

Product Specification

108-5507

AMP PC Card Connector Post Header

1. Scope :

1.1 Contents

This specification covers the requirements for product performance, test methods and quality assurance provisions of AMP PC Card Connector Post Header.

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

PC Card which mated with these products must be according to PC Card Standard (PCMCIA/JEIDA).

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- 5190 Test Report :

2.2 Commercial Standards and Specifications :

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

PC Card Standard PCMCIA/JEIDA

PRINT DIST					DR.	17 Jan. '95	SHEET 1 OF 9	AMP AMP (Japan), Ltd. Kawasaki, Japan		
					Y. Yamamoto					
					CHK.	17 Jan. '95				
					Y. Yamamoto					
	C	Revised FJ00-4403-95	J. T	27	28/9/95		LOC	LOC	NO	REV.
	B	Revised FJ00-3401-95	Y. Y	T I	28/9/95		J	A	108-5507	C
A	Revised FJ00-3401-95	Y. Y	Y Y	7.2'95	APP.	17 Jan. '95	NAME			
0	Released FJ00-3401-95	Y. Y	Y Y	17/1/95		Y. Yoshimura	AMP PC Card Connector Post Header			
LTR	REVISION RECORD	DR	CHK	DATE						

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3. Requirements :

3.1 Design and Construction :

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

3.2 Materials :

A. Contact, Ground Plate :

Material : Copper Alloy

Finish : 0.0003 mm Gold Min in contact area over 0.0013 mm Min Nickel underplate all over, 0.001 mm Min Tin-lead on solder leads.

B. Housing, Tine Plate :

Material : Thermo plastic, color-black

Flammability : UL 94 V-0

3.3 Ratings :

A. Voltage Rating : 100 VAC

B. Current Rating : 0.5 A Max. per position

C. Temperature Rating : - 20 °C to + 60 °C (Operating)
- 40 °C to + 70 °C (Storage)

D. Durability : 5000 cycles Max (Harsh Environment)
10000 cycles Max (Office Environment)

3.4 Performance and Test Descriptions :

The product shall be designed to meet the electrical, mechanical and environmental performance requirements specified in Fig. 1. All tests shall be 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 and Application Specification .	Visual inspection No physical damage
Electrical Requirements			
3.5.2	Termination Resistance (Low Level)	40 mΩ Max. (Initial) $\Delta R = 20 \text{ m}\Omega$ Max. (Final)	Subject mated contacts assembled in housing to closed circuit current of 10 mA Max. at open circuit voltage of 20 mV Max. Obtain resistance value by dividing the measured reading into two. Fig. 5 AMP Spec. 109-5306
3.5.3	Dielectric Strength	No creeping discharge nor flashover shall occur. Current leakage : 1 mA Max.	500 VAC for 1 minute. Test between adjacent circuits of unmated connectors. MIL-STD-202 F, Method 301
3.5.4	Insulation Resistance	1000 mΩ Min. (Initial) 100 mΩ Min. (Final)	500 VDC Measure by applying test potential between the adjacent contacts and between the contacts and ground to the unmated connector. MIL-STD-202F, Method 302
3.5.5	Temperature Rising	30 °C Max. under loaded specified current.	Measure temperature rising by energized current. AMP Spec. 109-5310
Physical Requirements			
3.5.6	Connector Mating Force	68 Pos. : 39.2 N (4 kgf) Max. (Initial)	Operation Speed : 100 mm / min. Measure the force required to mate connectors. AMP Spec. 109-5206
3.5.7	Connector Unmating Force	68 Pos. : 6.67 N (0.68 kgf) Min. (Initial)	Operation Speed : 100 mm / min. Measure the force required to unmate connectors. AMP Spec. 109-5206

Fig. 1 (To be continued)

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Para.	Test Items	Requirements	Procedures
3.5.8	Post Retention Force	9.8 N (1 kgf) Min.	Measure the post retention force by operating at a rate of 100 mm a minute.
3.5.9	Vibration (High Frequency)	No electrical discontinuity greater than 0.1 μ sec. shall occur. ΔR 20 m Ω Max. (Final)	Putting on ejector, Vibration Frequency : 10~500~10 / 20 min. Accelerated Velocity : 98 m/sec ² (10 G) Vibration Direction : X, Y, Z Duration : 3 hours each MIL-STD-202F, Method 204 D Condition B
3.5.10	Physical Shock	No electrical discontinuity greater than 0.1 microsecond shall occur. ΔR 20 m Ω Max. (Final)	Putting on ejector, Acceleration : 490 m/sec ² (50 G) Duration : 11 msec. Change of Speed : 18 m/sec. Number of Drops : 3 drops each to normal and reversed directions of X, Y and Z axes, totally 18 drops MIL-STD-202F, Method 213 B Condition A
3.5.11	Durability (Repeated Mate/Unmating) (Office Environment)	ΔR 20 m Ω Max. (Final)	Putting on ejector, Operation Speed : 400 to 600 cycles per hour. No. of Cycles : 10000 cycles. Fig. 4.
3.5.12	Durability (Repeated Mate/Unmating) (Harsh Environment)	ΔR 20 m Ω Max. (Final)	Putting on ejector, Operation Speed : 400 to 600 cycles per hour. No. of Cycles : 5000 cycles. Fig. 3.

Fig. 1 (To be continued)

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Para.	Test Items	Requirements	Procedures
Environmental Requirements			
3.5.13	Solderability	Wet Solder Coverage : 95% Min.	Solder Temperature : $235^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Immersion Duration : 5 sec. ± 0.5 sec. Flux : Alpha 100 AMP Spec. 109-5203
3.5.14	Resistance to Soldering Heat	No physical damage shall occur.	Test connector on PCB. Solder Temperature : $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Immersion Duration : 10 sec. ± 1 sec. AMP Spec. 109-5204
3.5.15	Humidity (Humidity-Temperature Cycling)	Insulation resistance 100 M Ω Min. Termination resistance ΔR 20 m Ω Max. (Final)	Mated Connector, $25 \sim 65^{\circ}\text{C}$, 95 % R.H. 10 cycles MIL-STD-202F Method 106E
3.5.16	Thermal Shock	Insulation resistance 100 M Ω Min. ΔR 20 m Ω Max. (Final)	Mated Connector, $-55^{\circ}\text{C} / 30$ min., $85^{\circ}\text{C} / 30$ min. Making this a cycle, repeat 5 cycles. MIL-STD-202F Method 107G Condition A
3.5.17	Temperature Life (Heat Aging)	$\Delta R = 20$ m Ω Max. (Final)	Mated Connector, 85°C , Duration : 250 hours MIL-STD-202F, Method 108A Condition : B
3.5.18	Resistance to Cold	$\Delta R = 20$ m Ω Max. (Final)	Mated connector $-55^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 96 hours AMP Spec. 109-5108
3.5.19	Humidity, Steady State	Insulation resistance 100 M Ω Min. (Final) $\Delta R = 20$ m Ω Max. (Final)	Mated connector 90~95% R.H. $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$, 96 hours MIL-STD-202F Method 103B Condition : B
3.5.20	Industrial Gas (H ₂ S)	$\Delta R = 20$ m Ω Max. (Final)	Mated connector H ₂ S Gas : 3 ppm, 80% R.H. 40°C 96 hours

Fig. 1 (End)

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3.6 Product Qualification Test Sequence

Test Item	Test Group										
	1	2	3	4	5	6	7	8	9	10	11
	Test Sequence (a)										
Confirmation of Product	1, 9	1, 3	1, 4	1, 3	1, 6	1, 5	1, 8	1, 3	1, 6	1, 5	1, 5
Termination Resistance (Low Level)	2, 6				2, 5	2, 4	2, 7		2, 5	2, 4	2, 4
Dielectric Strength	4, 8										
Insulation Resistance	3, 7						5		4		
Temperature Rising		2									
Connector Mating Force			2								
Connector Unmating Force			3								
Post Retention Force				4							
Vibration (High Frequency)					3						
Physical Shock					4						
Durability (Repeated Mate / Unmating) (Office Environment)						3					
Durability (Repeated Mate / Unmating) (Harsh Environment)							3				
Solderability								2			
Resistance to Soldering Heat				2							
Humidity-Temperature Cycling	5										
Thermal Shock									3		
Temperature Life (Heat Aging)										3	
Resistance to Cold											3
Humidity, Steady State							4				
Industrial Gas							6				

Fig. 2

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

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CLASSIFICATION:Test Sequence:

1,000-cycles Insertion / Extraction



Humidity-Temperature Cycling Test

(Para. No. 3.5.19 Steady State, 96 Hr)



1,000-cycles Insertion / Extraction

2,000-cycles Insertion / Extraction



Humidity-Temperature Cycling Test

(Para. No. 3.5.19 Steady State, 96 Hr)



3,000-cycles Mating / Unmating

5,000-cycles Insertion / Extraction



Humidity-Temperature Cycling Test

(Para. No. 3.5.19 Steady State, 96 Hr)

Hydrogen Chloride Test (3.5.20, 96 Hr)

Requirements:Termination Resistnace (Low-Level)
specified in Para. No. 3.5.2.Specimen:

Mated Connectors

Insertion / Extraction Test Conditioning:

Putting on ejector

Repeat insertion and extraction at a rate of
400-600 cycles per hour.

Fig. 3 Durability Test (Harsh Environment, 5000 cycles)

Test Sequence:Termination Resistnace (Low-Level)
specified in Para. No. 3.5.2.

10,000-cycleS Insertion / Extraction

Termination Resistnace (Low-Level)
specified in Para. No. 3.5.2.

Fig. 4 Durability Test (Office Environment, 10000 cycles)

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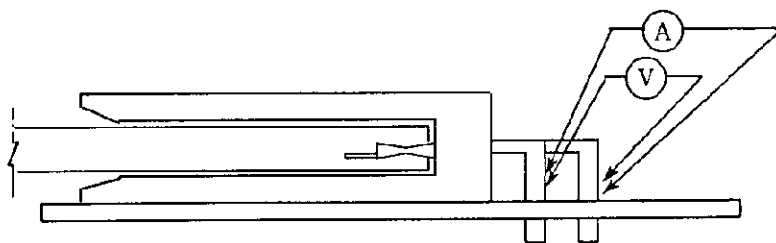
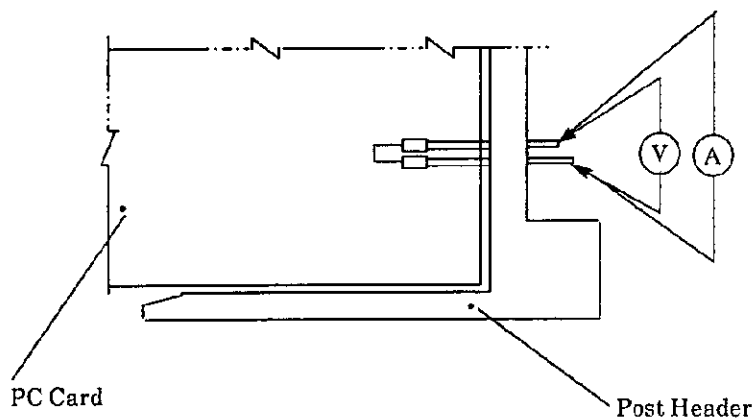
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Fig. 5 Low-level Termination Resistance Measurement

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

Product Part No.	Name
☐ -917550- ☐	Post Header STD. Type (for Card Bus)
☐ -917551- ☐	Post Header O&U Type (for Card Bus)
☐ -917549- ☐	Post Header O&U/R/A Type (for Card Bus)
☐ -917757- ☐	Post Header STD. Type (for Classic)
☐ -917758- ☐	Post Header O&U Type (for Classic)
☐ -917648- ☐	Post Header O&U/R/A Type (for Classic)
☐ -316596- ☐	Post Header STD. Type for Auto (for Card Bus)
☐ -316597- ☐	Post Header O&U Type for Auto (for Card Bus)

Appendix 1.

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