

NUMBER: 108-5516

CUSTOMER RELEASE

SECURITY CLASSIFICATION:

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

108-5516

**.040 Multilock Connector
(UL 94 V-0)**

1. Scope :

1.1 Contents :

This specification covers the requirements for product performance, test methods and quality assurance provisions of .040 Multilock Connector.


The applicable product descriptions and part number 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. 114-5071 Application Specification, .040 Multilock Connector
- B. 501- Test Report

DR.						DR.	SHEET 1 OF 7	 AMP (Japan), Ltd. Kawasaki, Japan			
						CHK.					LOC J
APP.	A	Revised FJ00-4374-96	K.H.	KD	4/9/86	APP.	NAME .040 Multilock Connector (UL 94 V-0)				
	0	Released FJ00-3772-95	S.U.	A.T.	15 2'96	A. Tomita					
PRINT	LTR	REVISION RECORD	DR	CHK	DATE						

04-09-96

NUMBER: 108-5516 SECURITY CLASSIFICATION: Customer Release	Para.	Test Items	Requirements		Procedures	
	3.5.4	Insulation Resistance	100 M Ω Min. (Initial) 100 M Ω Min. (Final)		Impressed voltage 500 V DC. Test between adjacent circuits of mated connectors. without P.C. Board	
	Mechanical Requirements					
	3.5.5	Crimp Tensile Strength	Wire Size		Crimp Tensil (min.)	Apply an axial pull-off load to crimped wire of contact secured on the tester, Operation Speed : 100 mm / min.
			mm ²	(AWG)	N (kgf)	
			0.3	22	49.0 (5)	
			0.5	20	88.3 (9)	
	3.5.6	Contact Retention Force	49 N (5 kgf) Min.		Apply an axial pull-off load to crimped wire. Operation Speed : 100 mm / min.	
	3.5.7	Contact Unmating Force	0.98~5.88 N (0.1~0.6 kgf)		Measure unmating force using actual tab. Operation Speed : 100 mm/min.	
	3.5.8	Contact Insertion Force	14.7 N (1.5 kgf) Max. per contact		Measure the force required to insert contact into housing.	
3.5.9	Connector Mating Force	8 Pos. : 58.8 N (6 kgf) Max. 12 Pos. : 68.6 N (7 kgf) Max. 16 Pos. : 88.2 N (9 kgf) Max. 20 Pos. : 98 N (10 kgf) Max.		Operation Speed : 100 mm / min. Measure the force required to mate connectors.		
3.5.10	Connector Unmating Force	8 Pos. : 6.9~58.8 N (0.7~6 kgf) 12 Pos. : 12.7~68.6 N (1.3~7 kgf) 16 Pos. : 19.6~88.2 N (2~9 kgf) 20 Pos. : 31.4~98 N (3.2~10 kgf)		Operation Speed : 100 mm / min. Measure the force required to unmate connectors.		
Fig. 1 (Cont')						
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NAME .040 Multilock Connector (UL 94 V-0)						

SECURITY CLASSIFICATION: Customer Release NUMBER: 108-5516	Para.	Test Items	Requirements	Procedures	
	3.5.11	Durability (Repeated Mate/Unmate)	20 mΩ Max. (Final)	Operation Speed : 100 cycle/hr No. of Cycles : 50 cycles.	
	3.5.12	Vibration (Low Frequency)	No electrical discontinuity greater than 1 msec. shall occur. 20 mΩ Max. (Final)	Subject mated connectors to 10-50-10 Hz traversed in 1 minute at 1.52 mm amplitude 8 hours each of 3 mutually perpendicular planes. 100 mA applied. Mounting : Fig. 3	
	3.5.13	Solderability	Wet Solder Coverage : 95 % Min.	Solder Temperature : 235 ± 5 °C Immersion Duration: 5 ± 0.5 seconds Flux : Alpha 100	
	3.5.14	Connector Locking Strength	98 N (10 kgf) Min.	Measure connector locking strength. Operation Speed : 100 mm / min.	
	Environmental Requirements				
	3.5.15	Thermal Shock	20 mΩ Max. (Final)	Mated/Unmated connector -30 °C / 120 min., 80 °C / 120 min. Making this a cycle, repeat 5 cycles. Fig. 2	
	3.5.16	Humidity, Steady State	Insulation resistance (Final) 100 MΩ Min. Termination resistance 20 mΩ Max. (Final)	Mated connector, 90~95 % R. H. 60 °C ± 5 °C 48 hours Fig. 2	
	3.5.17	Salt Spray	20 mΩ Max. (Final)	Subject mated connectors to 5 % salt concentration for 24 hours : Fig. 2	
	3.5.18	Industrial Gas (SO ₂)	20 mΩ Max. (Final)	Mated/unmated connector SO ₂ Gas : 10 ppm, 90 % R. H. MIN. 15~35 °C, 24 hours Fig. 2	
3.5.19	Temperature Life (Heat Aging)	20 mΩ Max. (Final)	Mated connector 120 °C, 96 Hours Fig. 2		
Fig. 1 (End)					
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3.6 Product Qualification and Requalification Tests.

Test or Examination	Test Group								
	1	2	3	4	5	6	7	8	9
	Test Sequence								
Examination of Product	1	1	1	1	1	1	1	1	1
Termination Resistance (Low Level)				2, 4, 6	2, 4	2, 4, 6	2, 4, 6	2, 4	
Dielectric withstanding Voltage			5						
Insulation Resistance			4						
Vibration (Low Frequency)								3	
Connector Mating Force			2						
Connector Unmating Force			3						
Connector Locking Strength					5				
Contact Insertion Force		2							
Contact Retention Force		3							
Contact Unmating Force	2								
Crimp Tensile Strength	3								
Durability (Repeated Mate/Unmateing)				3			3		
Solderability									2
Thermal Shock						3			
Humidity (Steady State)					3				
Salt Spray						5			
Industrial SO ₂ Gas							5		
Temperature Life (Heat Aging)				5					

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

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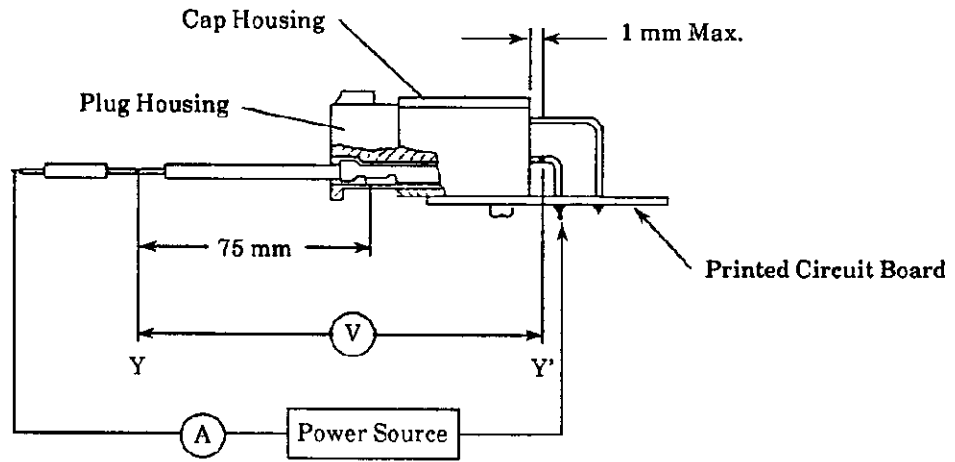


Fig. 2

Wire Length : 150 mm Approx.
(Do not apply tension to the wires.)

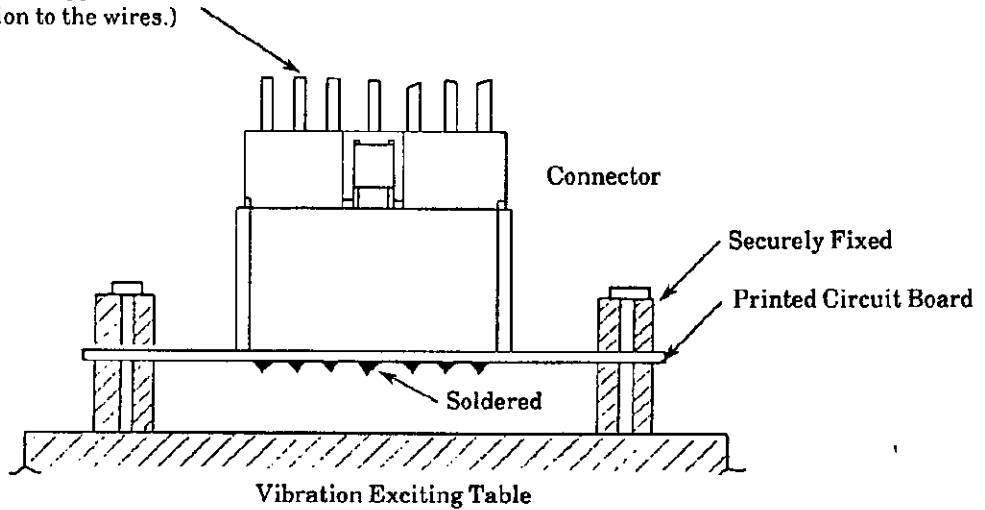


Fig. 3

SHEET 6 OF 7	AMP AMP (Japan), Ltd. Kawasaki, Japan			REV. 0
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The applicable product descriptions and part numbers are as shown in Appendix 1.

Product Part No.	Descriptions
173681	Receptacle Contact
316677	8 P Cap Housing Assembly (H)
316678	12 P Cap Housing Assembly (H)
316681	16 P Cap Housing Assembly (H)
316683	20 P Cap Housing Assembly (H)
316685	36 P Cap Housing Assembly (H)
316687	8 P Plug Housing
316688	12 P Plug Housing
316689	16 P Plug Housing
316690	20 P Plug Housing

Appendix 1

SHEET	AMP AMP (Japan), Ltd. Kawasaki, Japan			
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