



SPECIFICATION

SPEC. NO: SPEC-PQDC-01 REV: X4 (Preliminary)

DATE: 2022/08/02

PRODUCT NAME : QSFP DD Cage

PRODUCT NO: PQDC12-E310-12S-0R

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Product Number : PQDC12-E310-12S-0R

Product Description : QSFP DD Single and Ganged Cage

1 SCOPE

1.1 Content

1.1.1 This specification covers performance, tests and quality requirements for cage which is connected to the host pc board by press-fit compliant legs or solder posts.

2 APPLICABLE DOCUMENTS

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

2.1 Commercial standards

2.1.1 EIA-364-32, Thermal Shock

2.1.2 EIA-364-17, High temperature life

2.1.3 EIA-364-31, Temperature Cycling

2.1.4 QSFP DD MSA

3 MECHANIC DIMENSIONS

3.1 Dimensions

See engineering drawing:PQDC12-E310-12S-0R

4 REQUIREMENTS

4.1 Design and Construction

4.1.1 Product shall be of design, construction and physical dimensions specified on applicable product drawing.

4.2 Materials and Finish

4.2.1 Cage: Stainless Steel or Copper Alloy

4.2.2 EMI Spring: Stainless Steel or Copper Alloy

4.3 Ratings

4.3.1 Operating temperature : -55°C TO +85°C

4.4 Workmanship

Cage shall be uniform in quality and shall be free from burrs, scratches, cracks, sharp edges, and other defects that will adversely affect product's life or serviceability

5 MECHANICAL CHARACTERISTICS

5.1 Cage durability

Mate and unmate modules with cages for 100 cycles with the latch retention feature operable
Requirement: No functional damage to cage

5.2 Module Insertion

Module inserted into connector and cage with latch mechanism engaged force 90N MAX

5.3 Module Extraction

Module to be removed from connector and cage with latching force 50N MAX

5.4 Module latch retention

Module latch retention force 90N MIN(No functional damage to module connector or cage)

5.5 Cage Latch strength

125N.minimum;

5.6 Cage press-fit insertion force (into board) .test condition: speed 25mm/minute

Single PIN press-fit insertion force

Stainless steel :

1.05mm diameter :Max 50N(Immsn plated boards)

0.95mm diameter :Max 40N(Immsn plated boards)

0.85mm diameter :Max 30N(Immsn plated boards)

Bronze :

1.05mm diameter :Max 40N(Immsn plated boards)

0.95mm diameter :Max 30N(Immsn plated boards)

0.85mm diameter :Max 25N(Immsn plated boards)

Copper-Nickel Alloy :

1.05mm diameter :Max 30N(Immsn plated boards)

0.95mm diameter :Max 25N(Immsn plated boards)

0.85mm diameter :Max 20N(Immsn plated boards)

Total press-fit insertion force

Maximum force allowed in a single PIN * number of pins

5.7 Cage extraction force(from boards) .test condition: speed 25mm/minute

single PIN extraction force

1.05mm diameter : Min. 8N/Pin

0.95mm diameter : Min. 6N/Pin

0.85mm diameter : Min. 4N/Pin

Total extraction force

Total extraction force 114N Min

6 ENVIRONMENTAL CHARACTERISTICS

6.1 Thermal shock(EIA-364-32, Test Condition I)

Subject mated specimens to 10 cycles between -55 and 85 °C with 30 minutes dwells at temperature extremes and 5 minutes transition between temperatures.

Requirements: Shall meet visual requirement, show no physical damage, and meet requirement of additional tests as specified in the product qualification an requalification

test sequence shown in Figure 1.

6.2 Humidity/temperature cycling(EIA-364-31, Method III)

Subject mated specimens to 10 cycles(10 days) between 25 and 65°C at 80 to 100%RH.

Requirement: Shall meet visual requirement, show no physical damage, and meet requirement of additional tests as specified in the product qualification and requalification test sequence shown in Figure 1.

test sequence shown in Figure 1.

6.3 Temperature life (EIA-364-17, Method A, Test Conditions 4)

Subject mated specimens to 105°C for 120 hours.

Requirements: Shall meet visual requirement, show no physical damage, and meet requirement of additional tests as specified in the product qualification and requalification test sequence shown in Figure 1.

7 Qualification Testing Sequences

Figure 1

QUALIFICATION TEST							
No.	Description	Section	Test Group & Sequence				
			1	2	3	4	5
1	Initial examination of product		1	1	1	1	1
2	durability	5.1	2				
3	Module Insertion	5.2			2		
4	Module Extraction	5.3			3		
5	Module latch retention	5.4		2			
6	Cage Latch strength	5.5		3			
7	Cage press-fit insertion force (into board)	5.5		4			
8	Cage extraction force (from board)	5.6			4		
9	Thermal shock	6.1				2	
10	Humidity/Temperature cycling	6.2				3	
11	Temperature life	6.3					2
12	Final examination of product		3	5	5	4	3

Remark:

1. 5pcs samples are required in each group.