

### **PRODUCT SPECIFICATION**

### TITLE

### HDMI plug to HDMI plug Cable Assembly

REVISION:	ECR/ECN INFORMATION:	TITLE:			SHEET No.
Α	EC No: DATE: <b>05/25/2018</b>	HDMI Plug to	Plug Cable Assen	nbly	<b>1</b> of <b>7</b>
DOCUMEN	ΓNUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPRO\	/ED BY:
PS	68767-0007	CISSY WANG	LIU LIHUA	FRED	NIE
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#### 1.0 SCOPE

This specification covers the requirements for HDMI 1.4 CAT 2 plug to HDMI plug Cable Assy.

#### 2.0 PRODUCT DESCRIPTION

See the sales drawing for product shape; dimension and materials, the other section of this specification for the necessary referenced document and specification. The part number serial covered in this specification are as follow table:

Molex Series 68767

Detail HDMI plug to HDMI plug cable

#### 3.0 PRODUCT SPECIFICATIONS

- 3.1 Rated voltage (Maximum): 40V AC (RMS)
- 3.2 Rated current (Maximum): 0.5A AC (RMS)/DC
- 3.3 Temperature

Operating temperature range: 0°C to +70°C Storage temperature range: -20°C to + 70°C

#### 4.0 QUALIFICATION

Laboratory conditions and sample selection are in accordance with EIA-364-1000.01

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#### 5.0 PERFORMANCE

#### **5.1 ELECTRICAL CHARACTERISTICS**

Test Description	Test	Condition	Performance Rec	luirement
Low Level Contact	ANSI/EIA 364-06B	<b>connectors</b> dry circuit, 20 mV Max.,	30 milliohm Max. [Initial contact resistance e conductor resistance:10m0 (Target design value)]	
Resistance (LLCR)	ANSI/EIA-364-06A-8 Shell: measure by dr Max.	3 y circuit, 5V Max., 100 mA	50 milliohm Max.	
Dielectric Withstanding Voltage	Unmated connector   Apply 500V AC (rms.) for 1 minute between   adjacent terminal and ground.   Mated connectors   Apply 300V DC for 1 minute between adjacent   terminal and ground.   (ANSI/EIA 364-20)			
Insulation Resistance		ed connector een adjacent terminal and ethod 302)	100megohm Min.	
Resistance		connectors een adjacent terminal and ethod 302)	10megohm Min.	
Contact Current Rating	urrent After temperature changed: 85°C Maximum		0.5A Min.	
Applied Voltage Rating40V AC (rms.) continuous maximum, on any signal pin with respect to the shield.No breakdownElectrostatic DischargeTest unmated each connector from 1 kV to 8 kV in 1 kV steps using 8 mm ball probe. (IEC-801-2)No evidence of discharge to contact				
			No evidence of discharge t	o contacts at 8kV
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PS-68	767-0007	CISSY WANG	LIU LIHUA	FRED NIE FILENAME: PS754311

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	Rise time≦200psec.(10%~90%) Signal to ground pin ratio per HDMI	Contact area	100±15 Ω
TMDS Signals Time Domain	Designation. Differential measurement specimen environment impedance=100 ohms differential	Transition area	100±15 Ω
Impedance	Source side receptacle connector mounted on a controlled impedance PCB fixture. (ANSI/EIA-364-108 Draft Proposal)	Cable area	100±10 Ω
TMDS Signals Time Domain Cross-talk FEXT	Rise time≦200psec.(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.	-20dB Max.	
TMDS Signals	Rise time =  TIME (TMDSx+)-TIME (TMDSx-)  Differential Measurement Specimen Environment Impedance = 100 ohms differential.	Intra-pair Skew: 112 picoseconds/cab	le Max.
Skew	Source side receptacle connector mounted on a controlled impedance PCB fixture.	Inter-pair Skew: 1.78 nanoseconds/ca	
Attenuation	Connect cable to connector on test fixture, measure by Network Analyzer. (See below figure)	0 825 1650 2475 5.0 5.0 10.0 15.0 20.0 25.0 30.0 45.0 50.0 45.0 50.0 45.0 50.0 45.0 50.0 45.0 50.0 45.0 50.0 45.0 45	Frequency [MHz] 5 3300 4125 4950 5775 1200 22.0 22.0 5 500MHz Limits – Sufficient Condition
<sup>+/</sup> Digital Sampling Oscilloscope+/	- Signal X+42 	rork Analyzer ↔ Test Cable	
	Test Fixture Test cable main Differential Impedance asurement Configuration Cross talk FEXT+' 	Test Fixture	
Signal Skew Me EVISION: ECF A EC N DATI	Test cable Splitter+'   main Differential Impedance Cross talk FEXT+'   asurement Configuration Attenuation Measurement of   R/ECN INFORMATION: TITLE:   No: HDMI Plug to	o Plug Cable As	
EVISION: ECF A EC N DATH OCUMENT NUM	Test cable Splitter+'   main Differential Impedance Cross talk FEXT+'   asurement Configuration Attenuation Measurement of   R/ECN INFORMATION: TITLE:   No: HDMI Plug to	configuration*	5 of 7



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#### **5.2 MECHANICAL CHARACTERISTICS**

Test Description Test Condition		Performance Requirement	
	Rotate the specimen up to 100 cycles in each of 2 planes at the speed of 12 to 14 complete cycles ( of 180 total traverse ) per minute, see paragraph 6 Mandrel	Discontinuity	1 microsecond Max.
Cable Flexing	Diameter : X =3.7 × Cable Diameter. (ANSI/EIA-364-41, Condition I)	Dielectric Strength and Insulation Resistance	Conform to item of Dielectric Withstanding Voltage and Insulation Resistance
Insertion Force/	EIA 364-13 The insertion and withdrawal force test	Withdrawal Force	9.8N {1.0 kgf} Min. 39.2N {4.0 kgf} Max.
Withdrawal Force	shall be done at a maximum rate of 25±3 mm per minute.	Insertion Force	44.1 {4.5 kgf} Max.
Pulling Force	EIA 364-38 Test Condition A The cable assembly shall be subjected to a 40N axial load for a minimum of 1 minute while clamping one end of the cable plug.		amage and no electrical microsecond to the cable
Durability or Insertion/Extraction Cycles	Automatic cycling: 10,000 cycles at 100±50 cycles per hour. EIA 364-09	Contact Resistance	Change form initial requirement : Contact: 30 milliohm Max. Shell: 50 milliohm Max.

#### **5.3 ENVIRONMENTAL CHARACTERISTIC**

Test Test Pro		rocedure		Performance	Requirement			
Therma Shock				A		pearance	No Damage	
			Mate connectors and subject to the following conditions for 10 cycles. 1cycle -55±3°C for 30 minutes			Change form initial requirement :		
	+05±3 C 101 3			-32, Condition I) Resistance		Contact: 30 milli Max.	ohm	
						Shell: 50 milliohm Max.		
R	EVISION:	ECF	R/ECN INFORMATION:	TITLE:				SHEET No.
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D	DOCUMENT NUMBER:		CREATED / REVISED B	Y:	CHECKED BY:	APPROV	ED BY:	
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	250 hours. Upon com	expose to 105±2°C for pletion of the exposure	Appearance	No Damage
Tempera Life	to 2 hours, after which measurements shall	nt room conditions for 1 h the specified	Contact Resistance	Change form initial requirement : Contact: 30 milliohm Max.
				Shell: 50 milliohm Max.
	A) Mate connectors together and perform the test as follows.Temperature : +25 to +85°CRelative Humidity : 80% to 95%Duration : 4 cycles (96 hours)		Appearance	No Damage
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)		Contact Resistance	Change form initial requirement : Contact: 30 milliohm Max. Shell: 50 milliohm Max.	
Humid	B) Unmate connector as follows. Temperature : +25 to Relative Humidity : 80 Duration : 4 cycles (5	B) Unmate connectors and perform the test		No Damage
	Upon completion of the be conditioned at am for 24 hours, after wh measurements shall (ANSI/EIA-364-31B)	ich the specified	Dielectric Withstanding Voltage and Insulation Resistance	Conform to item of Dielectric Withstanding Voltage and Insulation Resistance
	salt mist condition. U exposure period, salt	expose to the following oon completion of the deposits shall be wash or dip in running	Appearance	No Damage
removed by a gentle wash or dip in running water, after which the specified measurements shall be performed. NaCl solution: Concentration: 5%±1%. Spray time: 24h±1h. Ambient Temperature: 35 °C ±2°C. EIA-364-26		Contact Resistance	Change form initial requirement : Contact:30 milliohm Max. Shell:50 milliohm Max.	
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Δ	EC No:	•		<b>7</b> of <b>7</b>
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