

NUMBER 108-5012

AMP SECURITY  
CLASSIFICATION  
Customer Release

108-5012

## Product Specification

## AMP-IN\* PC Board Pin Contact

## 1. Scope:

This specification covers performance requirements and test method of P/N 170072 and 170338, AMP-IN\* PC board pin contacts.

## 1.2 Applicable Printed Circuit Board:

Applicable printed circuit board shall have dimensions conforming to the followings.

Thickness: 1.6 mm  
Diameter of Hole: 1.8 to 1.9 mm

## 1.3 Applicable Wire Range:

Pin Contact No.	mm <sup>2</sup> (AWG)	Insulation Diameter (mm)
170072-X	0.20-0.56 (#24-20)	1.52-2.79
170338-1	0.30-0.89 (#22-18)	

## 2. Product Specification:

## 2.1 Terminal Material:

Terminal shall be made of Copper Alloy No. 260 of ASTM B36, and brass conforming to MIL-C-50.

## 2.2 Surface Finish:

Pin surface shall be finished in accordance with applicable customer product drawing(s).

## 2.3 Design Feature, Dimensions and Construction:

Product design feature, construction and dimensions shall be conforming to applicable customer product drawing(s).

## 2.4 Electrical Performance:

## 2.4.1 Termination Resistance of Wire Crimped Portion:

When tested in accordance with the test method specified in Para. 3.3.1, termination resistance of wire-crimped portion shall be not greater than 3.0 mΩ.

## 2.5 Mechanical Performance:

## 2.5.1 Tensile Strength:

When tested in accordance with the test method specified in Para. 3.3.2, crimp tensile strength shall be not less than the value specified in Table 1.

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Table 1

Wire Size mm <sup>2</sup> (AWG)	Tensile Strength kg (lbs.)
0.2 (#24)	3.5 (7.7)
0.3 (#22)	6.0 (13.2)
0.5 (#20)	8.0 (17.6)
0.75 (#18)	9.5 (20.9)

## 2.5.2 Tensile Strength, Traverse Direction:

When tested in accordance with the test method specified in Para. shall be not broken off by the load within the specified value of 3 kg(6.6lbs.).

## 2.5.3 Insertion/Extraction Force:

When tested in accordance with the test method specified in Para. 3.3.3, insertion/extraction force shall be conforming to the following value.

Table 2

Insertion Force (max.) kg (lbs.)	Extraction Force (min.) kg (lbs.)
2.0 (4.4)	0.5 (1.1)

## 2.6 Solderability:

When tested in accordance with the test method specified in Para. 3.3.5, more than 90% of tested area shall be covered with sufficiently working fresh solder, without concentration of pinholes, void or rough surface, total area of which shall not exceed 10% of tested area.

## 3.0 Quality Assurance Provisions:

## 3.1 Test Conditions:

Unless otherwise specified, all the tests shall be performed under any combination of the following test conditions.

Room Temperature: 20 - 30°C  
Relative Humidity: 50 - 80%  
Atmospheric Pressure: 610 - 790mmHg

## 3.2 Test Samples:

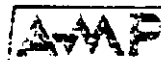
All the sample terminals used for the tests, shall be prepared by crimping at specified crimp height by using appropriate crimping tools, and applied on printed circuit board properly.

## 3.3 Test Methods:

## 3.3.1 Termination Resistance:

Termination resistance of wire-crimped portion shall be measured by using a milliohm meter. The measured value obtained by probing across A and B shall be computed by the formula shown in Fig. 1.

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### 3.3.2 Tensile Strength:

Fasten a wire-crimped terminal onto the head of standard tensile testing machine, and apply an axial pull-off load to its crimped wire by operating the head to travel with the speed at a rate of 100mm a minute. The tensile strength is determined when the wire is broken or is pulled-off from the wire crimp.

### 3.3.3 Insertion/Extraction Force:

Fasten a wire-crimped terminal onto the head of tensile testing machine, in the manner that the terminal is inserted into the counterpart receptacle contact when the machine is operated. Insertion/extraction force is tested by operating the head to travel with the speed at a rate of 100mm a minute and force required mate and unmate the parts shall be measured.

### 3.3.4 Tensile Strength, Traverse Direction:

Insert wire-crimped terminal into PC board hole and have it soldered. With the board firmly held on a test machine, apply a pull load onto the terminal in traverse direction to terminal axis. Tensile strength in traverse direction is measured when the terminal is broken off from the board.

### 3.3.5 Solderability:

Solderability of terminal is tested by immersing sample terminal into heated solder tub, after applying flux, in condition as specified below. After soldering, inspect the sample terminal under 10X magnifying glass, to confirm if more than 90% of the tested area is covered with sufficiently working fresh solder without presence of pinhole, void and rough points in concentrated area, and that the total area of such deficiencies does not exceed 10% of tested area. When applying flux and soldering, immersion depth shall not exceed the limit 8.5mm apart from pin head on PC board.

Temperature of Soldering Tub:

232  $\pm$  5.6°C

Solder Composition:

60% Tin, 40% Lead

Flux:

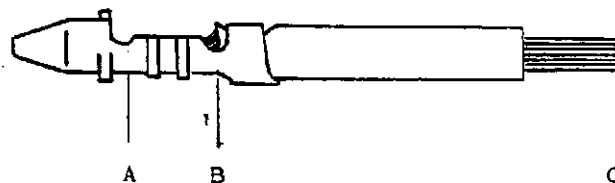
Alpha 100 or equivalent

Duration of Immersion Stroke in Flux Tub:

5 - 10 seconds (approx.)

Duration of Immersion Stroke into Soldering Tub:

5  $\pm$  0.5 seconds



$$R_{AB} = R_{AC} - R_{BC} \text{ (m}\Omega\text{)}$$

Fig. 1

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