

NUMBER: 108-5378

NUMBER:

Customer Release

SECURITY CLASSIFICATION:

Product Specification

108-5378

AMP MODU 2 mm Pitch Connector SMT Type Post HDR, B To B.

This specification may change without notice as a result of product design change and product evaluation testing.

1. Scope:

1.1 Contents:

This specification covers the requirements for product performance, test methods and quality assurance provisions of SMT 0.5 mm SQ Post HDR & Receptacle Assembly Vertical Type.

The applicable product descriptions and part number are as follows:

Part Number	Descriptions
<input type="checkbox"/> -178925- <input type="checkbox"/>	SMT Type Post HDR, 52 Pos.
<input type="checkbox"/> -179523- <input type="checkbox"/>	SMT Type Post HDR, 50 Pos.
<input type="checkbox"/> -178714- <input type="checkbox"/>	Receptacle Assembly, 52 Pos.
<input type="checkbox"/> -176135- <input type="checkbox"/>	Receptacle Assembly, 50 Pos.


Fig. 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. 501-5042 Qualification Test Report

					DR	7-Apr-'92	SHEET 1 OF <u>7</u>	 AMP (Japan), Ltd. Kawasaki, Japan			LOC	LOC	NO.	REV.
					I. ENOMOTO						J	A	108-5378	A
					CHK.	8-Apr-'92								
					Y. YOSHIMURA									
	A	Revised F100-1091-93	<i>Y.F.</i>	<i>13-DEC-1993</i>	APP.	8-Apr-'92	NAME	AMP MODU 2 mm Pitch Connector SMT Type Post HDR, B To B.						
	O ₁	Release RFA-2000	I.E	Y.Y	7/14/92		N. NAKAMURA							
PRINT	LTR	REVISION RECORD	DR	CHK	DATE									

2.2 Military Standard and Specifications :

MIL-STD-202 Test Methods Electronic and Electrical Component Parts

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: Post; Material: Brass

Finish: 0.0001 mm Min. Thick Gold-Plated on contact area only over nickel underplated.

Tin-lead plating or soldering area.

Receptacle Contact; Material: Phosphor Bronze.

Finish: 0.0002 mm Min. Thick Gold-Plated on contact area only over nickel underplated.

Tin-lead plating or soldering area.

B. Housing: Post Support Housing, Receptacle Housing

Material; Thermoplastic molded compound

Flammability; UL- 94 V-0

3.3 Ratings :

A. Voltage Rating: 200 VAC

B. Current Rating: 1 A, Per Contact

C. Temperature Rating: -40 °C to 105 °C

3.4 Performance and Test Descriptions :

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

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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	Visually, dimensionally and functionally inspected per applicable inspection plan.
Electrical Requirements			
3.5.2	Termination Resistance (Low Level)	30 mΩ max. (Initial) 30 mΩ max. (Final) or $\Delta R = 20 \text{ m}\Omega$ max. (Final)	Subject mated contacts assembled in housing to closed circuit current of 50 mA max. at open circuit voltage of 50 mV max. Fig. 4. AMP Spec. 109-5306
3.5.3	Dielectric Strength	Connector must withstand test potential of 650 kVAC for 1 minute. Current leakage must	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the unmated connectors. MIL-STD-202, Method 301
3.5.4	Insulation Resistance	1000 MΩ min. (Initial) 1000 MΩ min. (Final)	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the unmated connector. MIL-STD-202, Method 302, Condition B
3.5.5	Vibration	No electrical discontinuity greater than 100 nsec microsecond (s) shall occur.	Subject mated connectors to 10-500 Hz traversed in 15 minute with 10 G accelerated velocity ; 2 hours each of 3 mutually perpendicular planes. MIL-STD-202, Method 204 Condition A

Fig. 2 (To be continued)

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Para.	Test Items	Requirements	Procedures
3.5.6	Physical Shock	No electrical discontinuity greater than 100 nsec microsecond (s) shall occur.	Subject mated connectors to 50 G's sawtooth shock pulses of 11 millisecond duration ; 3 shocks in each direction applied along the 3 mutually perpendicular planes totally 18 shocks ; MIL-STD-202, Method 213, Condition A
3.5.7	Connector Mating Force	170 g max. (initial) per contact	After applying 3 cycles mating / unmating preconditioning, measure the force required to mate connector by operating at 100 mm a minute. Record by using autograph. Calculate value for a contact. AMP Spec. 109-5206
3.5.8	Connector Unmating Force	20 g min. (initial) per contact	After applying 3 cycles of mating / unmating preconditioning, using autograph measure the force required to unmate connector by operating at 100 mm a minute. Calculate value for a contact. AMP Spec. 109-5206
3.5.9	Durability (Repeated Mate/Unmating)	No abnormalities shall be present. The requirements per Para 3.5.2, 3.5.7, 3.5.8 shall be met.	Mate and unmate connectors for 200 cycles at a maximum rate of 500-600 cycles/hour :
Environmental Requirements			
3.5.10	Thermal Shock	No physical abnormalities shall be present. The requirement per Para 3.5.2 shall be met.	Subject mated connectors to 5 cycles between - 40 °C and 105 °C. MIL-STD-202, Method 107, Condition A

Fig. 2 (To be continued)

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NUMBER: 108-5378 SECURITY CLASSIFICATION: Customer Release	Para.	Test Items	Requirements	Procedures
	3.5.11	Humidity-Temperature Cycling	No physical abnormalities shall be present. The requirement per Para 3.5.2, 3.5.3, 3.5.4 shall be met.	Subject mated connector to 10 cycles of humidity-temperature changes between 25 °C & 65 °C at 95 % R.H. MIL-STD-202, Method 106.
	3.5.12	Salt Spray	The requirement per Para 3.5.2 shall be met.	Subject mated / unmated connectors to 5 % salt concentration for 96 hours. MIL-STD-202, Method 101, Condition B.
	3.5.13	Sulfurous Acid Gas Exposure	The requirement per Para 3.5.2 shall be met.	Subject mated connectors to sulfurous Acid gas test exposure under the following condition. Sulfurous Acid Gas : 10 ± 3 ppm, 90 % min. RH, Room Temperature, Duration : 24 hours. Recondition for 1 hour in the room temperature before measurement AMP Spec. 109-85
3.5.14	Resistance to Reflow Soldering Heat and Solderability (Applicable to SMT Post Header Only)	Housing shall be free from deformation and fusion, and soldered area shall from normal fillets.	Preheat : 100 °C to 150 °C : 60 sec Min. Reflow heat : 210 °C Max. : 30 sec Max. Peak Temperature : 240 °C Max. (P.C.B Ssurface) Thickness of cream solder to be 0.15 mm.	

Fig. 2 (End)

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3.6 Product Qualification and Requalification Tests.

Test or Examination	Test Group (a)							
	1	2	3	4	5	6	7	8
Examination of Product	1, 9	1, 9	1, 5	1, 5	1, 5	1, 5	1, 5	1, 3
Termination Resistance, Dry Circuit	2, 6	2, 8	2, 4	2, 4	2, 4	2, 4	2, 4	
Dielectric Withstanding Voltage	4, 8							
Insulation Resistance	3, 7							
Vibration			3					
Physical Shock				3				
Mating Force		3, 6						
Unmating Force		4, 7						
Durability		5						
Thermal Shock					3			
Humidity-Temperature Cycling	5							
Corrosion, Salt Spray						3		
Sulfous Acid Gas Exposure							3	
Resistance to Reflow Soldering Heat and Solderability (Applicable to SMT Post Header Only)								2

Fig. 3

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

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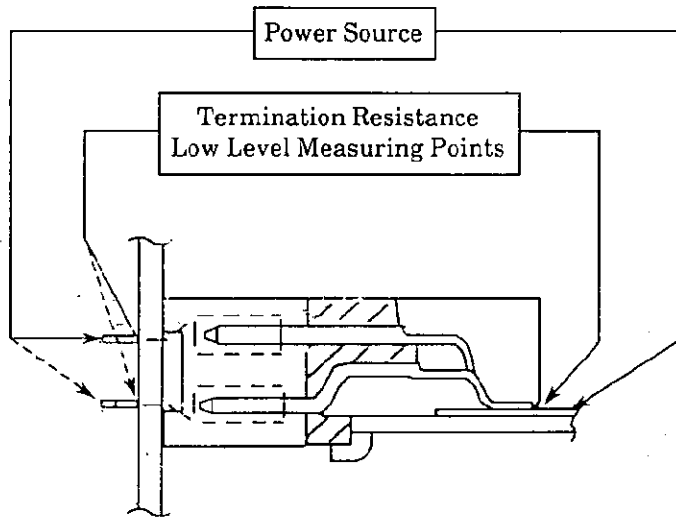


Fig. 4 Termination Resistance (Low Level) Measuring Points

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