

NUMBER: 108-5588-1

SECURITY CLASSIFICATION: Customer Release

Design Objectives

The product described in this document has not been fully tested to ensure conformance to the requirements outlined below. Therefore, AMP (Japan), Ltd makes no representation or warranty, express or implied, that the product will comply with these requirements. Further, AMP (Japan), Ltd. may change these requirements based on the results of additional testing and evaluation. Contact AMP Engineering for further details.

In case when "product specification" is referred to in this document, it should be read as "design objectives" for all times as applicable.

Design Objectives

108-5588-1

0.6 mm Pitch Card Edge Connector · SMT Type

- 1. Scope
- 1.1 Contents

This specification covers the requirements for product performance, and test methods provisions of 0.6 mm Pitch Card Edge Connector · SMT Type.

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

DESCRIPTIONS	PRODUCT PART NO.
0.6 mm Card Edge Connector	Connector : 1123088-1
	Tray Packing : 1123215-1

Fig. 1

PRINT	DIST.	0	Release FJ00-1609-97	S.T	RK	17/Feb/98	DR.	S. Goda	SHEET	1	OF	8	AMP AMP (Japan), Ltd. Kawasaki, Japan		
							CHK.								
LTR	REVISION RECORD	DR	CHK	DATE	APP.	17/Feb/98	H. KODAMA	NAME	0.6 mm Pitch Card Edge Connector · SMT Type						

2-17-98

NUMBER: 108-5588-1

Customer Release

SECURITY CLASSIFICATION:

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- Test Report

2.2 Military Standard and Specifications :

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

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

Material : Copper Alloy
 Finish : All over Ni under plating (1.3 μm Min.),
 Contact area : gold plating (0.2 μm Min.)
 Tine area : gold plating (0.05~0.13 μm Min.)

B. Housing

Material : LCP

C. Accessories, Mounting Hardware etc.,

Connector Fixture Hardware : Material : Copper Alloy
 Finish : Tin-Lead plating (2 μm Min.)

D. Apply to PWB : Material: FR-4

Finish : Ni under plating (3 μm Min.), Gold Flash Plating (0.05 μm Ave.)

SHEET 2 OF 8	AMP AMP (Japan), Ltd. Kawasaki, Japan			REV. 0
	LOC J	LOC A	NO. 108-5588-1	
NAME 0.6 mm Pitch Card Edge Connector · SMT Type				

NUMBER: 108-5588-1

Customer Release

SECURITY CLASSIFICATION:

3.3 Ratings

- A. Voltage Rating : 25 VDC
- B. Current Rating : 0.5 A / Contact.
- C. Temperature Rating : -25 °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.

For Environmental Requirements, recondition in the room temperature 1 hour before subsequent measurement.

3.5 Test Requirement and Procedures Summary

Para.	Test Items	Requirements	Procedures
3.5.1	Confirmation of Product	No physical damage.	Visual inspection. No physical damage.
Electrical Requirements			
3.5.2	Termination Resistance (Low Level)	30 mΩ max. (Initial) 50 mΩ max. (Final)	Subject mated contacts assembled in housing to closed circuit current of 50 mA max. at open circuit voltage of 100 mV max. Fig. 5
3.5.3	Insulation Resistance	100 MΩ min. (Initial) 50 MΩ min. (Final)	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connector. MIL-STD-202, Method 302, Condition A (100 VDC ± 10 %)
3.5.4	Dielectric Strength	Connector must withstand test potential of 250 VAC for 1 minute. Current leakage must be 0.5 mA max.	Measure by applying test potential between the adjacent contacts, and between the contacts and ground in the mated connectors.

Fig. 2 (To be continued)

SHEET 3 OF 8	AMP		AMP (Japan), Ltd. Kawasaki, Japan	
	LOC J	LOC A	NO. 108-5588-1	REV. 0
NAME 0.6 mm Pitch Card Edge Connector · SMT Type				

NUMBER: 108-5588-1

SECURITY CLASSIFICATION: Customer Release

Para.	Test Items	Requirements	Procedures
3.5.5	Temperature Rising	30 deg. max. under loaded specified current	Contacts series-wired, apply test current of 0.5 A DC to the circuit, and measure the temperature rising by probing on soldering areas on contact.
Physical Requirements			
3.5.6	Vibration Sinusoidal Low Frequency	No electrical discontinuity greater than 1 microsecond (s) 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. 10 mA applied. MIL-STD-202, Method 201
3.5.7	Physical Shock	No electrical discontinuity greater than 1 μ sec. shall occur. Termination Resistance (Low Level) (Final) 50 m Ω max.	Wire-inserted condition of the connectors to 50 G's halfsine shock pulses off 11 millisecond duration ; 3 shocks in each direction applied along the 3 mutually perpendicular planes. 100 mA applied. Fig. 4 MIL-STD-202, Method 213, Condition A
3.5.8	PWB Insertion Force	0.686 N (70 gf) max. (Initial) per contact Fig. 4	Using autograph, measure the force required to mate connector by operating at 100 mm a minute.
3.5.9	PWB Extraction Force	0.098 N (10 gf) min. (Initial) per contact Fig. 4	Using autograph measure the force required to unmate connector by operating at 100 mm a minute.
3.5.10	Contact Retention Force	1.96 N (0.2 kgf) min.	Apply an axial pull-off load to contact. Operation Speed : 100 mm / min.
3.5.11	Durability (Repeated Mate / Unmating)	Termination Resistance (Low Level) (Final) 50 m Ω max.	Mate and unmate connectors for 20 cycles. 0.84 mm THK PWB.

Fig. 2 (To be continued)

SHEET 4 OF 8	AMP			AMP (Japan), Ltd. Kawasaki, Japan	
	LOC J	LOC A	NO. 108-5588-1	REV. 0	
NAME 0.6 mm Pitch Card Edge Connector · SMT Type					

NUMBER: 108-5588-1 SECURITY CLASSIFICATION: Customer Release	Para.	Test Items	Requirements	Procedures
	3.5.12	Solderability	Appearance of the specimen shall be inspected after the test with the assistance of a magnifier capable of giving a magnification of 10× for any damage such as pinholes, void or rough surface.	Provisional standards of EIA of JAPAN. RCX-0102/101 (Test methods of soldering of surface mounting devises) Para 2.4.2 (Reflow soldering method).
	3.5.13	Resistance to Soldering Heat	Appearance of the specimen shall be inspected after the test with the assistance of a magnifier capable of giving a magnification of 10× for damage such as cracks, chips or melting.	Provisional standards of EIA of JAPAN. RCX-0102/102 (Test methods of soldering of surface mounting devises) Para 3.3.4 (Hi-temp oven method)
	Environmental Requirements			
	3.5.14	Thermal Shock	Termination Resistance ; 50 mΩ max.	Subject mated connectors to 25 cycles between -55±3 °C / 30 minutes and +85±2 °C / 30 minutes MIL-STD-202, Method 107 Condition A-1.
	3.5.15	Humidity - Temperature Cycling	Insulation Resistance (Final) 50 MΩ min. Termination Resistance (Low Level) (Final) 50 mΩ max.	Subject mated connectors to 10 cycles of humidity-temperature changes between 25 °C and 65 °C at 95 % R.H. MIL-STD-202, Method 106, (without low frequency vibration, and cold shock at -10 °C)
3.5.16	Humidity, Steady State	Insulation Resistance (Final) 50 MΩ min. Termination Resistance (Low Level) (Final) 50 mΩ max.	Subject mated connectors to steady state humidity at 40 °C and 90-95 % R.H. MIL-STD-202, Method 103, Condition C. (500 HRS)	

Fig. 2 (To be Continued)

SHEET 5 OF 8	AMP			AMP (Japan), Ltd. Kawasaki, Japan	
	LOC J	LOC A	NO. 108-5588-1	REV. 0	
NAME 0.6 mm Pitch Card Edge Connector - SMT Type					

NUMBER: 108-5588-1
 SECURITY CLASSIFICATION: Customer Release

Para.	Test Items	Requirements	Procedures
3.5.17	Temperature Life	Termination Resistance (Low Level) (Final) - 50 mΩ max.	Subject mated connectors to temperature life ; 85 ± 2 °C MIL-STD-202, Method 108 Condition C. (500 HRS)
3.5.18	Resistance to Cold	Termination Resistance (Low Level) (Final) 50 mΩ max.	- 40 ± 3 °C, 500 hours
3.5.19	Sulfurous Acid Gas Resistivity	Tested sample shall show no evidence of abnormalities in appearance. Termination Resistance (Low Level) (Final) 50 mΩ max.	Under the sulfurous acid gas atmosphere of 10 ± 3 ppm SO ₂ concentration at 90% R.H. min. for 96 hours.

Note : Tested products shall be conforming to the requirements of the visual inspection without physical damage, also meeting the requirements of the additional tests specified in the sequence tests specified in Fig. 3.

Fig. 2 (End)

SHEET 6 OF 8	AMP AMP (Japan), Ltd. Kawasaki, Japan		
	LOC J	LOC A	NO. 108-5588-1
REV. 0			
NAME 0.6 mm Pitch Card Edge Connector · SMT Type			

NUMBER: 108-5588-1

SECURITY CLASSIFICATION: Customer Release

3.6 Product Qualification and Requalification Tests.

Test of Examination	Test Group (a)															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	Test Sequence															
Examination of Product	1, 4	1, 3	1, 5	1, 5	1, 4	1	1, 5	1, 3	1, 3	1, 5	1, 5	1, 5	1, 5	1, 5	1, 5	
Termination Resistance, Dry Circuit			2, 4	2, 4			2, 4			2, 4	2, 4	2, 4	2, 4	2, 4	2, 4	
Insulation Resistance	2										6	6				
Dielectric Withstanding Voltage	3															
Temperature Rise		2														
Vibration			3													
Physical Shock				3												
PWB Insertion Force					2											
PWB Extraction Force					3											
Contact Retention Force						2										
Humidity-Temperature Cycling							2									
Durability								3								
Solderability									2							
Resistance to Soldering Heat										2						
Thermal Shock											3					
Humidity-Temperature Cycling												3				
Humidity, Steady State													3			
Temperature Life														3		
Resistance to Cold															3	
Sulfurous Acid Gas Resistivity																3

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

Fig. 3

SHEET 7 OF 8	AMP			AMP (Japan), Ltd. Kawasaki, Japan	
	LOC J	LOC A	NO. 108-5588-1	REV. 0	
NAME 0.6 mm Pitch Card Edge Connector · SMT Type					

NUMBER: 108-5588-1

NUMBER:

Customer Release

SECURITY CLASSIFICATION:

4. Quality Assurance Provisions

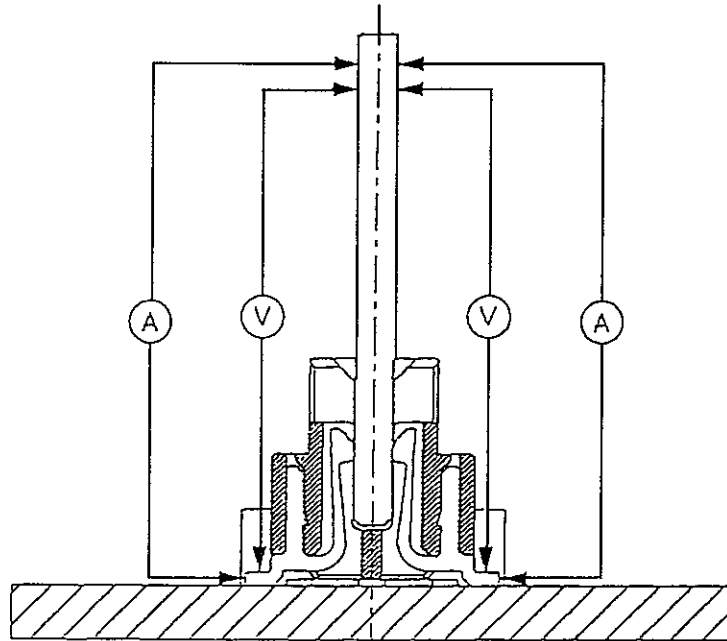
4.1 Qualification Testing

A. Sample Selection

Connector and PWB shall be prepared in accordance with applicable Instruction Sheets. They shall be selected at random from current production.

PWB Force/Extraction Force		kg
No. of Pos.	Mating Force (max.) N (kg)	Unmating Force (min.) N (kg)
150	102.9 (10.5)	14.7 (1.5)

Fig. 4



Obtain termination resistance by calculation after deducting the L length of cable resistance used for termination.

Fig. 5 Method of Termination Measuring

SHEET	AMP AMP (Japan), Ltd. Kawasaki, Japan			
8 OF 8	LOC J	LOC A	NO. 108-5588-1	REV. 0
NAME 0.6 mm Pitch Card Edge Connector · SMT Type				