

Application Specification

114-22021

12AUG2003 Rev. D

PCB MODULAR JACKS FOR Cat. 6 APPLICATIONS.

1. INTRODUCTION.

This specification covers the requirements for the application of the following Tyco / Electronics * Modular Jacks and Contact Arrays for Cat.6 applications:

- Side Entry Cat. 6 PCB Jacks.
- Angled Entry Cat. 6 PCB Jacks.
- Contact Array Cat. 6 Right Angle.
- Contact Array Cat. 6 Angled.

It covers the main facts to consider when mounting the Modular Jacks on printed circuit boards. These jacks are not designed to withstand Infra-Red soldering, although no damage has been observed when IR soldering has been used.

Test performed with lead free solder baths have shown good soldering finishing and no damage of plastic parts.

2. REFERENCE MATERIAL.

2.1. Customer Drawing.

A Customer Drawing is available for each Part Number assigned to this product line. In the event of conflict between this specification and the customer drawing, the customer drawing will take precedence.

2.2. Product Specification.

Product Specification 108-22142 provides information pertaining to performance, testing and quality requirements.

3. REQUIREMENTS.

3.1. Printed Circuit Board lay-out.

The dimensions for the printed circuit board lay-out are given on the customer drawing of that Modular Jack and Contact Array.

When Side Entry or Contact Arrays are to be used it is needed to place gold plated finger tips on the printed circuit board.

In the case of Side Entry Jack, Contact Arrays or any other application of those components, where the free end part of the contacts relay directly on the printed circuit board, all through holes must be placed beyond the gold plated finger tips of printed circuit board. These through holes shall be completely covered of solder mask rosin. It has to be avoided that tin, flux or any other fluid can reach the finger tips where electrical contact is established

APVD	DATE	DR	DATE
J. Sanabra**	12AUG2003	E. Frias**	12AUG2003

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Tyco Electronics AMP España, S.A.
Barcelona, Spain

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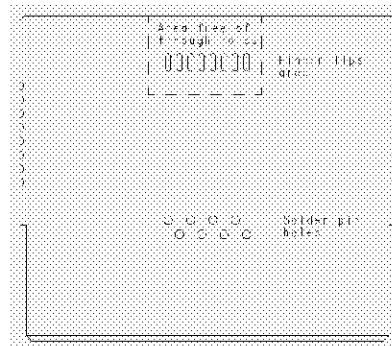


Figure 1.

Solder pads of the printed circuit boards shall be as small as possible to avoid shortcuts between solder pins, see figure 2.

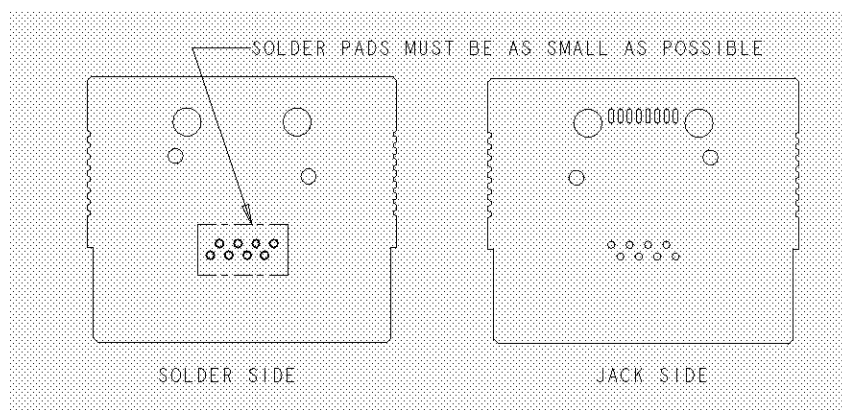


Figure 2.

3.2. Panel cut-out Guidelines.

Panel stops of Side Entry Jack should lean against the inner side of the wall where is to be mounted to. This is to prevent that pull forces coming from the Modular Plug lead, loose the contacts from the Modular Jack or that stresses are exerted upon solder joints.

This applies also to any application where Contact Arrays are to be used. The housing where the contact Array is to be mounted has to prevent the solder joints from any mechanical damage due to the insertion of Modular Plug.

3.3. Alignment.

Jacks and Contact Arrays have to be placed flush with the surface of the printed circuit board, see figure 3.

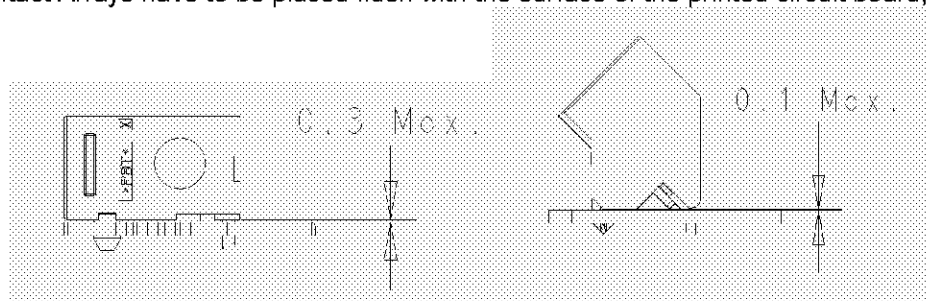


Figure 3.

Side Entry Jack has latches which secure the Jack to the printed circuit board. These latches ensure the correct placement and contact forces of the free end contacts. It is mandatory for the correct performance of the product to ensure that latches are in place. A little gap between latch and printed circuit board is allowed due to the tolerances of plastic and printed circuit board.

3.4. Plating.

When using Side Entry Jack or contact arrays, the finger tips (see fig. 1) shall be gold plated with a gold plating layer of:

- 0.5 μm Au minimum in closed environments.
- 1 μm Au minimum in open environments.

An open environment is such a one where finger tips are directly exposed to free air or environment without any kind of protection.

4. SOLDERING AND CLEANING.

4.1. Soldering.

Contacts shall be fluxed prior to soldering using medium active rosin or a medium active organic flux. Proper flux selection depends on the type of printed circuit board and any components already mounted. Flux must also be compatible with flow solder line and with manufacturing and safety requirements. There is a preferred soldering direction which makes easy to adjust the parameters of the solder line, see figure 4.

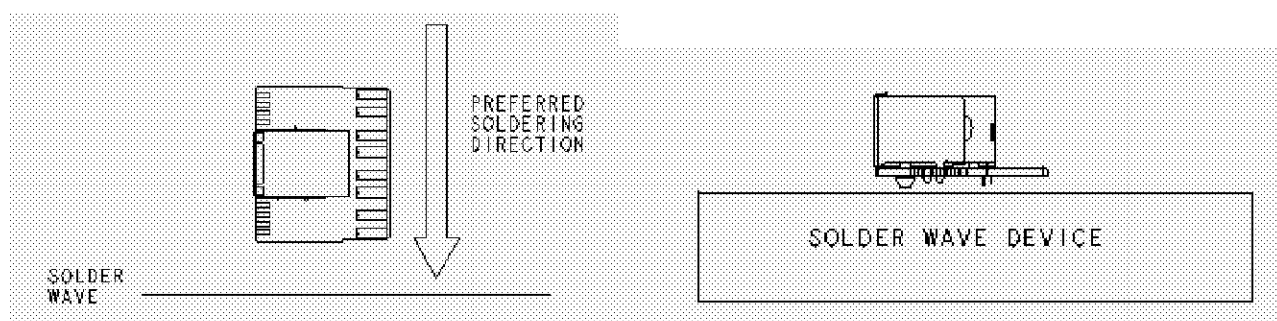


Figure 4.

4.2. Cleaning.

The cleaning procedure selected will depend on the type of flux and the degree of cleanliness required by user.