PRODUCT SPECIFICATION

HDMI Receptacle Connector (Vertical Type)

REVISION:	ECR/ECN INFORMATION:	TITLE:	SHEET No.
A	EC No: **SH2009-0223** DATE: **2008 / 05 / 09**	HDMI Receptacle Connector Vertical Type	**1** of **8**

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PRODUCT SPECIFICATION

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1.0 SCOPE

This specification covers performance, tests and quality requirements for HDMI Connectors.
All products shall meet HDMI Standard.

PRODUCT NAME AND PART NUMBER

Product Name	Series Number
HDMI Vertical Connector Series	48307

2.0 APPLICABLE DOCUMENT

The following documents form a part of this specification to the extent specified herein. In the event of conflict between the requirements of this specification and the product drawing, the product drawing shall take precedence. In the event of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.
EIA-364
IEC-801
High-Definition Multimedia Interface Standard

3.0 REQUIREMENTS

See The Appropriate Sales Drawings **SD-48307-***. For Information on Dimensions, Materials, Plating and Markings.

4.0 RATINGS

4.1 VOLTAGE

Voltage Rating : 40 V(AC)

4.2 CURRENT

Current Rating : 0.5 A

4.3 TEMPERATURE

Operating: -20°C to +85°C (Humidity range 85%RH MAX.)

※ Including terminal temperature rise.

4.4 TEST CONDITION

The test and measurement, unless otherwise specified, shall be carryout at a temperature of 15^0C to 35^0C, Relative humidity of 25% to 85%, and atmospheric pressure of 86 to 106kPa. However, when any doubt arises on the judgment value under it, the test and measurement shall be carry out at a temperature of 20^0C±2^0C, relative humidity of 60~70%± 2%, and atmospheric pressure of 86 to 106kPa.

5.0 CONNECTOR REQUIREMENTS

5.1 TEST REQUIREMENTS AND PROCEDURES SUMMARY

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT
1	Examination of Product	Visual inspection	Meets requirements of product drawing. No physical damage.

5.2 ELECTRICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT	
2	Contact & Shell Resistance (LLCR)	Mated connectors, Contact: measure by dry circuit, 20 m Volts Max.. 10mA Shell: measured by open circuit, 5 Volts Max.. 100mA (EIA-364-06)	LLCR	For Contact Initial: 30 milliohm MAX. After test: □R: 30 milliohm MAX. For Shell Initial: 50 milliohm MAX. After test: □R: 50 milliohm MAX.
3	Insulation Resistance	Unmated connectors, apply 500 Volts DC between adjacent terminal or ground. Mated connectors, apply 150 Volts DC between adjacent terminal or ground. (EIA 364-21)	Unmated Connectors: 100 megaohms Min. Mated Connectors: 10 megaohms Min.	
4	Dielectric Withstanding Voltage	Unmated connectors, apply 500 Volts AC (rms.) between Adjacent terminal or ground. Mated connector, apply 300 Volts AC (rms.) between adjacent terminal and ground. (EIA 364-20)	At sea level for 1 minute. No discharge, flashover or breakdown. Current leakage: 2 mA Max.	
5	Contact Current Rating	0.5 A Max. 55 °C, Max. ambient (EIA-364-70A)	Temperature Rise	85 °C, Max. temperature change □T: 30°C Max.
6	TMDS Signals Time Domain Impedance	Rise time : 200 psec Max. (10%-90%) Signal to Ground pin ratio per HDMI designation. Differential Measurement Specimen Environment Impedance = 100 ohms differential. Source-side receptacle connector mounted on a Controlled impedance PCB fixture. EIA-364-108	100 ohms±15%	

7	TMDS Signals Time Domain Cross Talk FEXT	Rise time : 200 psec Max. (10%-90%) Signal to Ground pin ratio per HDMI designation. Differential Measurement Specimen Environment Impedance = 100 ohms differential. Source-side receptacle connector mounted on a Controlled impedance PCB fixture. Driven pair and victim pair. EIA-364-90	5% Max.

5.3 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT	
8	Insertion/ Withdrawal Force	Insertion and withdrawal speed : 25mm/minute. (EIA-364-13) (lubricant is accessorial in process)	Insertion Force	44.1N Max.
			Withdrawal Force	9.8N Min.(initial) 4.9N Min. (durability) 39.2N Max.
9	Durability	Measure contact and shell resistance after Following. Automatic cycling: 10,000 cycles at 100±50 cycles per hour	LLCR	For Contact □R: 30 milliohm MAX.
				For Shell □R: 50 milliohm MAX.
			Insertion / Withdrawal Force	Meet item 8 requirement
10	Vibration	Amplitude : 1.52mm P-P or 147m/s^2 {15G} Sweep time: 50-2000-50Hz in 20 minutes. Duration: 12 times in each (total of 36 Times) X, Y, Z axes. Electrical load : DC100mA current shall be Flowed during the test. (EIA-364-28)	Appearance	No Damage
			LLCR	For Contact □R: 30 milliohm MAX.
				For Shell □R: 50 milliohm MAX.
			Discontinuity	1 micro-sec Max.
11	Mechanical Shock	Pulse width: 11 m sec., Waveform : half sine,490m/s2 {50G}, 3 strokes in each X.Y.Z. axes (EIA-364-27)	Appearance	No Damage
			LLCR	For Contact □R: 30 milliohm MAX.
				For Shell □R: 50 milliohm MAX.
			Discontinuity	1 micro-sec Max.

5.4 ENVIRONMENTAL PERFORMANCE

ITEM	DESCRIPTION	TEST CONDITION		REQUIREMENT	
12	Humidity	A	Mate connectors together and perform the test as No Damage follows. Temperature : +25°C to +85°C Relative Humidity : 80% to 95% Duration : 4 cycles (96 hours) Upon completion of the test, specimens shall be conditioned at ambient room conditions for 24 hours, after which the specified measurements shall be performed. (EIA-364-31)	Appearance	No Damage
				LLCR	For Contact □R: 30 milliohm MAX.
					For Shell □R: 50 milliohm MAX.
		B	Unmated connectors and perform the test as follows. Temperature : +25°C to +85°C Relative Humidity : 80% to 95% Duration : 4 cycles (96 hours) Upon completion of the test, specimens shall be conditioned at ambient room conditions for 24 hours, after which the specified measurements shall be performed. (EIA-364-31)	Appearance:	No Damage
				LLCR	For Contact □R: 30 milliohm MAX.
					For Shell □R: 50 milliohm MAX.
13	Thermal Shock	10 cycles of: a) -55°C for 30 minutes b) +85°C for 30 minutes (EIA-364-32)		Appearance	No Damage
				LLCR	For Contact □R: 30 milliohm MAX.
					For Shell □R: 50 milliohm MAX.
14	Thermal Aging	Mate connectors and expose to 105 ± 2°C for 250 hours. Upon completion of the exposure period, the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed. (EIA-364-17)		Appearance	No Damage
				LLCR	For Contact: □R: 30 milliohm MAX.
					For Shell: □R: 50 milliohm MAX.
15	Solderability	Subject the test area of contacts into the flux for 5-10 sec. And then into solder bath, Temperature at 245 ±5°C, for 4-5 sec. (EIA-364-52)		95% of immersed area must show no voids, pin holes	
16	Resistance to Solder Heat	SEE SECTION 7		Appearance	No Damage After 1 times of reflow

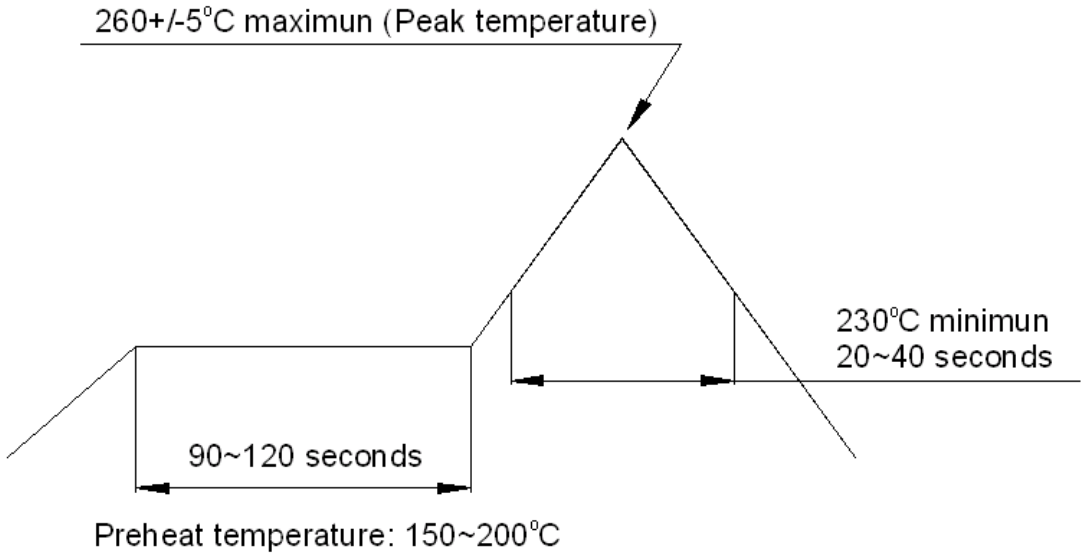
6.0 PRODUCT QUALIFICATION AND REQUALIFICATION TEST SEQUENCE

Test or Examination		Test Group							
		1	2	3	4	5	6	7	8
1	Examination of Product	1,9	1,7	1,8	1,7	1,3	1,3	1,3	1,4
2	Contact & Shell Resistance (LLCR)	2,4,6,8	2,4,6		2,6				
3	Insulation Resistance			5,7					
4	Dielectric Withstanding Voltage			2,4					
5	Contact Current Rating					2			
6	TMDS Signals Time Domain Impedance								2
7	TMDS Signals Time Domain Cross Talk FEXT								3
8	Insertion/ Withdrawal Force				3,5				
9	Durability				4				
10	Vibration		3						
11	Mechanical Shock		5						
12	Humidity	7		6					
13	Thermal Shock	3		3					
14	Thermal Aging	5							
15	Solderability						2		
16	Resistance to Solder Heat							3	
	Sample Size	6	2	2	5	5	5	5	2

All Test sample to be PCB mounted.

7.0 INFRARED REFLOW CONDITIONS:

This will be applicable SMT version. After resistance to soldering heat test, There shall be no Evidence of distortion or cracking and the parts shall meet all electrical and mechanical Specification.



TEMPERATURE CONDITION GRAPH

(TEMPERATURE ON BOARD PATTERN SIDE)