

**SFP+ CAGES**

REVISION: <b>J1</b>	ECR/ECN INFORMATION: ECM No: 116984 DATE: 05/17/2017	TITLE: <b>PRODUCT SPECIFICATION FOR SFP+ CAGES</b>	SHEET No. <b>1 of 10</b>
DOCUMENT NUMBER: <b>747540001</b>	CREATED / REVISED BY: <b>DASH SUN</b>	CHECKED BY: <b>ROBBIE CHEN</b>	APPROVED BY: <b>NEIL CHEN</b>

## 1.0 SCOPE

This product specification covers SFP+ (small form factor pluggable) cages. The cage is connected to the host pc board by press-fit compliant legs or solder posts.

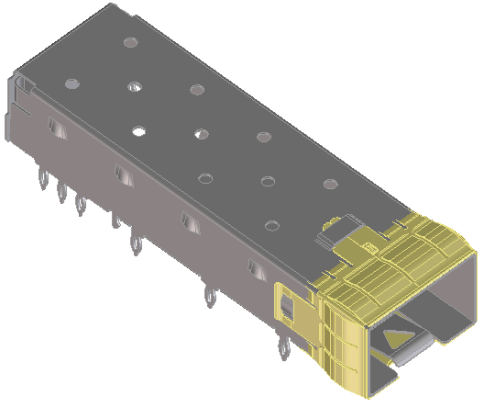
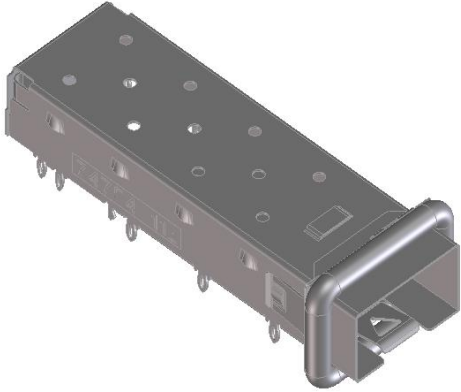
## 2.0 PRODUCT DESCRIPTION

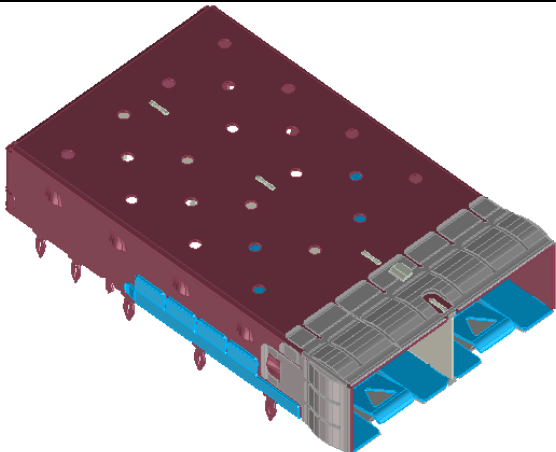
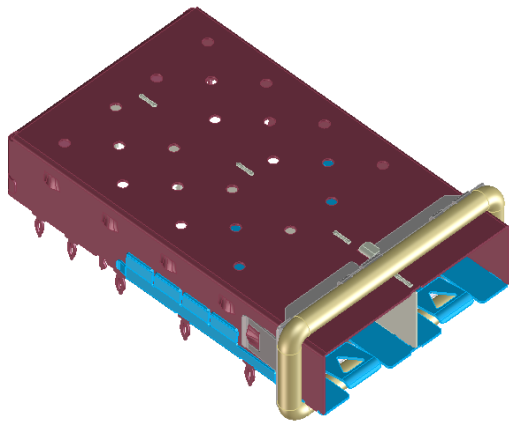
### 2.1 PRODUCT NAME

SFP+ single port and 1x ganged cages (small form factor pluggable)

#### 2.1.1 PART NUMBER

74754 & 111112 series

SFP+ (1X1)	
	
Figure – 1 Spring Finger Type	Figure – 2 Elastomeric Gasket

SFP+ (1X2)	
	
Figure – 1 Spring Finger Type	Figure – 2 Elastomeric Gasket

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## SFP+ (1X4)

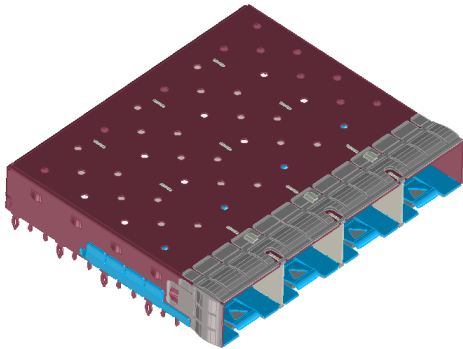


Figure – 1 Spring Finger Type

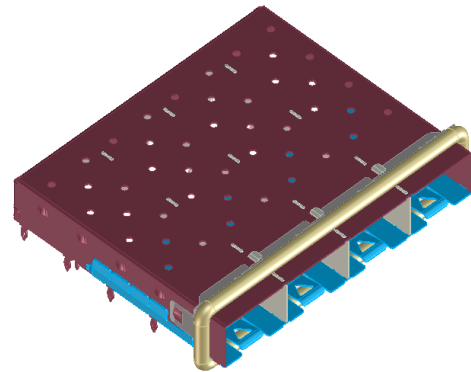


Figure – 2 Elastomeric Gasket

## SFP+(1X6)

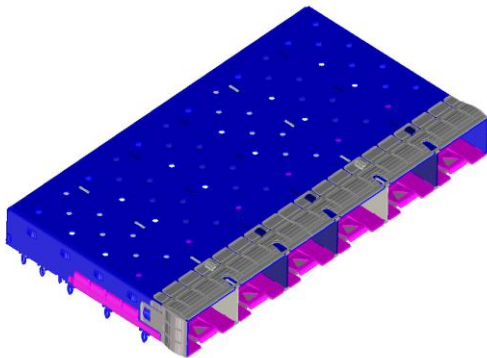


Figure – 1 Spring Finger Type

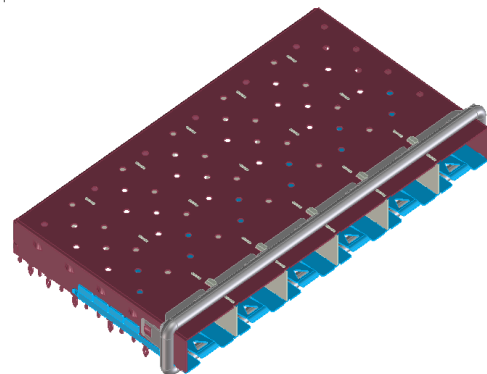


Figure – 2 Elastomeric Gasket

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## 2.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKINGS

See the appropriate sales drawing for information on dimensions, materials, plating and markings and footprint patterns.

## 3.0 APPLICABLE DOCUMENTS AND SPECIFICATIONS

See the appropriate sales drawing for information concerning specifications.

### 3.1 MOLEX DOCUMENTS

Cosmetic specification: Molex WI-HP7-2774

Application specification: AS-74754-001

## 4.0 RATINGS

### 4.1 VOLTAGE

120 volts ac

### 4.2 CURRENT

0.5 amps max.

### 4.3 TEMPERATURE

Operating: - 40°C to +85°C

Non-operating: - 55°C to +105°C

### 4.4 DURABILITY

See section 5.1 durability and module retention in cage testing.

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## 5.0 PERFORMANCE

### 5.1 MECHANICAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT	RESULTS
1	Random Vibration	EIA-364-28, Test Condition VII, Condition Letter D. Subject mated specimens to 3.13G's RMS between 20 to 500Hz. Fifteen minutes in each of 3 mutually perpendicular planes. Test to include board fully populated without connector's and modules.	No components of cage assembly come apart, off, or loose	PASS
2	Mechanical Shock	EIA-364-27, Condition H. Subject mated specimens to 30G's Half-sine shock pulses of 11 milliseconds duration. Three shocks in each direction applied along 3 mutually perpendicular planes, 18 total shocks. Test to include board fully populated without connector's and modules.	No components of cage assembly come apart, off, or loose	PASS
3	Module Insertion	EIA-364-13 Measure force necessary to insert Module into cage at a Maximum rate of 25.4 mm/min.	18N Max. Per SFF-8432	PASS
4	Module Extraction	EIA-364-13 Measure force necessary to extract Module from cage at a Maximum rate of 25.4 mm/min.	12.5N Max. Per SFF-8432	PASS
5	Cage Retention (Latch strength)	EIA-364-98 Force applied in vertical direction on cable assembly plugged into cage At a maximum rate of 25.4 mm per minute.	170N Max No functional damage to module below 90 N. Per SFF-8432	PASS
6	Cage Durability	Mate and unmated modules with cages for 100 cycles with the latch retention feature operable Test rate: 500 cycles/hour	No functional damage to cage	PASS

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ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT	RESULTS
7	Cage Press-Fit Insertion Force (See Note)	1x1 Cage (747540101)	N/A	Max. insertion force is seen when using immersion TIN plated boards: 460 N. When using OSP plated boards the max. insertion force: 370 N.
		1x2 Cage 747540210, 0220	N/A	Max. insertion force is seen when using immersion TIN plated boards: 336N. When using OSP plated boards the max. insertion force: 290N.
		1x4 Cage (747540414)	N/A	Max. insertion force is seen when using immersion TIN plated boards: 672 N. When using OSP plated boards the max. insertion force: 481 N.
		1x4 Cage (747540410 / 747540420)	N/A	Max. insertion force is seen when using immersion TIN plated boards 616 N. When using OSP plated boards the max. insertion force: 538 N.
		1x6 Cage (747540610)	N/A	Max. insertion force is seen when using : OSP plated boards: 909N. TIN plated boards: 940N SILVER plated boards: 844N GOLD plated boards: 720N

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ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT	RESULTS
8	Cage Press-Fit Extraction Force (See Note)	1x1 Cage (747540101)	N/A	Min. extraction force is seen when using immersion GOLD plated boards: 49 N. When using OSP plated boards the min. extraction force: 91 N.
		1x2 Cage 747540210, 0220	N/A	Min. extraction force is seen when using immersion GOLD plated boards: 58N. When using OSP plated boards the min. extraction force: 71N
		1x4 Cage (747540414)	N/A	Min. extraction force is seen when using OSP plated boards: 168 N. When using immersion GOLD plated boards the min. extraction force: 172 N.
		1x4 Cage (747540410 / 747540420)	N/A	Min. extraction force is seen when using OSP plated boards: 94 N. When using immersion GOLD plated boards the min. extraction force: 169 N.
		1x6 Cage (747540610)	N/A	Min. extraction force is seen when using : OSP plated boards: 273 N. TIN plated boards: 373N SILVER plated boards: 301N GOLD plated boards: 209N

**Note:** Test result may vary based on test equipment, PCB thickness, plated through hole dimensions and finished plating type.

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## 5.2 ENVIRONMENTAL REQUIREMENTS

ITEM	DESCRIPTION	TEST CONDITION	REQUIREMENT	RESULTS
9	Thermal Shock	EIA-364-32, Test Condition VII Subject specimens to 5 cycles between -55 and 105°C with 30 minute dwells at temperature extremes and 1 minute transition between temperatures	Shall meet visual requirements and show no physical damage and meet cosmetic spec WI-HP-7-2774	PASS
10	Humidity/Temperature Cycling	EIA-364-31, Method III Cycle between 25°C±3°C at 80% RH and 65°C±3°C at 95% RH. For 10 cycles. (10 days).	Shall meet visual requirements and show no physical damage and meet cosmetic spec WI-HP-7-2774	PASS
11	Temperature Life	EIA-364-17B, Method A, Test Condition 4. Subject mated specimens to 105°C for 240 hours.	Shall meet visual requirements and show no physical damage and meet cosmetic spec WI-HP-7-2774	PASS
12	Resistance to Soldering Heat (For Solder Post/Tin plated of legs only)	EIA-364-56C, Procedure 2, (Manual soldering) Soldering Time: 5 seconds MAX Solder Temperature: 360±10°C	Show no physical damage and meet cosmetic spec WI-HP-7-2774	See [Note 1]
		EIA-364-56C, Procedure 3, Condition C Wave Soldering (with flux) Temperature: 260±5°C Soldering Time: 10±2 sec		
		EIA-364-56C, Procedure 5 & 6, Test level 3 Reflow Soldering (without flux) Temperature: 250+10/-0°C (See Figure-1)		

**Note 1:** The cage assembly with gasket is not allowed to perform the wave or reflow soldering process. The EMI performance of gasket will be downgrade after soldering process.

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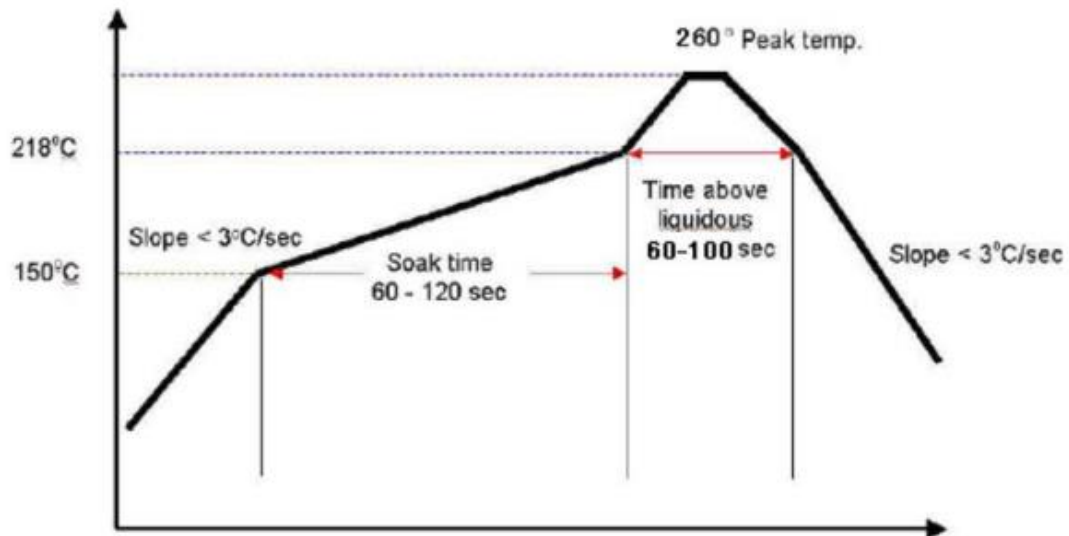


Figure-1 Recommended Reflow Curve

## 6.0 PACKAGING

Parts shall be packaged in trays to protect against damage during handling, transit and storage.

## 7.0 ADVICE

Different flux and storage environment may have impact to solderability.  
Tin plated product could provide better solderability as well.

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## 8.0 GAGES AND FIXTURES

5KN load frame with 1000n load cell  
Instron 5565



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