



SPECIFICATION

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SPEC. NO.: PS-59558-XXXXX-XXX

REVISION: A

PRODUCT NAME: MICRO HDMI D TYPE CONNECTOR SERIES

PRODUCT NO: 595XX 、 303XXSERIES

PREPARED: TINA-L DATE: 2017.08.11	CHECKED: DAVID-T DATE: 2017.08.11	APPROVED: JACK-K DATE: 2017.08.11
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TITLE: **MICRO HDMI D TYPE CONNECTOR**

RELEASE DATE: 2017.08.11

REVISION: A

ECN No: ECN-1708207

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Aces P/N: **59558 series**

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1 Revision History

Rev.	ECN #	Revision Description	Prepared	Date
O	ECN-1604061	RELEASED	BRUCE	2016/04/06
A	ECN-1708207	ADD 303XX SERIES	TINA-L	2017.08.11

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2 SCOPE

This specification covers performance, tests and quality requirements for **MICRO HDMI D type connector**.

3 APPLICABLE DOCUMENTS

High-Definition Multimedia Interface Specification

EIA-364: ELECTRONICS INDUSTRIES ASSOCIATION

4 REQUIREMENTS

4.1 Design and Construction

- 4.1.1 Connector shall be of the design, construction and physical dimensions specified on the applicable sales drawing.
- 4.1.2 All materials conform to R.o.H.S. and the standard depends on TQ-WI-140101.

4.2 Materials and Finish

- 4.2.1 Contact: High performance copper alloy
Finish: [Pls. refer to the drawing.](#)
- 4.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0
- 4.2.3 Shell: [Copper alloy](#)
Finish: [Pls. refer to the drawing.](#)

4.3 Ratings

- 4.3.1 Working voltage less than 36 volts (per pin)
- 4.3.2 Voltage: [40 V AC \(per pin\)](#)
- 4.3.3 Current: [0.3 Amperes \(per pin\)](#)
- 4.3.4 Operating Temperature : [-40°C to +85°C](#)

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5 Performance

5.1. Test Requirements and Procedures Summary

Item	Requirement	Standard
Examination of Product	Product shall meet requirements of applicable product drawing and specification.	Visual, dimensional and functional per applicable quality inspection plan.
ELECTRICAL		
Item	Requirement	Standard
Low Level Contact Resistance (Contact and Shell)	Initial: Contact resistance excluding conductor resistance: 10 milliohms maximum.	Mated connectors, Contact: measured by dry circuit, 20 mVolts maximum, and 10mA. Shell: Measured by open circuit, 5 Volts maximum, 100mA. (EIA-364-23)
	After test: Contact : Change from initial value: 30 milliohms maximum. Shell Part : Change from initial value: 50 milliohms maximum. (After Subtracting Bulk Resistances of Plug, Receptacle and their PCB traces).	
Insulation Resistance	Unmated Connectors: 100 MΩ minimum.	Unmated connectors, apply 500 Volts DC between adjacent terminal or ground. (EIA 364-21)
	Mated Connectors: 10 MΩ minimum.	Mated connectors, apply 150 Volts DC between adjacent terminal or ground. (EIA 364-21)

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Dielectric Withstanding Voltage	No discharge, flashover or breakdown. Current leakage: 0.5 mA max.	Test duration for 60 seconds. Unmated connectors, apply 250 Volts AC (rms.) between Adjacent terminal or ground. Mated connector, apply 150 Volts AC (rms.) between adjacent terminal and ground. (EIA 364-20C, Method A)
Temperature Rise	85 °C , Max. temperature change	Mate connector: measure the temperature rise at rated current until temperature stable. 55°C , Max. ambient. (EIA-364-70 METHOD 1)
TMDS Signals Time Domain Impedance	Connector Area: 100 ohms ±25% Transition Area: 100 ohms ±15% Cable Area 100 Ohm ± 10%	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. (ANSI/EIA-364-108)
TMDS Signals Time Domain Cross Talk FEXT	10% Max.	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)

MECHANICAL

Item	Requirement	Standard
Durability	5,000 cycles	Perform unplug/plug cycles at a maximum rate of 100 ± 50 cycles per hour. (ANSI/EIA-364-09)

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Insertion/Withdrawal Force	<p>Initial: Insertion Force: 44.1N {4.5kgf} Max. Withdrawal Force: 5N {0.5kgf} Min. 25N {2.5kgf} Max.</p> <p>After Durability: Insertion Force: 44.1N {4.5kgf} Max. Withdrawal Force: 3N {0.3kgf} Min. 25N {2.5kgf} Max.</p>	<p>Insertion and withdrawal speed : 25mm/minute. (EIA-364-13)</p>
Vibration	<p>1 μs Max.</p>	<p>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. (EIA-364-28 Condition III)</p>
Shock(Mechanical)	<p>1 μs Max.</p>	<p>Pulse width: 11 msec., Waveform : half sine, 490m/s²{50G}, 3 strokes in each X.Y.Z. axes (EIA-364-27, Condition A)</p>

ENVIRONMENTAL

Item	Requirement	Standard
Thermal Shock	<p>See Product Qualification and Test Sequence Group D</p>	<p>10 Cycles of : -55°C+0/-3 °C, 30 minutes +85°C+3/-0 °C, 30 minutes (EIA-364-32C, test condition I)</p>
Humidity	<p>See Product Qualification and Test Sequence Group D</p>	<ol style="list-style-type: none"> 1. Mate connectors together and perform the test as follows. 2. Temperature : +25°C to +85°C 3. Relative Humidity : 80% to 95% 4. Duration : 4 cycles (96 hours) 5. Upon completion of the test, specimens must be conditioned at ambient room conditions for 24 hours, after which the specified measurements must be performed. (EIA-364-31B)

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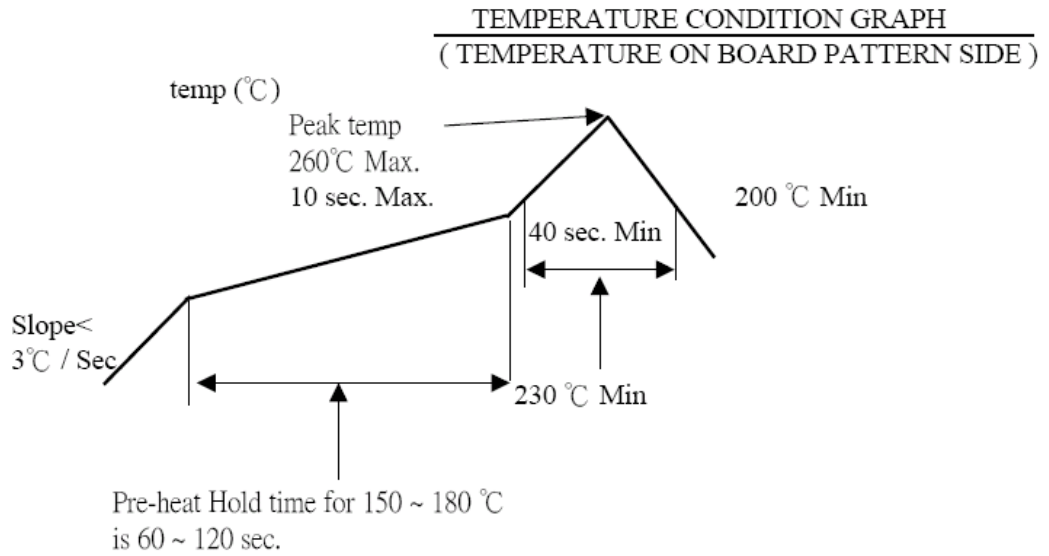
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Thermal Aging	See product Qualification and test sequence group E	Mate connectors and expose to +105°C ±2°C for 250 hours . Upon completion of the exposure period, the test specimens must be conditioned at ambient room conditions for 1 to 2 hours after which the specified measurements must be performed. (EIA-364-17B,Condition 4,Method A)
Salt Spray (Only For Gold Plating)	See product Qualification and test sequence group F	Subject mated/unmated connectors to 5% salt-solution concentration, 35°C (I) Gold flash for 8 hours (II) Gold plating 5 u" for 96 hours. (EIA-364-26)
Solder ability	Tin plating: Solder able area shall have minimum of 95% solder coverage. Gold plating: Solder able area shall have minimum of 75% solder coverage	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)
Resistance to Reflow Soldering Heat	See Product Qualification and Test Sequence Group H (Lead Free)	Pre Heat : 150°C~180°C, 60~120sec. Heat : 230°C Min., 40sec Min. Peak Temp. : 260°C Max, 10sec Max.
Hand Soldering Temperature Resistance	Appearance: No damage	T ≥ 350°C , 3sec at least.

Note. Flowing Mixed Gas shall be conduct by customer request.

6 INFRARED REFLOW CONDITION





7 PRODUCT QUALIFICATION AND TEST SEQUENCE

Test or Examination	Test Group										
	A	B	C	D	E	F	G	H	I	J	
	Test Sequence										
Examination of Product	1,3	1,7	1,6	1,7	1,6	1,4	1,3	1,4	1,3	1,4	
Low Level Contact Resistance		2,6	2,5	2,10	2,9	2,5		2,5			
Insulation Resistance				3,9	3,8						
Dielectric Withstanding Voltage				4,8	4,7						
Temperature Rise	2										
Insertion/Withdrawal Forces		3,5									
Durability		4									
Vibration			3								
Shock(Mechanical)			4								
Resistance to Reflow Soldering Heat								3			
Thermal Shock				5							
Humidity				6							
Thermal Aging					5						
Salt Spray(Only For Gold Plating)						3					
Solder ability							2				
Hand Soldering Temperature Resistance									2		
TMDS Signals Time Domain Impedance										2	
TMDS Signals Time Domain Cross Talk FEXT										3	
Sample Size	2	4	4	4	4	4	2	4	4	2	