## 1. SCOPE

### 1.1. Content

This document covers the performances, tests, and quality requirements of a modular family of headers (0,635mmx0,635mm .0025x.0025 square pins) on a 2,54mm (.100) grid and plugs, designed for wire to board electronic applications. This product line meets dimensional and general requirements of IEC 60603-8 (style B board to wire tin plated and style D board to wire gold plated). These headers can be mated to plugs (IDC or crimp to wire technology).

### 1.2. Qualification

When tests are performed on subject product line, procedures specified in IEC 60512 series specifications shall be used. All inspections shall be performed using applicable inspection plan and product drawing.

## 2. APPLICABLE DOCUMENTS

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, latest edition of the document applies. In the event of conflict between requirements of this specification and product drawing, product drawing shall take precedence. In the event of conflict between requirements of this specification and referenced documents, this specification shall take precedence :

- IEC 60603-8 UTE C-93401 Connectors for frequencies below 3 MHz for use with printed boards.
- IEC 60512 series Basic testing procedures and measuring methods for electromechanical components.
- AMP application specifications :
  - 114-15030 Termination of Right angle IDC connectors type HE1302 and HE1402.
  - 114-15031 180° IDC plugs HE13/14 series CEI 60-603-8.
  - 114-15104 Contact receptacle crimp HE13 - HE14.
- Test specification : 109-202 Component resistance to soldering heat.
- AMP Drawings 188744, 188746, 281695, 281696, 281698, 281699, 281708, 281709, 281711, 281712, 281714, 281715, 281739, 281740, 281742, 281743, 281783, 281784, 281786, 281787, 281789, 281790, 281792, 281793, 281838, 281839.

## 3. REQUIREMENTS

### 3.1. Design and construction

#### 3.1.1. General description

The available connectors are as follows :

- Straight and right angle headers, single row and double row, tin plated or gold plated.
- IDC plugs, straight or right angle, single row and double row, tin plated (603-8 IEC-B series ) or gold plated (603-8 IEC-D series), accepting 0,08 $mm^2$ to 0,22 $mm^2$(28 to 24) gauge stranded wires.
- Max insulation diameter 1 mm (.039) for wires 0,08 to 0,12 $mm^2$ (gauge 28-26) ;
  1,2 mm (.047) for wires 0,12 to 0,22 $mm^2$ ( gauge 26-24).
- Straight plugs accepting crimp contacts. The contacts are designed to accept 0,08 $mm^2$ to 0,22 $mm^2$ (28 to 24 gauge) wires (insulation diameter 0,8 to 1,2 mm ( .0031 to .0047).

Critical dimensions are according to IEC 60603-8, to permit interchangeability between suppliers.

#### 3.1.2. Materials and construction

- Contacts : phosphor bronze, tin or gold plated over nickel
- Housings : - UL94V0 flame retardant glass-filled PBT for plugs
  - UL94 flame retardant glass-filled high temperature polyamide 4-6 for headers

| Drawn by : A. CAMEL | Date : 08 June 1988 | Approved by : A. CAHEREC | Date : 08 June 1988 |
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### 3.2. Climatic category

- -40 °C +100 °C, 21 days for tin plated contacts
- -55 °C +125 °C, 56 days for gold plated contacts

### 3.3. Proof voltage

- 500V rms (style B)
- 1000V rms (style D)

### 3.4. Current rating

3A max/contact at 20°C (derating applicable).

### 3.5. Insulation resistance

- 1000 MΩ min (style B)
- 5000 MΩ min (style D)

### 3.6. Mating - Unmating forces

- 3N max/contact (style B)
- 1,5 N max/contact (style D)

### 3.7. Vibrations

- 10 Hz - 500 Hz ; 0,35 mm or 5g ; 3 x 2 h

### 3.8. Durability

- 30 mating/unmating cycles min (Style B)
- 400 mating/unmating cycles min (Style D)

### 3.9. Contact retention in housing

15 N min (crimp and IDC contact).

### 3.10. Resistance of headers to lead-free soldering temperature

109-202 condition B (265 ±5°C).

## 4. TEST REQUIREMENTS AND PROCEDURE SUMMARY

Unless specified otherwise, all tests shall be performed at ambient temperature.

Unless stated otherwise, all tests are carried according to IEC 60512 series.

The test procedure and requirements are described in IEC 60603-8.

## 5. RE-QUALIFICATION

If changes affecting significantly form, fit and function are made to the product or manufacturing process, partial or complete re-qualification testing will be implemented, according to requirements established by product engineering and quality assurance.