1.0 OBJECTIVE

This Product Specification covers the performance requirements for HDMI D TYPE receptacle connector.

2.0 GENERAL

2.1 Voltage: 40 Volts DC
2.2 Current: 0.3A Max.
2.3 Operating temperature range: - 30°C to + 80°C
2.4 Storage temperature range: - 40°C to + 85°C
2.5 Humidity Range: 10% ~ 80% RH

3.0 DEFINITIONS

3.1 Housing material: Sumitomo LCP E6808, UL94V-0, color: Black
3.2 Contact material: C5210-H, t=0.12mm
3.3 Shell material: SUS304-1/2H,t=0.30mm
3.4 Contact finishing:
  3.4.1 Contact area: Selective plating hard Au 15 micro inches min.
  3.4.2 Solder area: Au 1 micro inches min.
  3.4.3 Nickel 50 micro inches min. under plated over all
3.5 Shell finishing:
  3.5.1 Tin 80 micro inches min. plated.
  3.5.2 Nickel 30 micro inches min. plated over all

4.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

Please refer to FCI drawings, and other sections of this Specification for specific references to applicable documents and specifications. In the events of conflict between the requirements of this specification and the product drawing or of conflict between the requirements of this specification and the referenced documents, this specification shall take precedence.

EIA-364 TEST METHODS FOR ELECTRICAL CONNECTORS

5.0 REQUIREMENTES AND PROCEDURE

ITEM	Test Item (Frequency)	Requirements		Procedure
1	Appearance	Connector shall have no evidence of physical defects or otherwise unfit for testing		Visual inspection in compliance with appliance specification and document are performed, the test samples shall be free from defects such as damage, creep, deformation, blister and burrs that are detrimental to the function and appearance of test samples. (EIA-364-18)
2	Contact Resistance	Initial Contact resistance excluding conductor Resistance: 10 milliohms maximum. (Target design value)		Mated connectors, Contact: measure by dry circuit, 20 m Volts maximum. 10mA. Shell: measured by open circuit, 5 Volts maximum, 100mA. (ANSI/EIA-364-06B)
3	Durability	Contact Resistance: Contact: Change from initial value 30 milliohms maximum. Shell: Change from initial value 50 milliohms maximum.		Measure contact and shell resistance after Following. Automatic cycling :5,000 cycles at 100 ± 50 cycles per hour
4	Thermal Shock	Appearance	No Damage	10 cycles of: a) -55°C for 30 minutes b) +85°C for 30 minutes (ANSI/EIA-364-32C, Condition I)
		Contact resistance	Contact: Change from initial value: 30 milliohms maximum. Shell Part: Change from initial value: 50 milliohms maximum.	
5	Thermal Aging	Contact resistance	Contact: Change from initial value: 30 milliohms maximum. Shell Part: Change from initial value: 50 milliohms maximum.	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. (ANSI/EIA-364-17B, Condition 4, Method A)
		Appearance	No Damage	

6	Humidity (cycle)condition A (Mated)	Contact Resistance	Contact: Change from initial value: 30 milliohms maximum. Shell Part: Change from initial value: 50 milliohms maximum.	Mate connectors together and perform the test as follows. Temperature : +25 to +85 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. (ANSI/EIA-364-31B)
		Appearance	No Damage	
7	Vibration	Contact Resistance	Contact: Change from initial value: 30 milliohms maximum. Shell: Change from initial value: 50 milliohms maximum.	Amplitude:1.52 mm P-P or 147m/s2 {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. (ANSI/EIA-364-28 Condition III)
		Appearance	No Damage	
8	Physical shock	Contact Resistance	Contact: Change from initial value: 30 milliohms maximum. Shell: Change from initial value: 50 milliohms maximum.	Pulse width: 11 m sec., Waveform : half sine, 490m/s2{50G}, 3 strokes in each X.Y.Z. axes (ANSI/EIA-364-27, Condition A)
		Discontinuity	1 µsec maximum.	
		Appearance	No Damage	
9	Dielectric withstanding voltage	No Breakdown		Unmated connectors, apply 250 Volts AC (RMS) between adjacent terminal or ground. Mated connector, apply 150 Volts AC (RMS.) between adjacent terminal and ground. (ANSI/EIA-364-20C, Method A)

10	Insulation Resistance	100 mega ohm minimum (unmated)		Unmated connectors, apply 500 Volts DC between adjacent terminal or ground. (ANSI/EIA 364-21C)
		10 mega ohm minimum (mated)		Mated connectors, apply 150 Volts DC between adjacent terminal or ground.
11	Cable flexing	10 mega ohm minimum (mated) Discontinuity		25 cycles in each of 2 planes Dimension X=6.4 x Cable Diameter. (ANSI/EIA-364-41C,Condition I)
12	Electrostatic Discharge	No evidence of Discharge to Contacts at 8 k Volts		Test unmated each connector from 1 k Volt to 8 k Volts in 1 k Volt steps using 8 mm ball probe (IEC-801-2).
13	Insertion Force	44.1N {4.5kgf} maximum		Insertion and withdrawal speed: 25 mm /minute. (ANSI/EIA-364-13)
14	Withdrawal Force	5N minimum 25N maximum And after 5,000 cycles mating, 3N minimum 25N maximum		Insertion and withdrawal speed: 25 mm /minute. (ANSI/EIA-364-13)
15	Contact retention	2N MIN.		Pull the contact until it is slipped out. The test rate is 10 mm per minute. Use M3 screw Put the connector to PCB, and then tighten the screw at following torque.
16	Wrenching Strength	Appearance		0-20N: No plug or Receptacle damage. 20-40N: No receptacle damage.
17	Solder ability	More than 95% dipped area is covered with solder	Dip in applicable flux for 5~10s and in solder SnAgCu at 245±5℃ for3~5sec. (MIL-STD-202 Method 20B)	Mated connectors, apply perpendicular forces to plug at a 15 mm distance from the edge of the receptacle covered by test fixture. Perform this test using virgin parts. Forces are to 4 directions (left, right, up, down).

18	Salt Spray	Contact resistance: Contact :change from initial value 30mΩ Max . Shell : change from initial value 50m Ω Max . Appearance: No Damage.	Temperature :35+/-2℃ Concentration: 5% (weight) Duration:24H(Or by customer request 8h test/16 h pause-3cycles) (ANSI/EIA-364-26B)

6.0 RECOMMENDED REFLOW PROFILE

1.Humidity condition

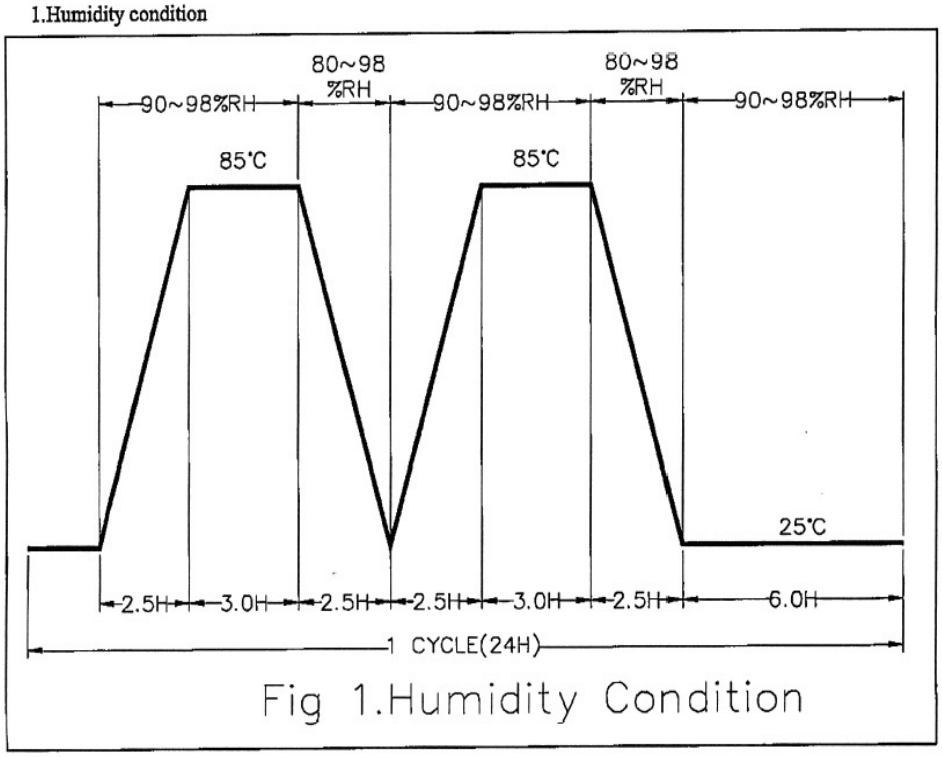
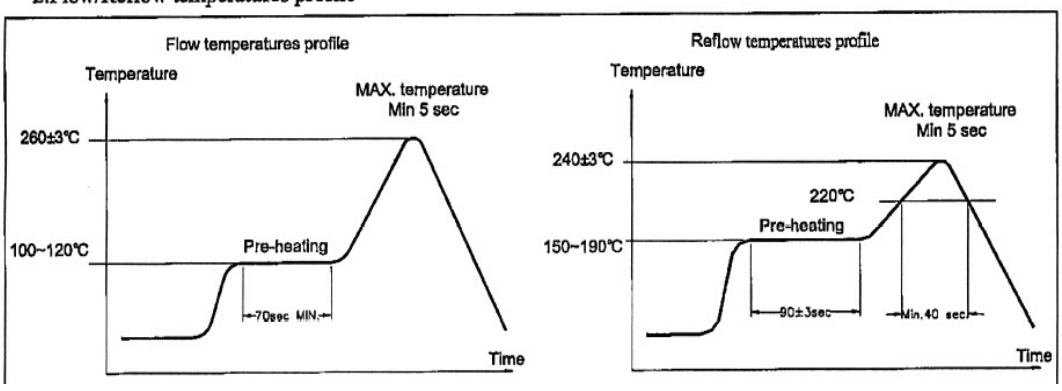


Fig 1.Humidity Condition

2.Flow/Reflow temperatures profile



7.0 TEST GROUP

		Test Group								
Item	Description	A	B	C	D	E	F	G	H	I
1	Appearance								2	2
2	Contact resistance (LLCR)	1,3,5,7,9	1,3,5							
3	Durability	2					3			
4	Thermal Shock	4		2						
5	Thermal aging	6								
6	Humidity (cycle condition A (Mated)	8		5						
7	Vibration		2							
8	Mechanical Shock		4							
9	Dielectric withdrawing voltage			1,3	2					
10	Insulation Resistance			4,6	3					
11	Cable flexing				1					
12	Electrostatic discharge					1				
13	Insertion force						1,4			
14	Withdrawal force						2,5			
15	Contact retention							1		
16	Wrenching strength								1	
17	Solderability									2
18	Salt Spray test									1

RECORD RETENTION

Revision	Page	Description	ECR No.	Date
A	**All**	**New release**		**08/29/11**
B	**All**	**Change the classification column description**	**ELX-T-006500**	**09/30/11**