

Intel[®] Ethernet SFP+ Optics

Technical Brief

Networking Division (ND)

January 2017

Revision 1.1
334894-002



Revision History

Revision	Date	Comments
1.1	January 2017	Replaced mechanical drawing. Replaced dimension table.
1.0	September 2016	Initial release (Intel public).

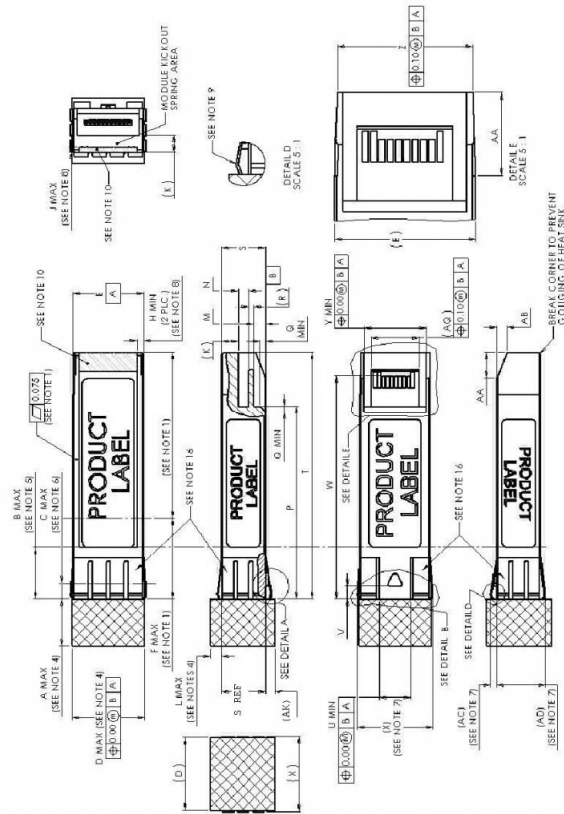


1.0 Introduction

Intel® Ethernet SFP+ Optics modules follow the mechanical specifications of the Small Formfactor Pluggable (SFP) Transceiver, which was agreed upon by the SFF committee and documented in INF-8074i. See page 2 for mechanical dimensions and tolerances.

Applicable Intel SFP+ Optic Kits:

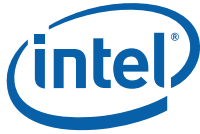
Product Code	MM#
E40GQSFPLR	933912
Y3KJN	942697
E10GSFPSR	903239
E10GSFPLR	903240
E10GSFPSRG1P5	909923
SN30H19453	941243
E40GQSFPSR	933911
SN30H11047	940454
E25GSFP28SR	952293



Designator	Dimension (mm)	Tolerance (mm)	Comments
A	10.00	Recommended Maximum	Module length extending outside of cage, see Note 4. Other lengths are application specific.
B	10.00	Maximum	Designated EMI ground spring area, see Note 5
C	3.00	Maximum	EMI spring/Cage Contact Point, see Note 6
D	14.00	Maximum	Module width extending outside of cage, see Note 4
E	13.55	±0.25	Module width
F	15.50	Maximum	Distance to front end of optional heat sink area, see Note 1
H	1.25	Minimum	Top slot distance from edge, see note 8
J	1.00	Maximum	Top slot depth, see note 8
K	3.25	Reference	Height of module kick-out spring area
L	2.10	Maximum	Module top height extending outside of cage see Note 4
M	2.25	±0.10	Distance from bottom of Module to printed circuit board
N	2.00	±0.25	Distance from rear shoulder to printed circuit board
P	37.10	±0.30	Distance from positive stop to bottom opening of Module and beginning of bottom rear relief



Designator	Dimension (mm)	Tolerance (mm)	Comments
Q	1.10	Minimum	Chamfer on bottom of Module opening
R		Reference	Thickness of printed circuit board from pad to pad. (See SFP-8083 for dimensional value)
S	8.55	±0.15	Module height
T	47.50	±0.20	Distance from positive stop to rear of Module
U	6.00	Minimum	Clearance Area for Cage Tab
V	2.50	+0.15/-0.05	Distance from Retention Post to Positive stop
W	43.00	±0.20	Distance from positive stop to end of PCB signal pad
X	14.55	Reference	Overall width of EMI springs, see note 7
Y	11.90	Minimum	Module width of bottom opening
Z	13.40	+0.10/-0.5	Taper module width at PCB end
AA	6.00	±4.0	Length of taper and relief at rear of module
AB	1.00	+1.0/-0.75	Height of bottom rear relief
AC	1.20	Reference	Height of bottom EMI springs, see note 7
AD	9.35	Reference	Height of top EMI springs, see note 7
AE	2.65	N/A	Width of Retention Post, see Note 3
AF	2.60	N/A	Length of Retention Post, see Note 3
AG	0.40	N/A	Retention Post Radius, see Note 3
AH	62.8°	N/A	Retention Post angle, see Note 3
AJ	3.50	Minimum	Module/Cage tab EMI Contact Zone, see Note 14
AK	1.40	±0.50	Module bottom height extending outside of cage. (Height of bottom positive stop), see Note 4
AL	0.65	+0.10/-0.25	Retention Post height
AM	45°	Maximum	Retention Post lead-in angle
AN	90°	±5°	Positive stop angle
AP	0.30	Maximum	Distance from bottom of Module to latch angle
AT	0.85	Maximum	Technique #1 ramp distance during retention
AU	0.25	Minimum	Technique #1 ramp height from top of retention post
AV	1.00	Maximum	Technique #1 Maximum ramp height
AW	45°	±3°	Technique #1 ramp angle
AX	2.95	±0.25	Technique #1 ramp distance during extraction
AY	5.10	Maximum	Technique #1 ramp width
AZ	2.25	Minimum	Technique #3 pusher length
BA	0.10	+0.10/-0.05	Technique #3 pusher height from top of retention post
BB	5.10	Maximum	Technique #3 pusher WIDTH
BC	0.10	+0.10/-0.05	Technique #4 pusher height from top of retention post



Designator	Dimension (mm)	Tolerance (mm)	Comments
BD	6.75	Maximum	Technique #4 pusher length from stop
BE	4.70	Maximum	Technique #4 length from stop to pusher radius
BF	2.00	Minimum	Technique #4 pusher radius
BG	25°	Reference	Technique #4 pusher angle
BH	5.10	Maximum	Technique #4 pusher width
BJ	14.00	±0.10	Cage opening width
BK	8.95	±0.15	Cage opening height
BL	0.35	Maximum	Cage opening Radius
BM	5.10	Maximum	Cage retention tab width
BN	3.00	Minimum	Cage conductive surface for Module EMI spring contact point, See note 11
BP	10.00	Minimum	Smooth cage area to accept Module EMI springs, See note 12
<p>Notes:</p> <ol style="list-style-type: none"> 1. Dimension only applies for modules that require a heat sink. Dimension applies for indicated length for heat sink modules, surface shall be thermally conductive. 2. Labels permitted on top, bottom and both sides within indicated dimensions. Label to be zero thickness or recessed below external surfaces of module. Label contents and positions to be determined by module manufacturer. The label(s) shall not interfere with the mechanical, thermal or EMC properties of the system. 3. Dimensions define a maximum envelope for module post. The post may have a different shape as long as the post cross-section does not exceed the maximum envelope. 4. Indicated outline defines maximum envelope outside of cage. The surfaces of the maximum envelop may be contacted by an adjacent module EMI springs during insertion or extraction of the module from the cage. The surfaces shall not have any shapes or materials that can damage the adjacent module EMI springs or be damaged themselves by the springs. 5. Dimension defines the maximum EMI ground spring position on module. 6. Dimension defines EMI spring contact point with module cage. 7. Maximum aggregated EMI spring force shall not exceed 9 Newtons on any one side. Minimum aggregate EMI spring force shall be greater then 4 Newtons on any side. Maximum force occurs when a module with EMI springs at their maximum dimension is inserted, to the cage stop, into a nominal cage opening (see figure 6-1). Minimum force occurs when a module with EMI springs at their minimum dimension is inserted into a maximum cage opening (see figure 6-1). 8. Slot is only required when placing a label on top of the module. 9. Spring ends shall be formed in such a way as to prevent catching on the cage or an adjacent module during insertion or extraction or on any external item during handling. Springs may contact an adjacent module(s) during insertion. However, the springs shall be designed to contact only the cage upon full insertion in cage. 10. The label slot is not required to extend to the end of the module. 11. Designated area on cage shall be conductive and free of holes, dimples, seams or any other feature that may catch on EMI springs. 12. Designated area on cage shall be free of holes, dimples, seams or any other feature that may catch on EMI springs. 13. Color code: An exposed colored feature of the transceiver (a feature or 			



Designator	Dimension (mm)	Tolerance (mm)	Comments
			surface extending outside the cage assembly) shall be color coded as follows; Black or beige for multi-mode, Blue for single mode.
			14. Dimension defines the minimum size zone for EMI contact between the cage tab and the bottom of the module.
			15. Maximum cage tab force may not exceed 7.0 Newtons. Minimum cage tab force shall be greater than 1.5 Newtons. Maximum force occurs when a module at its maximum height dimension (Dim S) is inserted into a nominal cage opening (see figure 10). Minimum force occurs when a module at its minimum dimension (Dim S) is inserted into a maximum cage opening (see figure 6-1).
			16. Number of EMI springs shown is for reference only. Actual number of springs will be determined by manufacturer.



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