

## Product Specification

### RoHS-6 Compliant 10 Gb/s 850nm Multimode X2 Transponder

#### FTLX8541E2/FTLX8541F2

#### PRODUCT FEATURES

- Hot pluggable X2 MSA form factor
- Total power consumption: 2.2 W maximum
- RoHS-6 compliant (lead-free)
- Temperature range 0°C to 70°C
- Transmission distance of 300m
- Uncooled 850 nm VCSEL laser
- SC connector, multimode fiber
- Full duplex transmission mode
- Digital Optics Monitoring (DOM)
- Power supply: +5.0 V, +3.3 V
- Adaptable Power Supply (APS: +1.2 V)
- XAUI electrical interface  
4x 3.125 Gb/s Ethernet (FTLX8541E2)  
4x 3.1875 Gb/s Fibre Channel (FTLX8541F2)
- Management and control via MDIO 2-wire bus
- 70-pin connector
- Separated signal/chassis ground
- Mid Pak module variance for front panel mounting
- De-latch mechanism with low extraction force



#### APPLICATIONS

- 10GBASE-SR 10G Ethernet (FTLX8541E2)
- 1200-Mx-SN-I 10G Fibre Channel: (FTLX8541F2)

#### PRODUCT SELECTION

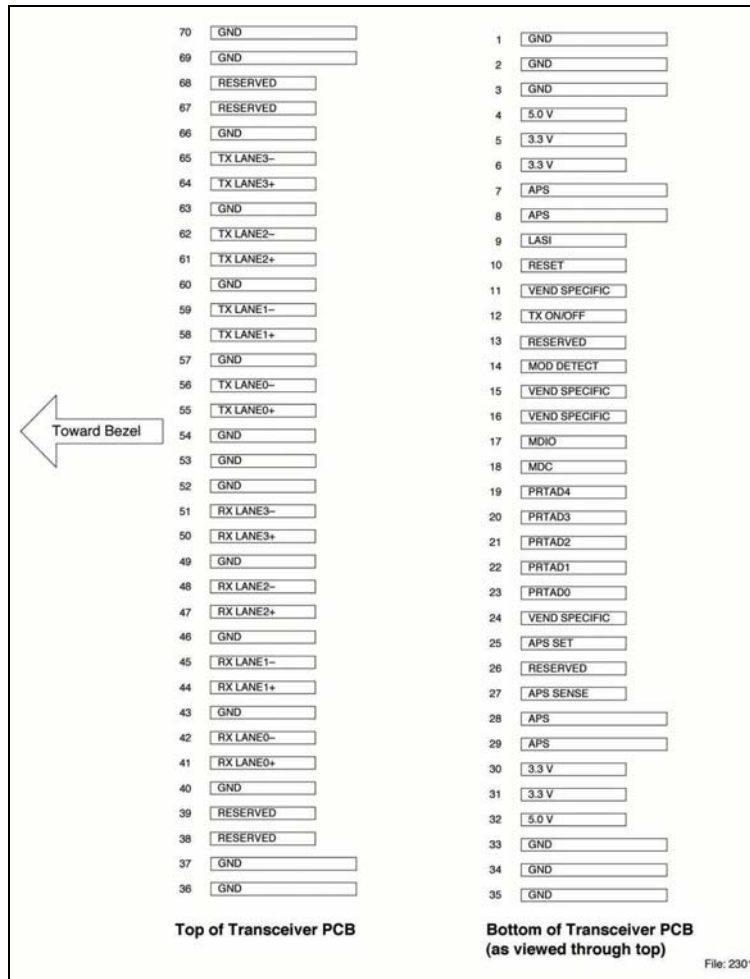
| Part Number | Applications      |
|-------------|-------------------|
| FTLX8541E2  | 10G Ethernet      |
| FTLX8541F2  | 10G Fibre Channel |

**I. Pin Descriptions**

| Signal Name                            | Level   | I/O | Pin No.                   | Description   |
|--|---|-----|---------------------------|---|
| <b>Management and Monitoring Ports</b> |   |     |                           |   |
| MDIO                                   | Open Drain                                      | I/O | 17                        | Management Data I/O. Requires external 10 - 22 k $\Omega$ pull-up to the APS on host.   |
| MDC                                    | 1.2 V CMOS                                      | I   | 18                        | Management Data Clock Input   |
| PRTAD4                                 | 1.2 V CMOS                                      | I   | 19                        | Port Address Input bit 4  |
| PRTAD3                                 | 1.2 V CMOS                                      | I   | 20                        | Port Address Input bit 3  |
| PRTAD2                                 | 1.2 V CMOS                                      | I   | 21                        | Port Address Input bit 2  |
| PRTAD1                                 | 1.2 V CMOS                                      | I   | 22                        | Port Address Input bit 1  |
| PRTAD0                                 | 1.2 V CMOS                                      | I   | 23                        | Port Address Input bit 0  |
| LASI                                   | Open Drain                                      | O   | 9                         | Link Alarm Status Interrupt Output. Open Drain Compatible Output with 10 - 20 k $\Omega$ pull-up on host. Logic high = Normal Operation Logic low = Status Flag Triggered |
| RESET                                  | Open Drain                                      | I   | 10                        | Reset Input. Open Drain Compatible Input with 22 k $\Omega$ pull-up to APS internal to transponder. Logic high = Normal Operation Logic low = RESET                       |
| Vendor Specific                        |   |     | 11,15,16,24               | Vendor Specific Pins. Leave unconnected when not used.  |
| TX ON/OFF                              | Open Drain                                      | I   | 12                        | TX ON/OFF Input. Open Drain Compatible Input with 22 k $\Omega$ pull-up to APS internal to transponder. Logic high = Transmitter On Logic low = Transmitter Off           |
| MOD DETECT                             |   | O   | 14                        | Pulled low inside transponder through a 1 k $\Omega$ resistor to Ground   |
| <b>Transmit Functions</b>              |   |     |                           |   |
| Reserved                               |   | I   | 68                        | Reserved For Future Use   |
| Reserved                               |   | I   | 67                        | Reserved For Future Use   |
| TX LANE 3–                             | AC-coupled, Internally biased differential XAUI | I   | 65                        | Module XAUI Input Lane 3–   |
| TX LANE 3+                             |   | I   | 64                        | Module XAUI Input Lane 3+   |
| TX LANE 2–                             |   | I   | 62                        | Module XAUI Input Lane 2–   |
| TX LANE 2+                             |   | I   | 61                        | Module XAUI Input Lane 2+   |
| TX LANE 1–                             |   | I   | 59                        | Module XAUI Input Lane 1–   |
| TX LANE 1+                             |   | I   | 58                        | Module XAUI Input Lane 1+   |
| TX LANE 0–                             |   | I   | 56                        | Module XAUI Input Lane 0–   |
| TX LANE 0+                             | I   | 55  | Module XAUI Input Lane 0+ |   |

| <b>Receive Functions</b> |  |   |   |  |
|--------------------------|--|---|---|--|
| Reserved                 |  | O | 38  | Reserved For Future Use  |
| Reserved                 |  | O | 39  | Reserved For Future Use  |
| RX LANE 0+               | AC-coupled,<br>Internally biased<br>differential<br>XAUI | O | 41  | Module XAUI Output Lane 0+   |
| RX LANE 0–               |  | O | 42  | Module XAUI Output Lane 0–   |
| RX LANE 1+               |  | O | 44  | Module XAUI Output Lane 1+   |
| RX LANE 1–               |  | O | 45  | Module XAUI Output Lane 1–   |
| RX LANE 2+               |  | O | 47  | Module XAUI Output Lane 2+   |
| RX LANE 2–               |  | O | 48  | Module XAUI Output Lane 2–   |
| RX LANE 3+               |  | O | 50  | Module XAUI Output Lane 3+   |
| RX LANE 3–               |  | O | 51  | Module XAUI Output Lane 3–   |
| <b>DC Power</b>          |  |   |   |  |
| GND                      | 0 V DC   |   | 1, 2, 3, 33, 34,<br>35, 36, 37, 40,<br>43, 46, 49, 52,<br>53, 54, 57, 60,<br>63, 66, 69, 70 | Ground connection for signal ground<br>on the module   |
| APS                      | +1.2 V   |   | 7, 8, 28, 29  | Input from Adaptive Power Supply   |
| APS SENSE                | +1.2 V   |   | 27  | APS Sense Output. Connected to the<br>APS input inside transponder.                              |
| APS SET                  |  |   | 25  | Feedback input from APS.<br>Connected to GND through a 1180Ω<br>resistor inside the transponder. |
| 3.3 V                    | +3.3 V DC  |   | 5, 6, 30, 31  | DC Power Input, +3.3 V DC,<br>Nominal  |
| 5.0 V                    | +5.0 V DC  |   | 4, 32   | DC Power Input, +5.0 V DC,<br>Nominal  |
| Reserved                 |  |   | 26  | Reserved for APD.  |
| Reserved                 |  |   | 13  | Reserved.  |

**Electrical Pad Layout**



**Fig 1-X2 Transponder Electrical Pad Layout**

**II. Absolute Maximum Ratings**

| Parameter  | Symbol       | Limit Values |      | Unit |
|--|--------------|--------------|------|------|
|  |              | min.         | max. |      |
| Storage Ambient Temperature <sup>1)</sup>        | $T_S$        | -40          | 85   | °C   |
| Operating Case Temperature <sup>1)</sup>         | $T_C$        | 0            | 70   | °C   |
| Supply Voltage +5.0 V                            | $V_5$        | 0            | 6    | V    |
| Supply Voltage +3.3 V                            | $V_3$        | 0            | 4    | V    |
| Supply Voltage APS                               | $V_{aps}$    | 0            | 1.5  | V    |
| Static Discharge Voltage, All Pins <sup>2)</sup> | $ST_d$       |              | 500  | V    |
| Average Receive Optical Power                    | $RX_P_{max}$ |              | 1.5  | dBm  |

Notes:

- 1) Non-condensing.
- 2) HBM.

Exceeding any one of these values may permanently destroy the device.

### III. Electrical Characteristics

#### Recommended Operating Conditions

| Parameter                                | Symbol             | Values |      |       | Unit |
|--|--------------------|--------|------|-------|------|
|  |                    | min.   | typ. | max.  |      |
| Operating Case Temperature <sup>1)</sup> | $T_C$              | 0      |      | 70    | °C   |
| Transponder Total Power Consumption      | $P$                |        |      | 2.2   | W    |
| Supply Voltage +5.0 V                    | $V_{CC5}$          | 4.75   | 5.0  | 5.25  | V    |
| Supply Current +5.0 V                    | $I_{CC5}$          |        | 157  | 190   | mA   |
| Supply Voltage +3.3 V                    | $V_{CC3}$          | 3.14   | 3.3  | 3.47  | V    |
| Supply Current +3.3 V                    | $I_{CC3}$          |        | 55   | 72    | mA   |
| Supply Voltage APS                       | $V_{CC\text{aps}}$ | 1.152  | 1.2  | 1.248 | V    |
| Supply Current APS                       | $I_{CC\text{aps}}$ |        | 830  | 850   | mA   |

<sup>1)</sup> Measured at reference thermal location, see **Figure 2**.  
See also **Environmental Performance**.

#### Electrical DC Characteristics

( $V_{CC5}$  = 4.75 V to 5.25 V,  $V_{CC3}$  = 3.14 V to 3.47 V,  $V_{CC\text{aps}}$  = 1.152 V to 1.248 V,  $T_C$  = 0°C to 70°C)

| Parameter  | Symbol                 | Values |      |      | Unit       |
|--|------------------------|--------|------|------|------------|
|  |                        | min.   | typ. | max. |            |
| <b>1.2 V CMOS (1.8 V CMOS Compatible<sup>1)</sup>) I/O DC Characteristics (PRTAD; LASI; RESET; TX_ONOFF)</b> |                        |        |      |      |            |
| External Pull-up Resistor for Open Drain   | $R_{\text{pullup}}$    | 10     |      | 22   | k $\Omega$ |
| Output High Voltage <sup>2)</sup>  | $V_{\text{oh}}$        | 1      |      |      | V          |
| Output Low Voltage <sup>2)</sup>   | $V_{\text{ol}}$        |        |      | 0.15 | V          |
| Input High Voltage   | $V_{\text{ih}}$        | 0.84   |      | 1.5  | V          |
| Input Low Voltage  | $V_{\text{il}}$        |        |      | 0.36 | V          |
| Input Pull-down Current <sup>3)</sup>  | $I_{\text{pd}}$        | 20     |      | 120  | $\mu$ A    |
| <b>XAUI I/O DC Characteristics (TXLANE[0..3]; RXLANE[0..3])</b>  |                        |        |      |      |            |
| Differential Input Amplitude (pk-pk) <sup>4)</sup>   | $V_{\text{in\_xaui}}$  | 200    |      | 2500 | mV         |
| Differential Output Amplitude (pk-pk) <sup>4)</sup>  | $V_{\text{out\_xaui}}$ | 800    |      | 1600 | mV         |
| <b>MDIO I/O DC Characteristics (MDIO; MDC)</b>   |                        |        |      |      |            |
| Output Low Voltage <sup>5)</sup>   | $V_{\text{OL}}$        | -0.3   |      | 0.2  | V          |
| Output Low Current   | $I_{\text{OL}}$        |        |      | 20   | mA         |
| Input High Voltage   | $V_{\text{IH}}$        | 0.84   |      | 1.5  | V          |
| Input Low Voltage  | $V_{\text{IL}}$        | -0.3   |      | 0.36 | V          |
| Pull-up Supply Voltage   | $V_{\text{PU}}$        | 0.84   | 1.2  | 1.5  | V          |
| Input Capacitance  | $C_{\text{IN}}$        |        |      | 10   | pF         |
| Load Capacitance   | $C_{\text{LOAD}}$      |        |      | 470  | pF         |
| External Pull-up Resistance  | $R_{\text{LOAD}}$      | 200    |      |      | $\Omega$   |

<sup>1)</sup> For 1.8 V CMOS  $V_{\text{oh}}$  = 1.65 V min.,  $V_{\text{ol}}$  = 0.15 V max.,  $V_{\text{ih}}$  = 1.17 V min.,  $V_{\text{il}}$  = 0.63 V max.

<sup>2)</sup>  $R_{\text{pull-up}}$  = 10 k $\Omega$  to 1.8 V.

<sup>3)</sup>  $V_{\text{in}}$  = 1.8 V.

<sup>4)</sup> AC coupled.

<sup>5)</sup>  $I_{\text{OL}}$  = 100  $\mu$ A

**Electrical AC Characteristics**(V<sub>CC5</sub> = 4.75 V to 5.25 V, V<sub>CC3</sub> = 3.14 V to 3.47 V, V<sub>CCaps</sub> = 1.152 V to 1.248 V, T<sub>C</sub> = 0°C to 70°C)

| Parameter  | Symbol  | Values |                 |      | Unit              |
|--|---|--------|-----------------|------|-------------------|
|  |   | min.   | typ.            | max. |                   |
| <b>XAUI Input AC Characteristics (TXLANE[0..3])</b>  |   |        |                 |      |                   |
| Baud Rate<br>Fibre Channel<br>Ethernet               | R <sub>XAUIIN</sub>                             |        | 3.1875<br>3.125 |      | Gbit/s            |
| Baud Rate Tolerance                                  | R <sub>TOLXAUI</sub>                            | -100   |                 | 100  | ppm               |
| Differential Input Impedance                         | Z <sub>INXAUI</sub>                             | 80     | 100             | 120  | Ω                 |
| Differential Return Loss <sup>1)</sup>               | S <sub>11</sub>                                 | 10     |                 |      | dB                |
| Input Differential Skew <sup>2)</sup>                | t <sub>SKEWIN</sub>                             |        |                 | 75   | ps                |
| Jitter Amplitude Tolerance <sup>3)</sup>             | J <sub>XAUITOL</sub>                            |        |                 | 0.65 | UI <sub>p-p</sub> |
| <b>XAUI Output AC Characteristics (RXLANE[0..3])</b> |   |        |                 |      |                   |
| Baud Rate<br>Fibre Channel<br>Ethernet               | R <sub>XAUIOUT</sub>                            |        | 3.1875<br>3.125 |      | Gbit/s            |
| Baud Rate Variation                                  | R <sub>XAUIVAR</sub>                            | -100   |                 | 100  | ppm               |
| XAUI Eye Mask (far-end)                              | According to IEEE 802.3ae and 10G Fibre Channel |        |                 |      |                   |
| Output Differential Skew                             | t <sub>SKEWOUT</sub>                            |        |                 | 15   | ps                |
| Output Differential Impedance                        | Z <sub>OUTXAUI</sub>                            | 80     | 100             | 120  | Ω                 |
| Differential Output Return Loss <sup>1)</sup>        | S <sub>22</sub>                                 | 10     |                 |      | dB                |
| Total Jitter <sup>4)</sup>                           | TJ <sub>XAUI</sub>                              |        |                 | 0.35 | UI                |
| Deterministic Jitter <sup>4)</sup>                   | DJ <sub>XAUI</sub>                              |        |                 | 0.37 | UI                |
| <b>Power-On Reset AC Characteristics</b>             |   |        |                 |      |                   |
| Power-On Reset and TX_ONOFF Characteristics          | According to XENPAK MSA Issue 3.0, 2002-9-18    |        |                 |      |                   |
| <b>MDIO I/O AC Characteristics (MDIO; MDC)</b>       |   |        |                 |      |                   |
| MDIO Data Hold Time                                  | t <sub>HOLD</sub>                               | 10     |                 |      | ns                |
| MDIO Data Setup Time                                 | t <sub>SU</sub>                                 | 10     |                 |      | ns                |
| Delay from MDC Rising Edge to MDIO Data Change       | t <sub>DELAY</sub>                              |        |                 | 300  | ns                |
| MDC Clock Rate                                       | f <sub>MAX</sub>                                |        |                 | 2.5  | MHz               |

1) 100 MHz to 2.5 GHz.

2) At crossing point.

3) Per IEEE Std 802.3ae.

4) At near-end, No pre-equalization, 1 UI = 320 ps.

**IV. Optical Characteristics**

( $V_{CC5} = 4.75 \text{ V to } 5.25 \text{ V}$ ,  $V_{CC3} = 3.14 \text{ V to } 3.47 \text{ V}$ ,  $V_{CC\text{aps}} = 1.152 \text{ V to } 1.248 \text{ V}$ ,  $T_C = 0^\circ\text{C to } 70^\circ\text{C}$ , BER 1E-12, Bit Rate 10.3125)

| Parameter                                  | Symbol                              | Values   |      |       | Unit  |
|--|-------------------------------------|--|------|-------|-------|
|  |                                     | min.   | typ. | max.  |       |
| <b>Transmitter</b>                         |                                     |  |      |       |       |
| Launch Power in OMA <sup>1)</sup>          | $P_{O\text{-OMA}}$                  | -2.8   | -1.5 |       | dBm   |
| Average Launch Power                       | $P_{O\text{-Avg}}$                  | -5   |      | -1    | dBm   |
| TDP  | TDP                                 |  |      | 3.9   | dB    |
| Center Wavelength Range <sup>1)</sup>      | $\lambda_{C\text{-Tx}}$             | 840  | 850  | 860   | nm    |
| RMS Spectral Width <sup>1)</sup>           | $\sigma_I$                          |  | 0.4  | 0.45  | nm    |
| Extinction Ratio                           | ER                                  | 3  | 5.5  |       | dB    |
| Relative Intensity Noise <sub>12</sub> OMA | RIN                                 |  |      | -128  | dB/Hz |
| Eye Mask Definition                        | According to IEEE and Fibre Channel |  |      |       |       |
| Encircled Flux                             | EF                                  | at $19 \mu\text{m} \geq 86\%$ , at $4.5 \mu\text{m} \leq 30\%$ |      |       |       |
| Optical Return Loss Tolerance              | $ORL_T$                             |  |      | 12    | dB    |
| Average Launch Power of OFF Transmitter    | $P_{O\text{-OFF}}$                  |  |      | -30   | dBm   |
| <b>Receiver</b>                            |                                     |  |      |       |       |
| Stressed Receiver Sensitivity in OMA       | $P_{IN\text{-S}}$                   |  |      | -7.5  | dBm   |
| Receiver Sensitivity in OMA <sup>2)</sup>  | $P_{IN}$                            |  |      | -11.1 | dBm   |
| Average Receive Power                      | $P_{IN\text{-max}}$                 |  |      | -1    | dBm   |
| Signal Detect Deassert Level               | $P_{SDL}$                           |  |      | -14.5 | dBm   |
| Signal Detect Assert Level                 | $P_{SD}$                            | -18.0  |      |       | dBm   |
| Signal Detect Hysteresis                   | $P_{SD}$                            | 0.5  | 1.5  |       | dB    |
| Receiver Reflectance                       | $REF_{RX}$                          |  |      | -12   | dB    |
| Center Wavelength Range                    | $\lambda_{C\text{-RX}}$             | 840  |      | 860   | nm    |

<sup>1)</sup> Conforms to IEEE triple trade-off between center wavelength, RMS spectral width and minimum OMA.

<sup>2)</sup> Receiver sensitivity, which is defined for an ideal input signal is informative only.

**V. General Specifications****Optical Interface Standard Specifications**

| Standard      | Fiber Type             | Minimum Modal Bandwidth at 850 nm (MHz*km) | Operating Range <sup>1)</sup> (meters) |
|---------------|------------------------|--|--|
| IEEE          | 62.5 $\mu\text{m}$ MMF | 160  | 2 to 26                                |
|               | 50 $\mu\text{m}$ MMF   | 400  | 2 to 66                                |
| Fibre Channel | 62.5 $\mu\text{m}$ MMF | 200  | 0.5 to 33                              |
|               | 50 $\mu\text{m}$ MMF   | 500  | 0.5 to 82                              |
|               | 50 $\mu\text{m}$ MMF   | 2000                                       | 0.5 to 300                             |

Notes:

1) Operating range as defined by IEEE and Fibre Channel standards. Longer reach possible depending upon link implementation.

**Environmental Performance**

Operating case temperature: 0°C to +70°C  
 Operating humidity: 0% -95% RH non-condensing

**Fibers and Connectors**

The transponder has SC receptacles for both Tx and Rx. The transponder is designed for multimode SC cables, 0° polished endface (PC).

**70-pin Connector**

The module interface connector is a 70-pin, printed circuit board edge connection with a 0.5 mm pitch. The appropriate mating connector for the customer PCB is a 70-pin SMT, dual row, right angled, edge connector, 0.5 mm pitch (Tyco Electronics part number 1367337-1, Molex part number 74441-0003 or equivalent).

**Rail and Mechanical Mounting Requirements**

The X2 rail system required to mount the X2 module is fully defined by the MSA. (Tyco Electronics part number 1367608-1: designed for belly to belly applications; and 1367610-1, designed for single sided board mount to fit into the standard host PCB footprint; or equivalent). For further details please refer to vendor-supplied information.

**Aqueous Wash**

Finisar X2 transponders are neither solderable nor aqueous washable and are not intended for these processes.

**VI. Regulatory Compliance**

| Feature   | Standard   | Comments  |
|---|--|---|
| ESD:<br>Electrostatic Discharge to the Electrical Pins (HBM)                | EIA/JESD22-A114-B<br>(MIL-STD 883D<br>Method 3015.7)           | Class 1a (> 500 V)  |
| Immunity:<br>Against Electrostatic Discharge (ESD) to the Module Receptacle | EN 61000-4-2<br>IEC 61000-4-2                                  | Discharges ranging from $\pm 2$ kV to $\pm 25$ kV to the front end / faceplate / receptacle cause no damage to module (under recommended conditions).                                 |
| Immunity:<br>Against Radio Frequency Electromagnetic Field                  | EN 61000-4-3<br>IEC 61000-4-3                                  | With a field strength of 10 V/m, noise frequency ranges from 10 MHz to 2 GHz. No effect on module performance between the specification limits.                                       |
| Emission:<br>Electromagnetic Interference (EMI)                             | FCC 47 CFR<br>Part 15, Class B<br>EN 55022 Class B<br>CISPR 22 | Noise frequency range:<br>30 MHz to 40 GHz<br>Radiated emission does not exceed specified limits when measured with module inside a shielding enclosure with a MSA conforming cutout. |



**Eye Safety**

Finisar FTLX8541 transponders are Class 1 Laser Products. They are certified per the following standards:

| Feature           | Agency   | Standard   | Certificate Number |
|-------------------|----------|--|--------------------|
| Laser Eye Safety  | FDA/CDRH | CDRH 21 CFR 1040 and Laser Notice 50   | 9210176-77         |
| Laser Eye Safety  | TÜV      | EN 60825-1: 1994+A11:1996+A2:2001<br>IEC 60825-1: 1993+A1:1997+A2:2001<br>IEC 60825-2: 2000, Edition 2 | R 72052602         |
| Electrical Safety | TÜV      | EN 60950   | R 72052602         |
| Electrical Safety | UL/CSA   | CLASS 3862.07<br>CLASS 3862.87   | 1439230            |

Copies of the referenced certificates will be available at Finisar Corporation upon request.

**VII. DOM Parameters**

| Parameter  | Values |      |      | Unit |
|--|--------|------|------|------|
|  | min.   | typ. | max. |      |
| Transponder Temperature Monitor Accuracy <sup>1)</sup> | -5     |      | +5   | °C   |
| Laser Bias Current Monitor Accuracy <sup>2)</sup>      | -10    |      | +10  | %    |
| Transmit Power Monitor Accuracy <sup>3)</sup>          | -3     |      | +3   | dB   |
| Receive Power Monitor Accuracy <sup>3)</sup>           | -3     |      | +3   | dB   |

<sup>1)</sup> 0 to 70°C case temperature.

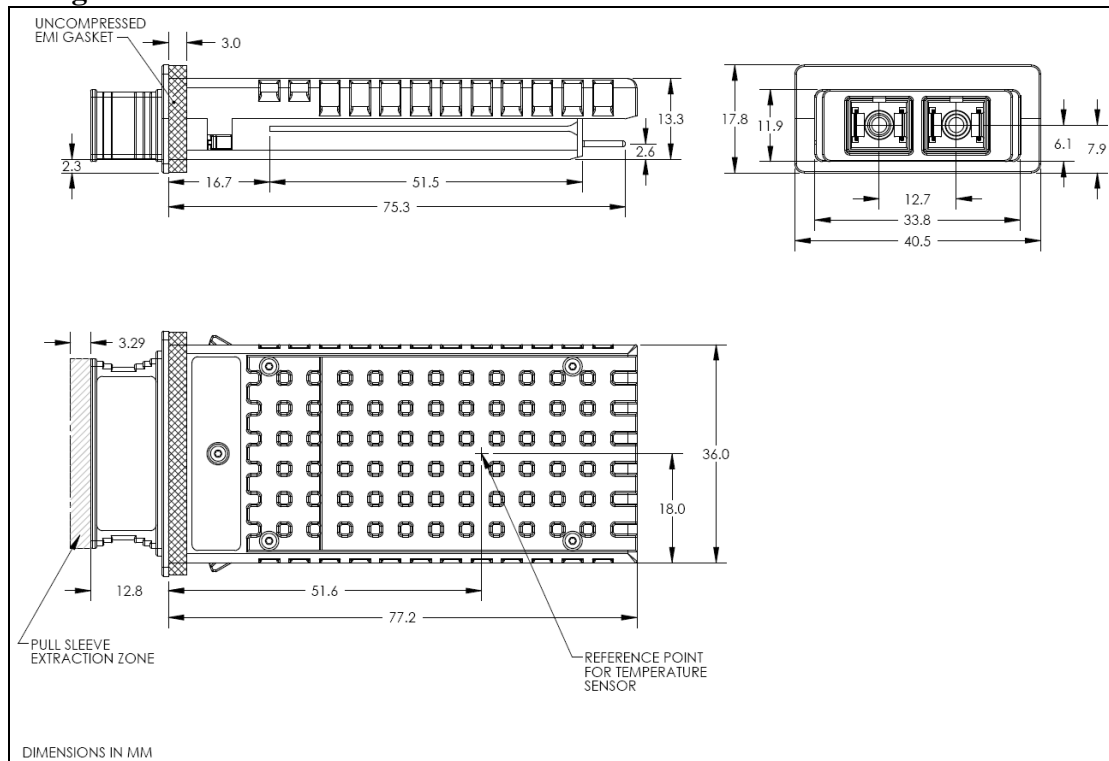
<sup>2)</sup> 0 to 12.5 mA.

<sup>3)</sup> -8.2 dBm to +0.5 dBm.

**VIII. Mechanical Specifications**

| Parameter                                  | Symbol             | Values |      |      | Unit |
|--|--------------------|--------|------|------|------|
|  |                    | min.   | typ. | max. |      |
| Module Retention Force (latch strength)    | F <sub>RET</sub>   |        | 200  |      | N    |
| Module Insertion Force                     | F <sub>IN</sub>    |        | 40   |      | N    |
| Module Extraction Force (with kick-out)    | F <sub>EXT-K</sub> |        | 16   |      | N    |
| Module Extraction Force (without kick-out) | F <sub>EXT</sub>   |        | 25   |      | N    |

Pull Sleeve front face color is beige.

**Package Outline****Figure 2 - X2 Mechanical Dimensions****IX. References****Optical Interface Standard Specifications References**

- IEEE Std 802.3ae-2002 clause 52, 10GBASE-SR
- Fibre Channel 10GFC Draft 4.0, 1200-M5-SN-I
- Fibre Channel 10GFC Draft 4.0, 1200-M5E-SN-I
- Fibre Channel 10GFC Draft 4.0, 1200-M6-SN-I
- X2 MSA Issue 2.0b

**Electrical Interface Standard Specifications References**

- IEEE Std 802.3ae-2002 clause 45 & 47
- X2 MSA Issue 2.0b

**X. For More Information**

Finisar Corporation  
 1389 Moffett Park Drive  
 Sunnyvale, CA 94089-1133  
 Tel. 1-408-548-1000  
 Fax 1-408-541-6138  
[sales@finisar.com](mailto:sales@finisar.com)  
[www.finisar.com](http://www.finisar.com)

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)  
Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)