NUMBER: 108-5401

SECURITY CLASSIFICATION: Customer Release

108-5401

Product Specification

AMPLIMITE CONNECTOR/ Ⅲ-J HD-22 ULTRA SLIM TYPE

1. Scope :

1.1 Contents :

This specification covers the requirements for product performance, test methods and quality assurance provisions of AMPLIMITE CONNECTOR/Ⅲ-J HD-22 ULTRA SLIM TYPE. Applicable product description and part numbers are as shown in Appendix 1.

2. Applicable Documents :

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.

2.1 AMP Specifications :

A. 109-5000 Test Specification, General Requirements for Test Methods

B. 501-5151 Test Report : Qualification Test Report

2.2 Commercial Standards and Specifications :

A. MIL-STD-202 Test Methods for Electronic and Electrical Component Parts

LTR	REVISION RECORD	DR	CHK	DATE
A	Revised FJ00-0976-97	T. K	Y. F	10/30/97
0	Released FJ00-2152-95	T. K	Y. F	13.6'95

DR. 13.Jun. '95 T. Kawamae

CHK. 13.Jun. '95 Y. Fujiura

APP. 13.Jun. '95 Y. Fujiura

SHEET 1 OF 8

AMP (Japan), Ltd. Kawasaki, Japan

LOC	LOC	NO.	REV.
J	A	108-5401	A

NAME AMPLIMITE CONNECTOR/ Ⅲ-J HD-22 ULTRA SLIM TYPE

DIST. PRINT

10/30/97

3. Requirements :

3.1 Design and Construction :

Product shall be of the design, construction and physical dimensions specified on the applicable product drawing.

3.2 Materials :

A. Contact :

Material : Phos Bronze

Finish : ⓐ 0.1 μm Min. Thick gold-plated on contact area only over nickel under-plate

ⓑ 0.38 μm Min. Thick gold-plated on contact area only over nickel under-plate

ⓒ 0.76 μm Min. Thick gold-plated on contact area only over nickel under-plate

B. Housing :

Material : Thernoplastic compound

C. Metal shell :

Material : Carbon steel

Finish : Nickel or tin plated

D. Retention leg :

Material : Brass

Finish : Tin-lead plated

3.3 Ratings :

A. Voltage Rating : 125 VAC

B. Current Rating : 2 A

C. Temperature Rating : −55 °C to +105 °C

3.4 Performance Requirements and Test Descriptions :

The product shall be designed to meet the electrical, mechanical and environmental performance requirements specified in Fig. 2. All tests shall be performed in the room temperature, unless otherwise specified.

3.5 Test Requirements and Procedures Summary :

Para.	Test Items	Requirements	Procedures
3.5.1	Confirmation of Product	Product shall be conforming to the requirements of applicable product drawing and Application Specification.	Visually, dimensionally and functionally inspected per applicable quality inspection plan.
		Electrical Requirements	
3.5.2	Termination Resistance (Low Level)	25 mΩ Max. (Initial) 30 mΩ Max. (Final)	Subject mated contacts assembled in housing to 50 mV Max open circuit at 50 mA Fig. 3 AMP Spec. 109-5311-1
3.5.3	Insulation Resistance	5000 MΩ Min. (Initial) 1000 MΩ Min. (Final)	Impressed voltage 500 VDC. Test between adjacent circuits of unmated connectors. AMP Spec. 109-5302-4
3.5.4	Dielectric withstanding Voltage	No creeping discharge nor flashover shall occur. Current leakage : 0.5 mA Max.	1 kVAC for 1 minute. Test between adjacent circuits of unmated connectors. AMP Spec. 109-5301
		Physical Requirements	
3.5.5	Vibration (High Frequency)	No electrical discontinuity greater than 0.1 μsec. shall occur. 30 mΩ Max. (Final)	Vibration Frequency : 10-500/15 min. Accelerated Velocity : 98 m/s^2 (10 G) Vibration Direction : 3 drops each to normal and reversed directions of X, Y, Z axes Duration : 3 hours each AMP Spec. 109-5202 Condition A

Fig. 1 (CONT)

Para.	Test Items	Requirements	Procedures
3.5.6	Shock	No electrical discontinuity greater than 0.1 μsec. shall occur. 30 mΩ Max. (Final)	Accelerated Velocity : 490 m/s^2 (50 G) Waveform : Halfsine shock pulses Duration : 11 msec. Velocity Change : 3.4 m/s Number of Drops : 3 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops AMP Spec. 109-5208 Condition A
3.5.7	Connector Mating Force (Including Grounding Indents)	15 Pos. : 147 N (15 kgf) Max.	Operation Speed : 25.4 mm/min. Measure the force required to mate connectors. AMP Spec. 109-5206 Condition A
3.5.8	Connector Unmating Force (Including Grounding Indents)	15 Pos. : 14.7 N (1.5 kgf) Min.	Operation Speed : 25.4 mm/min. Measure the force required to unmate connectors. AMP Spec. 109-5206 Condition A
3.5.9	Contact Retention Force	14.7 N (1.5 kgf) Min.	Apply an axial pull-off load to crimped wire. Operation Speed : 25.4 mm/min. AMP Spec. 109-5212
3.5.10	Durability (Repeated Mate/ Unmating)	30 mΩ Max. (Final)	Operation Speed : 300 cycles/hr No. of Cycles : 500 cycles AMP Spec. 109-5213
3.5.11	Solderability	Wet Solder Coverage : 95 % Min.	Solder Temperature : 235$\pm$5 °C Immersion Duration : 5$\pm$0.5 seconds Flux : Alpha 100 AMP Spec. 109-5203
3.5.12	Resistance to Soldering Heat	No physical damege shall occur.	Test connector on PCB. Solder Temerature : 260$\pm$5 °C Immersion Duration : 10$\pm$1 sec. AMP Spec. 109-5204 Condition B

Fig. 1 (CONT)

Para.	Test Items	Requirements	Procedures
	Environmental Requirements		
3.5.13	Thernal Shock	30 mΩ Max. (Final)	Mated connector −55 °C/30 min., +105 °C/30 min. Making this a cycle, repeat 5 cycles. AMP Spec. 109-5103
3.5.14	Humidity-Temperature Cycling	Insulation resistance (Final) 1000 MΩ Min. Termination resistance 30 mΩ Max. (Final)	Mated connector, 25~65 °C, 95 % R.H. 10 cycles Cold shock −10 °C not performed AMP Spec. 109-5106
3.5.15	Salt Spray	30 mΩ Max. (Final) No remarkable corrosion shall occur.	Subject mated connectors to 5 % salt concentration for 48 hours : MIL-STD-202, Method 101 AMP Spec. 109-5101 Condition A

Fig. 1 (END)

3.6 Product Qualification Test Sequence

Test or Examination	Test Group									
	1	2	3	4	5	6	7	8	9	10
	Test Sequence (a)									
Confirmation of Product	1, 5	1, 4	1	1, 8	1, 4	1, 4	1, 3	1, 3	1, 4	1, 4
Termination Resistance (Low Level)		2, 5		2, 9	2, 5	2, 5			2, 5	2, 5
Dielectric withstanding Voltage	3, 6									
Insulation Resistance	2, 7									
Vibration (High Frequency)					3					
Physical Shock						3				
Connector Mating Force				3, 6						
Connector Unmating Force				4, 7						
Contact Retention Force			2							
Durability (Repeated Mate/Unmating)				5						
Solderability							2			
Resistance to Soldering Heat								2		
Thermal Shock									3	
Temprature-Humidity Cycling	4	3								
Salt Spray										3

(a) Numbers indicate sequence in which tests are performed.

Fig. 2

The applicable product descriptions and part numbers are as shown in Appendix 1.

Prod. P/N		Description
177514-☐	Receptacle Right Angle Size 1 15P Standard-D Shape Type	Tine L=1.80 mm, Shell : Tin Pl.
177802-☐	Receptacle Right Angle Size 1 15p Standard-D Shape Type	Tine L=2.80 mm, Shell : Tin Pl.
177894-☐	Receptacle Right Angle Size 1 15p Reversed-D Shape Type	Tine L=1.80 mm, Shell : Tin Pl.
179696-☐	Receptacle Right Angle Size 1 15p Standard-D Shape Type	Tine L=2.80 mm, Shell : Nickel Pl.
353477-☐	Receptacle Right Angle Size 1 15p Reversed-D Shape Type	Tine L=2.80 mm, Shell : Tin Pl.
353950-☐	Receptacle Right Angle Size 1 15p Reversed-D Shape Type	Tine L=1.80 mm, Shell : Nickel Pl.

Appendix 1

The difference of the thickness of gold-plating is classified by the suffix square.

4. Quality Assurance Provisions

4.1 Test Specimens

4.1.1 The specimens to be used in the test shall be conforming to the applicable product drawing (s).

4.1.2 No sample shall be reused unless otherwise specified

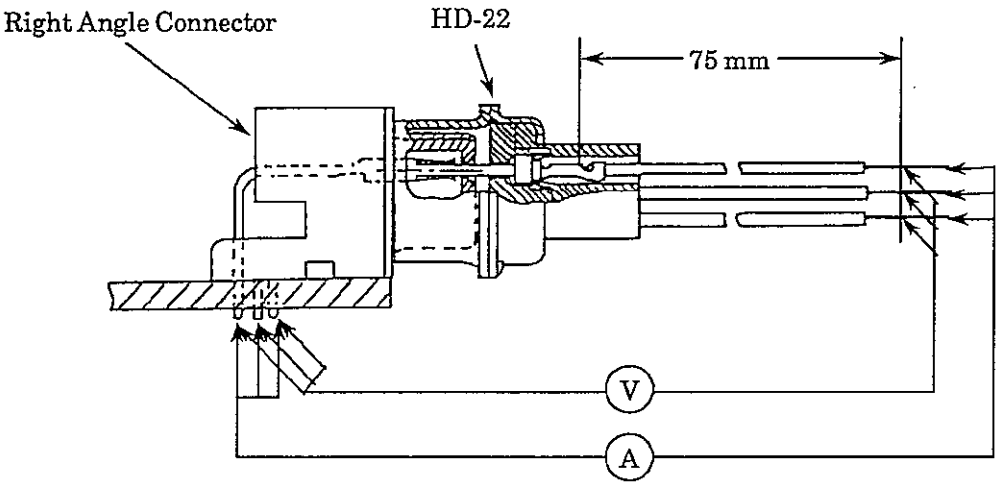
4.2 Test Conditions :

All the tests shall be performed under any combination of the following test conditions.

Temperature : 15~35 °C

Relative humidity : 45~75 %

Atmospheric Pressure : 650~800 mmHg



Termination resistance shall be found by subtracting the resistance of 75 mm long wire from the measured value.

Fig. 3 Termination Resistance (Low Level) Measuring Point