NUMBER(S)

PART NAME	SERIES NUMBER
SLIMLINE SATA RECEPTACLE RA DIP	**48321** series
SLIMLINE SATA RECEPTACLE REVERSE RA DIP	**48325** series
SLIMLINE SATA RECEPTACLE REVERSE SMT	**48330** series
SLIMLINE SATA RECEPTACLE REVERSE SMT	**48336** series

2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See sales drawing **SD-48321-001 & SD-48325-001 & SD-48330-001& SD-48336-001**

3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

Series ATA specification
EIA-364

4.0 RATINGS

4.1 VOLTAGE

15 Volts RMS at sea level

4.2 CURRENT

1.0 Amps RMS, 2.3 Amps peak

4.3 TEMPERATURE

Operating Temperature Range: - 40°C to + 85°C
Storage Temperature Range: - 40°C to + 100°C

5.0 PERFORMANCE

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	**Examination of Product**	Meets requirements of product drawing. No physical damage.	specimens shall be investigated by 10x (or higher)microscope.
5.1 ELECTRICAL REQUIREMENTS			
2	**Contact Resistance (Low Level)**	Subject mated contacts assembled in housing to 20mV maximum open circuit at 100mA maximum. PER EIA 364-23	30 milliohms Max (initial) △R: 15 milliohms Max (change from initial)
3	**Insulation Resistance**	After 500 VDC for 1 minute, measure the insulation resistance between the adjacent contacts of mated and unmated connector assemblies. PER EIA 364-21	**1000**Megohms MIN
4	**Dielectric Withstanding Voltage**	Test between adjacent contacts of mated and unmated connector. PER EIA 364-20 Test Condition B	The dielectric shall withstand 500VAC for 1minute at sea level
5	**Temperature Rise**	Apply the rated current 1.5A per pin of connector. PER EIA 364-70	Temperature rise: **+30**°C maximum

5.2 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
6.	**Durability**	50 cycles for internal cabled application; 500 cycles for backplane/blind mate Application. Test done at a maximum rate Of 200 cycles per hour. PER EIA 364-09. Preconditioning 50 cycles for 500 durability cycle requirement.	No physical damage △R: 15 milliohms Max (change from initial)
7.	**Insertion Force**	Measure the force necessary to mate the Connector assemblies at a max. rate of 12.5mm per minute. PER EIA 364-13	**20 N** MAX
8.	**Extraction Force**	Measure the force necessary to unmated the Connector assemblies at a max. rate of 12.5mm per minute. PER EIA 364-13	**2.5 N Min. after 500cycles**
9.	**Terminal Retention Force (in Housing)**	Axial pullout force on the terminal and nail in the housing at a rate of **25 ± 3** mm per minute. PER EIA 364-29	**3 N** Minimum retention force

10.	**Physical Shock**	Subject mated connectors to 30 g's half-Sine shock pulses of 11 ms duration. Three shocks in each direction applied Along three mutually perpendicular Planes for a total of 18 shocks. PER EIA 364-27 Condition H	△R: 15 milliohms Max (change from initial) & Appearance: no damage

5.3 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
11.	**Shock (Thermal)**	Mate connectors; expose to **10** cycles of: Temperature °C — Duration (Minutes) **-55 +0/-3** — **30** **+25 ±10** — **5** MAXIMUM **+85 +3/-0** — **30** **+25 ±10** — **5** MAXIMUM PER EIA 364-32 Condition I	△R: 15 milliohms Max (change from initial) & Appearance: no damage
12.	**Vibration (Random)**	Mate connectors up to **10~55** HZ,**3** mutually perpendicular planes,**1** minute per plane (Random) PER EIA 364-28; Condition V Test Letter A	△R: 15 milliohms Max (change from initial) & Discontinuity < **1** microsecond
13.	**Static Humidity**	Expose to a temperature of **40 ± 2°**C with a relative humidity of **90-95**% for **96** hours. Note: Remove surface moisture and air dry for **1** hour prior to measurements. PER EIA 364-31 Method II Condition A	△R: 15 milliohms Max (change from initial) & Appearance: no damage
14.	**Solder ability**	Dip solder tails into the molten solder(held at **245±5°**C for 5 **±**1 sec. PER EIA 364-52	Solder coverage: **95**% MINIMUM
15.	**Salt Spray**	Duration: **48** hours exposure; Atmosphere: salt spray from a **5**% solution; Temperature: **35 +1/-2°**C PER EIA 364-26	△R: 15 milliohms Max (change from initial) & Appearance: no damage
16.	**Temperature Life**	85°C for 500 hours PER EIA 364-17 Condition III Method A	△R: 15 milliohms Max (change from initial)& Appearance: no damage
17.	**Mixed Flowing Gas**	EIA 364-65,Class 2A Half of the samples are exposed unmated for seven days, then mated for remaining seven days. Other samples are mated during entire testing. (Only apply to 30 micro-inch gold plating)	△R: 15 milliohms Max (change from initial) & Appearance: no damage
18.	**Heat Resistance Test**	Place connector o applicable P.C.B footprint and float on solder bath at **260+0/-5°C** for required seconds.(See Fig 1) PER EIA 364-56	Visual: No Damage to insulator material
19	**Retention to PCB (only 48336 series)**	Apply force from un-mating direction At a rate of **25** mm per minute PER EIA 364-29	12kgf min

6.0 PACKAGING

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

7.0 RECOMMENDED REFLOW PROFILE

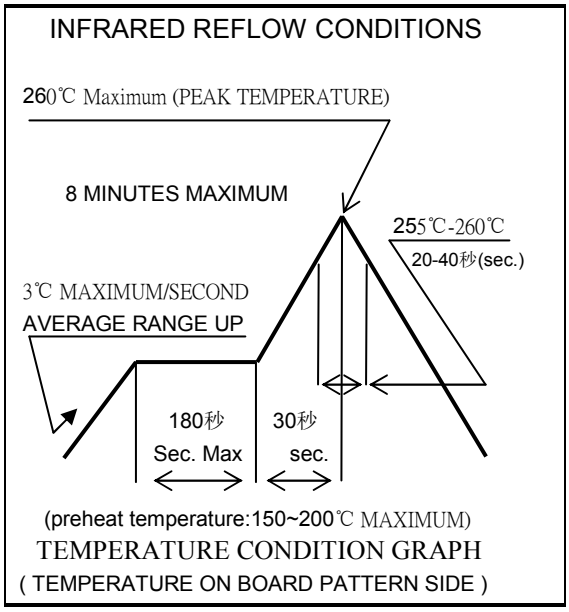

Fig 1

8.0 TEST GROUPINGS

ITEM	DESCRIPTION	A	B	C	D	E	F	G	H	I
1	Examination of product	1,6	1,9	1,8	1,8	1,7	1,9			
2	Contact Resistance (LLCR)	2,5	3,7	2,4,6		4,6	2,8			
3	Insulation Resistance				2,6		3,7			
4	Dielectric Withstanding Voltage				3,7		4,6			
5	Temperature Rise			7						
6	Durability	4	4*			2*				
7	Insertion Force		2							
8	Extraction Force		8							
9	Retention force							★		
10	Physical Shock		6							
11	Shock (Thermal)				4					
12	Vibration		5							
13	Static Humidity				5					
14	Solder ability								★	
15	Salt Spray						5			
16	Temperature Life			3						
17	manually unplug / plug three times			5		5				
18	Mixed Flowing Gas					3				
19	Heat Resistance Test	3								
20	Retention to PCB (only 48336 series)									★
	Sample Size (pcs)	5	5	5	5	5	5	5	5	5

Note :
1. (*) Durability Preconditioning 50 cycles for 500 durability cycle requirement . The insertion and removal cycle is at the maximum rate of 200 cycles per hour.
2. Group E be applied to 30 micro-inch plating products only