

KEY FEATURES

- 100Gb/s = 10x10Gb/s
- 100GBASE-ER10
- 40km reach
- 400GHz wavelength spacing
- APD receiver

10x10 Gb/s WDM ER10 ROSA *with 40km Reach*

The **KAIAM** WDM ER10 ROSA is a 100G receiver optical sub-assembly incorporating 10 independent WDM channels, on an 400GHz wavelength grid, with each channel operating from 9.95 Gb/s to 11.1908 Gb/s. The WDM ER10 ROSA for each channel consists of a APD photodiode with a limiting transimpedance amplifier. All 10 wavelength channels are demultiplexed from one single mode input fiber by the use of an optical demultiplexer chip.

The WDM ER10 ROSA is designed to work in point-to-point unamplified links with dispersion reaches up to 40km using G.652 compliant fiber.



OPTICAL RECEIVER PERFORMANCE

| PARAMETER | SYM | UNITS | MIN | TYP | MAX | CONDITIONS/COMMENTS |
|--|-----|-------|-----|-----|-------|--|
| Receiver Sensitivity in OMA | OMA | dBm | | | -16.4 | BER < 10 ⁻¹² Typical M=8 |
| Maximum Received Optical Power (Overload, per channel) | | dBm | | | -4 | BER < 10 ⁻¹² Maximum M=TBD |
| Receiver Reflectance | | dB | | | -27 | |
| Loss of Signal Assert (LOS, per channel) | | dBm | TBD | | | |
| LOS Hysteresis | | dB | 1 | | 4 | |

OPTICAL LINK PARAMETERS

| PARAMETER | | UNITS | MIN | MAX | CONDITIONS/COMMENTS |
|-----------|-------------|-------|-----------------|-----|---------------------|
| Data Rate | 10 x OC-192 | Gb/s | 9.95328 ±20ppm | | |
| | 100GbE | | 10.3125 ±100ppm | | |
| | OTU4 | | 11.1809 ±20ppm | | |

WAVELENGTH ASSIGNMENTS

| PARAMETER | UNITS | MIN | MAX | CONDITIONS/COMMENTS |
|-------------------|-------|--------|-----|---------------------|
| WDM Channel Count | | 10 | | |
| Channel Spacing | GHz | 400 | | |
| Channel width | nm | -2 | +2 | from center |
| CHANNEL | UNITS | CENTER | | |
| Ch1 | nm | 1523 | | |
| Ch2 | nm | 1531 | | |
| Ch3 | nm | 1539 | | |
| Ch4 | nm | 1547 | | |
| Ch5 | nm | 1555 | | |
| Ch6 | nm | 1563 | | |
| Ch7 | nm | 1571 | | |
| Ch8 | nm | 1579 | | |
| Ch9 | nm | 1587 | | |
| Ch10 | nm | 1595 | | |

ELECTRICAL SPECIFICATIONS

| PARAMETER | SYM | UNITS | MIN | TYP | MAX | CONDITIONS/COMMENTS |
|---|----------------------|-------|------|------|-------|---|
| Responsivity (M=1) | R _{pd} | A/W | 0.12 | 0.25 | | Includes DeMux loss |
| Upper 3dB Bandwidth | BW | GHz | 8 | 9 | | No external control |
| Receiver Signal Strength Indicator Gain | RSSI | A/W | | 0.12 | | M=1 |
| Differential Transimpedance Gain | ZTIA | Ω | 2300 | | 16000 | |
| Data Differential Output Swing | V _{out} | mVpp | 100 | | | Must be AC coupled outside ROSA; at -16.4dBm OMA into ROSA and M=8 |
| Differential Output Return Loss | S _{22DD} | dB | | -9 | | <8.5GHz |
| Differential Output Impedance | Z _{outdiff} | Ω | | 100 | | DC |
| APD Breakdown | VAPD | V | 22 | | 35 | |
| Temperature Dependence of VAPD | dVAPD /dT | mV/°C | | 25 | | |
| Supply Current VTIA | ITIA | mA | | 60 | | per channel |

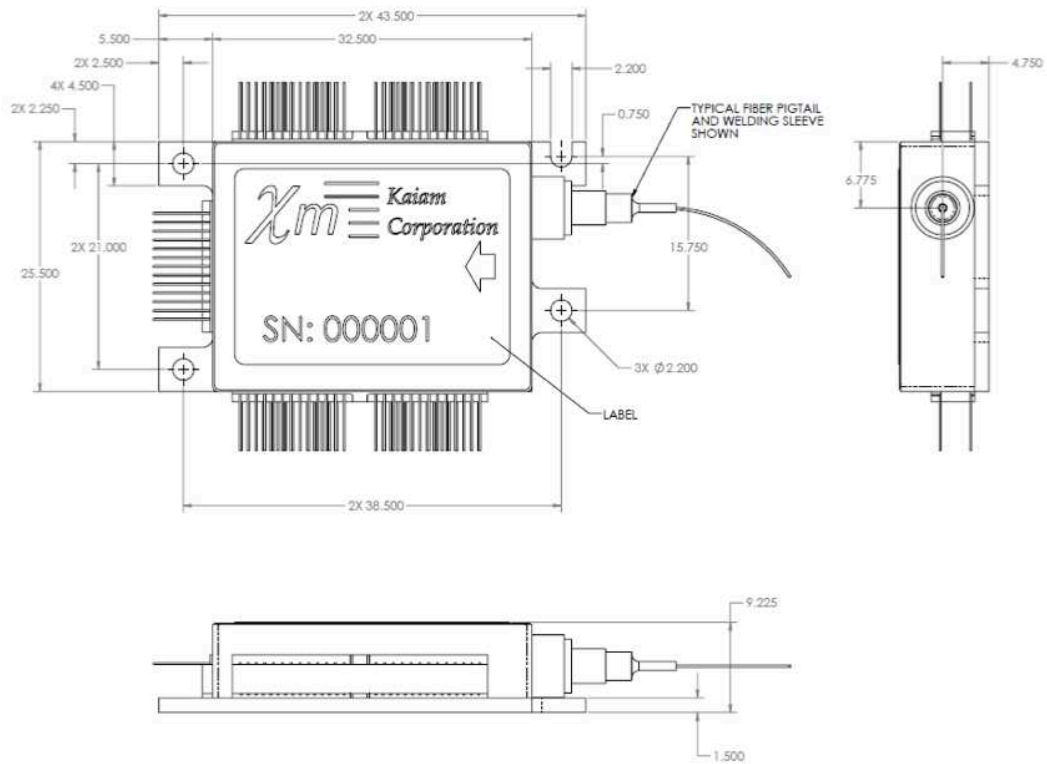
OPERATING CONDITIONS

| PARAMETER | UNITS | MIN | MAX |
|----------------------------|-------|-------|-------|
| Operating Case Temperature | °C | -5 | +75 |
| DC Supply Voltage | V | 3.135 | 3.465 |

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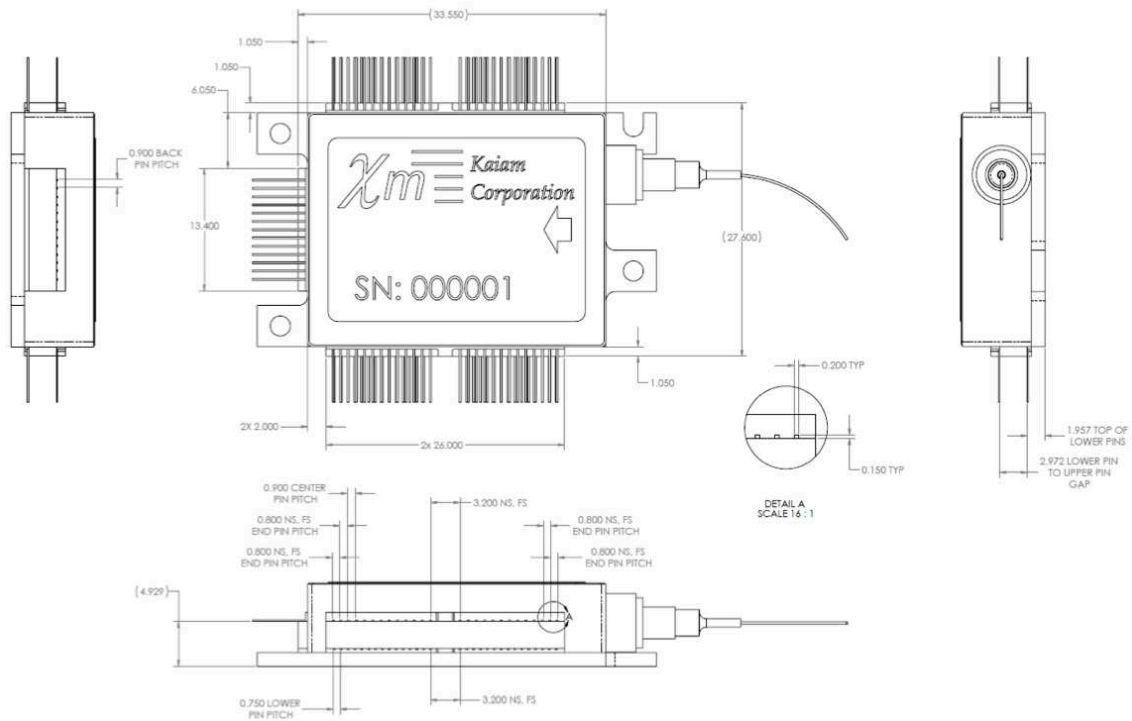
WDM ER10 ROSA MECHANICAL OUTLINE

(all dimensions in mm)



WDM ER10 ROSA LEAD DIMENSIONS

(all dimensions in mm)



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