

REVISION: B	ECR/ECN INFORMATION: EC No: UCP2015-3716 DATE: 2015 / 09 / 09	TITLE: Application Specification for Small Form-factor Pluggable (SFP) Connector and Cage Assembly	SHEET No. 1 of 6
DOCUMENT NUMBER: AS-74441-001	REVISED BY: Robert Barker	CHECKED BY: Donald Morgan	APPROVED BY: Steve Miller

1.0 SCOPE

This specification covers the **0.80 mm (.031 inch)** centerline Small Form-factor Pluggable (SFP) connector and cage assembly. The following specification covers the use and requirements for these components.

The SFP connector is a 20 circuit surface mount device, with a high temperature thermoplastic housing. It is used to connect SFP optical or copper pluggable transceivers to printed circuit boards (PCBs). Features of the connector include alignment pegs for mounting to the circuit board, and a Pin 1 identifier. The connector is packaged in tape-and-reel for high speed assembly.

The SFP cage is used with the SFP connector for guiding and securing SFP optical or copper pluggable transceivers to PCBs such as motherboards and host adapter cards.

The SFP cage assembly is available as a one-piece kit or as separate components to accommodate various board assembly processes. The cage assembly features EMI spring fingers which provide electrical contact to the card bezel. The cage cover and base incorporate positive mechanical locking latches. The cage base features a locking latch for positive latching of industry-compatible modules. The cage base is available in three versions: standard solder post, PCI solder post (for use with PCI cards), and press-fit post. The base also features three rear pins for EMI suppression to the PCB.

The cage cover is packaged in trays for hand assembly. The cage base is available in trays or tape-and reel.

REVISION: B	ECR/ECN INFORMATION: EC No: UCP2015-3716 DATE: 2015 / 09 / 09	TITLE: Application Specification for Small Form-factor Pluggable (SFP) Connector and Cage Assembly	SHEET No. 2 of 6
DOCUMENT NUMBER: AS-74441-001	REVISED BY: Robert Barker	CHECKED BY: Donald Morgan	APPROVED BY: Steve Miller

2.0 GENERAL REQUIREMENTS

2.1 Part numbers

<u>DESCRIPTION</u>	<u>PART NUMBER</u>	
Connector (20 circuit)	74441-0001	74441-0010
	74441-0021	74441-0031
One-Piece Press Fit Cage	73927-0001	
One-Piece Solder Post Cage	73927-0002	
One-Piece PCI Cage	73927-0004	
Cage Cover	73927-0020	
Press-Fit Cage Base	73927-0030	
Solder Post Cage Base	73927-0040	
PCI Cage Base	73927-0060	

2.2 Connector Documentation

<u>DESCRIPTION</u>	<u>DOCUMENT NUMBER</u>
Sales drawing	SD-74441-001
Packaging specification	PK-70873-1201
Product specification	PS-74441-001

2.3 Cage Assembly Documentation

<u>DESCRIPTION</u>	<u>DOCUMENT NUMBER</u>
Sales Drawings:	
SFP Cage Assembly	
Press-fit Version	SD-73927-001
SFP Cage Assembly	
Solder Post Version	SD-73927-002
SFP Cage Assembly	
PCI Version	SD-73927-004
Packaging Specification	Not Available
Product Specification	Not Available

REVISION: B	ECR/ECN INFORMATION: EC No: UCP2015-3716 DATE: 2015 / 09 / 09	TITLE: Application Specification for Small Form-factor Pluggable (SFP) Connector and Cage Assembly	SHEET No. 3 of 6
DOCUMENT NUMBER: AS-74441-001	REVISED BY: Robert Barker	CHECKED BY: Donald Morgan	APPROVED BY: Steve Miller

2.4 Packaging

The Molex SFP connector is supplied on tape and reel packaging for high speed assembly. One piece cage kits are supplied in trays of 24 per tray. If ordered separately, the cage cover and base are supplied in trays of 24 or on tape-and-reel.

2.5 Board Thickness

There is no required board thickness for single-sided printed circuit boards mounting. For double-sided printed circuit board mounting, PC board to be a minimum of 3.0 mm (.118 Inch) thick.

2.6 Board Layout

The board layout must conform to the Small Form-factor Pluggable (SFP) MSA agreement. See the aforementioned sales drawings for the required board layout.

3.0 ASSEMBLY

3.1 Connector Assembly

3.1.1 Connector Alignment

The Molex SFP connector shall be placed on the host printed circuit board using the aligning posts. The terminals shall be lined up on the circuit board in such a way that the solder feet shall be placed over the solder pads on the host board.

REVISION: B	ECR/ECN INFORMATION: EC No: UCP2015-3716 DATE: 2015 / 09 / 09	TITLE: Application Specification for Small Form-factor Pluggable (SFP) Connector and Cage Assembly	SHEET No. 4 of 6
DOCUMENT NUMBER: AS-74441-001	REVISED BY: Robert Barker	CHECKED BY: Donald Morgan	APPROVED BY: Steve Miller

3.1.2 Connector Seating Forces

It is recommended that the connector is seated with the specified force to assure that the terminal tails make sufficient contact with the previously applied solder paste:

Connector Seating Force = 130 grams

3.2 Cage Assembly

3.2.1 Cage Registration

The cage base or one-piece cage kit mounting post and EMI suppression pins must be aligned with the matching printed circuit board hole locations.

3.2.2 Seating – Cages with Solder Tails

As the cage base solder posts are for clearance and fit only, the force required for seating the cage is minimal. The bottom of the cage must be seated and soldered so that there is no more than 0.05 mm (.002 Inch) gap between the shoulder of the solder posts and the PCB. The gap between the front of the cage base and the PCB should be no more than 0.1 mm (.004 Inch).

3.2.3 Seating – Cages with Press-Fit Tails

Insertion force is 30 to 35 pounds. Insert with top cage installed.

Use standard “flat rock” insertion equipment.

4.0 SOLDERING REQUIREMENTS

4.1 Processing requirements

Peak reflow temperatures should not exceed 245 degrees C.

REVISION: B	ECR/ECN INFORMATION: EC No: UCP2015-3716 DATE: 2015 / 09 / 09	TITLE: Application Specification for Small Form-factor Pluggable (SFP) Connector and Cage Assembly	SHEET No. 5 of 6
DOCUMENT NUMBER: AS-74441-001	REVISED BY: Robert Barker	CHECKED BY: Donald Morgan	APPROVED BY: Steve Miller

4.2 Stencil Requirements

See Figure 1 for a recommended stencil layout.

A minimum solder paste thickness of 0.13 mm (.005 Inch) is recommended.

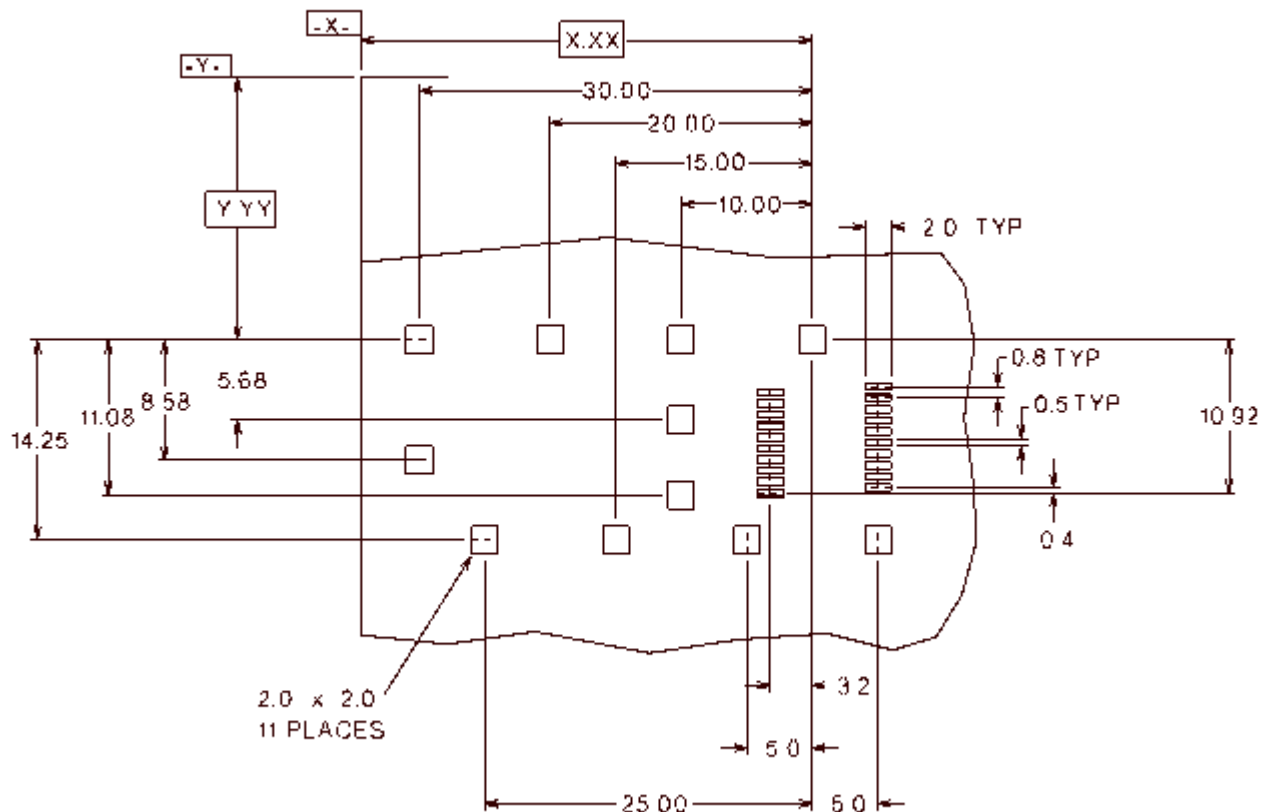


FIGURE 1: RECOMMENDED STENCIL LAYOUT

Note: All dimensions are reference only
 Registration established by customer
 All dimensions are in millimeters.

REVISION: B	ECR/ECN INFORMATION: EC No: UCP2015-3716 DATE: 2015 / 09 / 09	TITLE: Application Specification for Small Form-factor Pluggable (SFP) Connector and Cage Assembly	SHEET No. 6 of 6
DOCUMENT NUMBER: AS-74441-001	REVISED BY: Robert Barker	CHECKED BY: Donald Morgan	APPROVED BY: Steve Miller