浙江合豐科技有限公司
ZHE JIANG HEFENG TECHNOLOGY CO.,LTD

Product Name	HDMI D Type Series	Rev.	A
Part No.	HHF-121000-2SD	Page	1 /7

Product Specification

产 品 规 格 书

Prepared by：Mark

制　　定：

Checked by：Chu

审　　核：

Approved by：

核　　准：

1. SCOPE

1.1 Content

This specification is designated the Performance, Tests and quality requirements for High-Definition Multimedia Interface (HDMI) Connector.

1.2 Design and Construction

Product shall be conformed the Design, Construction and Physical dimensions shown as product drawing.

2. Material

Connector

Contact ： Copper alloy , Selective gold plating on contact area ， Gold plating on solder tail or Tin plating , Nickel underplate.

Housing ： High Temperature Thermoplastic, UL94V-0 rated.

Shell ： Copper alloy, Nickel Plating or Gold Plating.

3. Specification

Current Rating ： 0.3A per contact minimum

Voltage Rating ： 40V AC(RMS)

Operating temperature ： -25℃ ～ +85℃

4. Test description

NO	TEST ITEM	TEST CONDITION	REQUIREMENT	
1	Vibration	Amplitude : 1.52mm 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
			Contact Resistance	Contact : Change from initial value: 30 milliohms maximum. Shell Part : Change from initial value: 50 milliohms maximum.
			Discontinuity	1 μsec maximum.
2	Shock	Pulse width: 11 msec., Waveform : half sine, 490m/s2{50G}, 3 strokes in each X.Y.Z. axes (ANSI/EIA-364-27, Condition A)	Appearance	No Damage
			Contact Resistance	Contact : Change from initial value: 30 milliohms maximum. Shell : Change from initial value: 50 milliohms maximum.
			Discontinuity	1 μsec maximum.
3	Durability	Measure contact and shell resistance after Following. Automatic cycling : 5,000 cycles at 100 ± 50 cycles per hour	Contact Resistance	Contact : Change from initial value: 30 milliohms maximum. Shell : Change from initial value: 50 milliohms maximum.
4	Insertion / Withdrawal Force	Insertion and withdrawal speed : 25mm/minute. (ANSI/EIA-364-13)	Withdrawal force	5~25N
			Insertion force	44.1N maximum

NO	TEST ITEM	TEST CONDITION	REQUIREMENT	
5	Wrenching strength	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).	appearance	0-20N: No plug or receptacle damage. 20-40N: No receptacle damage.
6	Contact Resistance	Mated connectors, Contact : measure by dry circuit, 20 mVolts maximum.,10mA. Shell : measured by open circuit, 5 Volts maximum ,100mA. (ANSI/EIA-364-06B)	Initial Contact resistance excluding conductor resistance: 10 milliohms maximum . (Target design value)	
7	Dielectric Strength	Unmated: Unmated connector, apply 250Volts AC(RMS.) between adjacent terminal or ground. Mated: mated connector, apply 150Volts AC(RMS.) between adjacent terminal or ground. (ANSI/EIA-364-20C, Method A)	No Breakdown	
8	Insulation Resistance	Unmated connectors, apply 500 Volts DC between adjacent terminal or ground. (ANSI/EIA 364-21C)	100 megaohms minimum (unmated)	
		Mated connectors, apply 150 Volts DC between adjacent terminal or ground.	10 megaohms minimum (mated)	
9	Contact Current Rating	55 °C, maximum ambient 85 °C, maximum temperature change (ANSI/EIA-364-70A)	0.3 A minimum	
10	Applied Voltage Rating	40 Volts AC (RMS.) continuous maximum, on any signal pin with respect to the shield.	No Breakdown	

NO	TEST ITEM	TEST CONDITION		REQUIREMENT	
11	Thermal Shock	10 cycles of: a) -55°C for 30 minutes b) +85°C for 30 minutes (ANSI/EIA-364-32C, Condition I)		Appearance	No Damage
				Contact Resistance	Contact : Change from initial value: 30 milliohms maximum. Shell Part : Change from initial value: 50 milliohms maximum.
12	Humidity	A	Mate connectors together and perform the test as follows. Temperature : +25 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. (ANSI/EIA-364-31B)	Appearance	No Damage
				Contact Resistance	Contact : Change from initial value: 30 milliohms maximum. Shell : Change from initial value: 50 milliohms maximum.
		B	Unmated each connectors and perform the test as follows. Temperature : +25 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. (ANSI/EIA-364-31B)	Appearance	No Damage
				Dielectric Withstanding Voltage and Insulation Resistance	Conform to item of Dielectric Withstanding Voltage and Insulation Resistance

NO	TEST ITEM	TEST CONDITION	REQUIREMENT	
13	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. (ANSI/EIA-364-17B, Condition 4, Method A)	Appearance	No Damage
			Contact Resistance	Contact : Change from initial value: 30 milliohms maximum. Shell Part : Change from initial value: 50 milliohms maximum.

5. Test sequences:

Table I: Product Qualification Test Sequence

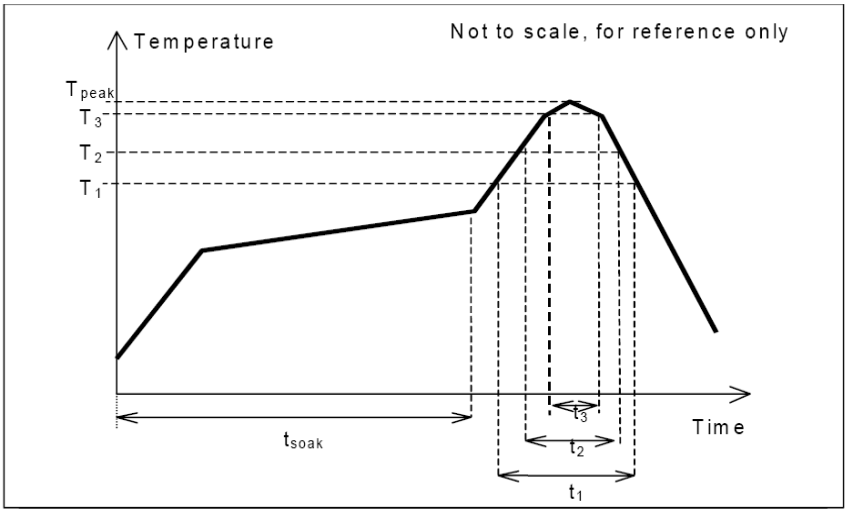
Test Description	Test Group							
	A	B	C	D	E	F	G	H
Electrical Test:								
1. Contact Resistance	1 5	1 5	1 7	1 5	1 5	1 5		
2. Dielectric Strength	2 6	2 6	2 8	2 6	2 6	2 6		
3. Insulation Resistance	3 7	3 7	3 9	3 7	3 7	3 7		
4. Contact Current Rating								
5. Applied Voltage Rating								
Mechanical Test:								
6. Vibration	4							
7. Shock		4						
8. Durability			5					
9. Insertion/Withdrawal Force			4 6					
10. Wrenching strength								

Environmental Test：								
11. Thermal Shock				4				
12. Humidity					4			
13. Thermal Aging						4		
Sample Quantity	5	5	5	5	5	5		
Sample No.	A1 ↓ A5	B1 ↓ B5	C1 ↓ C5	D1 ↓ D5	E1 ↓ E5	F1 ↓ F5		

REFLOW SOLDERING PROFILE

Pb-free reflow profile requirements:

Parameter	Reference	Specification
Average temperature gradient in preheating		2.5°C/s
Soak time	tsoak	2-3 minutes
Time above 217°C	t1	60 s
Time above 230°C	t2	50 s
Time above 250°C	t3	5 s
Peak temperature in reflow	Tpeak	255°C (–0/+5°C)
Temperature gradient in cooling		Max -5°C/s



This profile is the minimum requirement for evaluating soldering heat resistance of components. Heat transfer method used for reflow soldering is hot air convection. The actual air temperatures used to achieve the specified profile is higher and largely dependent on the reflow equipment.