

NUMBER: 108-5386

NUMBER:

Customer Release

SECURITY CLASSIFICATION:

Product Specification

108-5386

AMP Docking Connector

1. Scope :

1.1 Contents

This specification covers the requirements for product performance, test methods and quality assurance provisions of AMP DOCKING CONNECTOR.

Applicable product descriptions 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. 501-5144 Test Report : (Au Pl. THK 0.76 μm)
- C. 501-5182 Test Report : (Au Pl. THK 0.2 μm)

2.2 Commercial Standards and Specifications :

- A. MIL-STD Test Methods for Electronic Component Parts

					DR. 10. Nov. '92	SHEET 1 OF 8	AMP AMP (Japan), Ltd. Kawasaki, Japan			
D	Revised FJ00-1184-97	Y.W	H.K	30.9'97	T. Niwa					LOC J
C	Revised FJ00-4163-96	S.A	T.Y	14.3'96	CHK. 10. Nov. '92					
B	Revised FJ00-3359-95	Y.W	T.Y	17.1095	Y. Fujiura					
A	Revised FJ-00-1844-95	T.Y	Y.F	1.9'95						
0	J-166	T.F	Y.F	12.1192	APP. 10. Nov. '92	NAME				
LTR	REVISION RECORD	DR	CHK	DATE	Y. Fujiura	AMP Docking Connector				

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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 :

Receptacle Contact Copper Alloy, Au plate on contact area and Tin-Lead plate on solder Tine over Ni plate.

Plug Contact Brass, Au plate on contact area and Tin-Lead plate on solder Tine over Ni plate.

B. Housing :

Receptacle Housing	} LCP, UL : 94V-0
Plug Housing		
Tine Plate		

C. Others :

Metal Shell Steel, Ni plate over Cu plate.

G-Plate Brass, Tin-Lead plate over Ni plate or stainless steel.

Retention Leg Brass, Tin-Lead plate over Ni plate.

Guide Pin Brass, Ni plate over Cu plate or stainless steel.

Guide Socket Brass, Ni plate over Cu plate.

3.3 Ratings :

A. Voltage Rating : 250 VAC

B. Current Rating : 0.5 A

C. Temperature Rating : -55 °C to 85 °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 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	Examination of Product	No physical damage	Visual inspection No physical damage.
Electrical Requirements			
3.5.2	Termination Resistance (Low Level)	50 m Ω Max. (Initial) $\Delta R = 25$ m Ω Max. (Final)	Subject mated contacts assembled in housing to closed circuit current of 10 mA Max. at open circuit voltage of 20 mV Max. Fig. 3. AMP Spec. 109-5311-1
3.5.3	Dielectric Strength	No creeping discharge nor flashover shall occur. Current leakage : 0.5 mA Max.	0.5 kVAC for 1 minute. Test between adjacent circuits of mated. AMP Spec. 109-5301
3.5.4	Insulation Resistance	500 M Ω Min. (Initial) 100 M Ω Min. (Final)	Impressed voltage 500 V DC. Test between adjacent circuits of mated. AMP Spec. 109-5302
3.5.5	Temperature Rising	30 °C Max. under loaded Current Rating (0.5A)	Measure temperature rising by energized current. Fig. 3 AMP Spec. 109-5310-1
Physical Requirements			
3.5.6	Vibration (Frequency)	No electrical discontinuity greater than 1 μ sec. shall occur.	Subject mated connectors to 10-55-10 Hz traversed in 1 minute at 1.52 mm amplitude 2 hours each of 3 mutually perpendicular planes. 100 mA applied. AMP Spec. : 109-5201

Fig. 1 (To be continued)

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Para.	Test Items	Requirements	Procedures
3.5.7	Connector Mating Force	1 Pos. 0.441 N (0.045 kgf) Max.	Operation Speed : 100 mm / min. Measure the force required to mate connectors. AMP Spec. 109-5206 Condition B
3.5.8	Connector Unmating Force	1 Pos. 0.147 N (0.015 kgf) Min.	Operation Speed : 100 mm / min. Measure the force required to unmate connectors. AMP Spec. 109-5206 Condition B
3.5.9	Physical Shock	No electrical discontinuity grater than 1 μ sec. shall occur.	Accelerated Velocity : 490 m/s ² (50 G) Waveform : Halfsine Duration : 11 m sec. Number of drops : 18 Drops X,Y and Z axes,totaly AMP Spec. 109-5208 Condition B
3.5.10	Durability (Repeated Mate / Unmating)	ΔR 25 m Ω Max. (Final)	Operation Speed : 100 mm / min. No. of Cycles : 5000 cycles. AMP Spec. 109-5213
3.5.11	Solderability	Wet Solder Coverage : 95 % Min.	Solder Temperature : 230 \pm 5 $^{\circ}$ C Immersion Duration : 5 seconds Flux : Alpha 100 AMP Spec. 109-5203
Environmental Requirements			
3.5.12	Resistance to Soldering Heat	No physical damage shall occur.	Test connector on PCB. Solder Temperature : 260 \pm 5 $^{\circ}$ C Immersion Duration : 10 sec. AMP Spec. 109-5204 Condition B
3.5.13	Thermal Shock	ΔR 25 m Ω max. (Final)	-55 $^{\circ}$ C / 30 min. 85 $^{\circ}$ C / 30 min. Making this a cycle, repeat 5 cycles. AMP Spec. 109-5103 Condition A

Fig. 1 (To be continued)

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	3.5.14	Humidity-Temperature Cycling	Insulation resistance 100 M Ω Min. Termination resistance ΔR 25 m Ω Max. (Final)	Mated Connector, 25~65 °C, 90~95 % R.H. 10 cycles Cold shock -10 °C AMP Spec. 109-5106
	3.5.15	Humidity, Steady State	Insulation resistance (Final) 100 M Ω Min. Termination resistance ΔR 25 m Ω Max. (Final)	Mated Connector, 90~95 % R.H. 40 °C 96 hours AMP Spec. 109-5105-1 Condition A
	3.5.16	Salt Spray	ΔR 25 m Ω Max. (Final)	Subject mated connectors to 5 % salt concentration for 48 hours : MIL-STD-202, Method 101 AMP Spec. 109-5101 Condition A
	3.5.17	Industrial Gas (SO ₂)	ΔR 25 m Ω Max. (Final)	SO ₂ Gas : 10 ppm, 75 % R. H., 25 °C 48 hours AMP Spec. 109-5107
3.5.18	Temperature Life (Heat Aging)	ΔR 25 m Ω Max. (Final)	85 °C, 250 hours AMP spec. 109-5104-2 Condition C	

Fig. 1 (End)

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4. Product Qualification Test Sequence

Test Items	Test Group											
	1	2	3	4	5	6	(b) 7	8	9	10	11	12
	Test Sequence (a)											
Examination of Product	1, 7	1, 5	1, 5	1, 5	1, 5	1	1, 6	1	1, 3	1, 3	1, 3	1, 5
Termination Resistance (Low Level)	2, 6	2, 4	2, 4	2, 4	2, 4	2, 4	2, 5					2, 4
Dielectric Strength								2, 5				
Insulation Resistance								3, 6				
Temperature Rising									2			
Vibration (Frequency)							3					
Physical Shock							4					
Connector Mating Force	3											
Connector Unmating Force	4											
Durability (Repeated Mate / Unmating)	5											
Solderability										2		
Resistance to Soldering Heat											2	
Thermal Shock			3									
Humidity, Temperature Cycling		3						4				
Salt Spray						3						
Industrial Gas (SO ₂)					3							
Temperature Life (Heat Aging)				3								
Humidity, Steady State												3

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

(b) Discontinuities shall not take place in this test group, during tests.

Fig. 2

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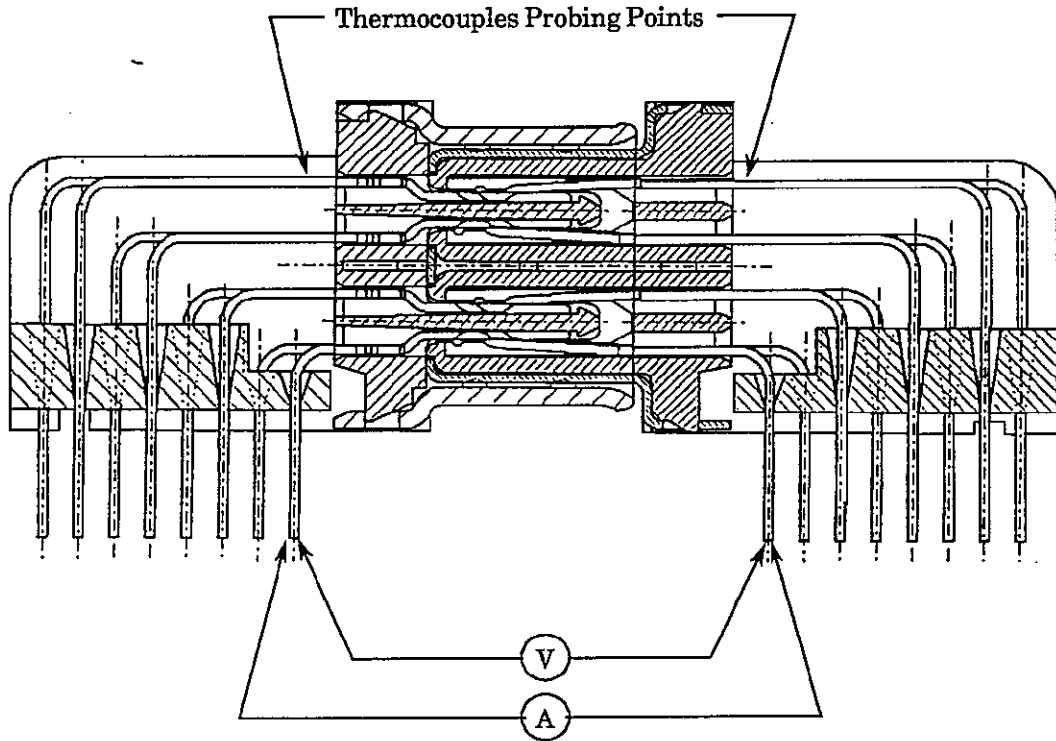


Fig. 3

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

Product Part No.	Description
<input type="checkbox"/> -177721- <input type="checkbox"/>	Receptacle Connector Horizontal Type
<input type="checkbox"/> -179081- <input type="checkbox"/>	Receptacle Connector Horizontal Type
<input type="checkbox"/> -179136- <input type="checkbox"/>	Receptacle Connector Horizontal Type
<input type="checkbox"/> -917301- <input type="checkbox"/>	Receptacle Connector Horizontal Type
<input type="checkbox"/> -917043- <input type="checkbox"/>	Receptacle Connector Horizontal Type
<input type="checkbox"/> -179135- <input type="checkbox"/>	Receptacle Connector Horizontal Type
<input type="checkbox"/> -917042- <input type="checkbox"/>	Receptacle Connector Horizontal Type
<input type="checkbox"/> -179153- <input type="checkbox"/>	Receptacle Connector Horizontal Type
<input type="checkbox"/> -179154- <input type="checkbox"/>	Receptacle Connector Horizontal Type
<input type="checkbox"/> -179438- <input type="checkbox"/>	Receptacle Connector Horizontal Type
<input type="checkbox"/> -917538- <input type="checkbox"/>	Receptacle Connector Horizontal High Profile Type
<input type="checkbox"/> -917537- <input type="checkbox"/>	Receptacle Connector Horizontal High Profile Type
<input type="checkbox"/> -316524- <input type="checkbox"/>	Receptacle Connector Horizontal Type
<input type="checkbox"/> -177729- <input type="checkbox"/>	Plug Connector Horizontal Type
<input type="checkbox"/> -179079- <input type="checkbox"/>	Plug Connector Horizontal Type
<input type="checkbox"/> -179141- <input type="checkbox"/>	Plug Connector Horizontal Type
<input type="checkbox"/> -917045- <input type="checkbox"/>	Plug Connector Horizontal Type
<input type="checkbox"/> -917302- <input type="checkbox"/>	Plug Connector Horizontal Type
<input type="checkbox"/> -179139- <input type="checkbox"/>	Plug Connector Horizontal Type
<input type="checkbox"/> -917044- <input type="checkbox"/>	Plug Connector Horizontal Type
<input type="checkbox"/> -179155- <input type="checkbox"/>	Plug Connector Horizontal Type
<input type="checkbox"/> -179156- <input type="checkbox"/>	Plug Connector Horizontal Type
<input type="checkbox"/> -177814- <input type="checkbox"/>	Plug Connector Vertical Type
<input type="checkbox"/> -179080- <input type="checkbox"/>	Plug Connector Vertical Type
<input type="checkbox"/> -179579- <input type="checkbox"/>	Plug Connector Vertical Type
<input type="checkbox"/> -179140- <input type="checkbox"/>	Plug Connector Vertical Type
<input type="checkbox"/> -179157- <input type="checkbox"/>	Plug Connector Vertical Type
<input type="checkbox"/> -179439- <input type="checkbox"/>	Plug Connector Vertical Type
<input type="checkbox"/> -179517- <input type="checkbox"/>	Plug Connector Vertical Type
<input type="checkbox"/> -316526- <input type="checkbox"/>	Plug Connector Vertical Type
<input type="checkbox"/> -316586- <input type="checkbox"/>	Plug Connector Vertical Type
<input type="checkbox"/> -353902- <input type="checkbox"/>	Plug Connector Vertical Type

SHEET

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