

RIO26xx 2.5Gbps 1550nm DWDM Directly Modulated TOSA

PLANEX™ External Cavity Laser (ECL)

RIO (Redfern Integrated Optics) 26xx TOSA series are high performance cost effective directly modulated 2.5 Gbps External Cavity Laser (ECL) TOSA TDM and DWDM devices for **SONET/SDH** applications. The design is based on RIO's proprietary planar technology - **PLANEX** - and consists of a high speed gain chip and a planar waveguide circuit (PLC) with Bragg grating, forming a laser cavity with significant advantages, such as:

- ✓ Low chirp or negative chirp, resulting in long reach up to 640 km
- ✓ Low wavelength sensitivity to temperature and bias current
- ✓ High output optical power
- ✓ Low power consumption
- ✓ Direct-modulated laser in small form factor

The RIO ECL TOSAs combine high performance, comparable with externally modulated lasers, with the low cost and simplicity of directly modulated lasers, offering significant advantages over EML.

The TOSA is designed in a miniature hermetically sealed package, providing low dispersion power penalty for up to 640 km at low cost.

Input impedance 25 Ohms and 50 Ohms available.

The wavelength stability is provided by design, eliminating the need for wavelength lockers for DWDM application.

Performance Highlights

| Performance | Device | Min | Typ | Max | Unit |
|---|--|------|-----|------|---------|
| Output Power | all | 0 | | 4 | dBm |
| Threshold Current | all | | 10 | 15 | mA |
| Modulation Current | all | 30 | | 50 | mA, p-p |
| Operation Case Temperature | all | -5 | | 75 | °C |
| Extinction Ratio | all | 9 | | | dB |
| Dispersion penalty 120 km (2,400 ps/nm) 180 km (3,600 ps/nm) 360 km (7,200 ps/nm) 640 km (12,800 ps/nm) | RIO262x RIO263x RIO264x RIO265x | | | 2 | dB |
| Center Wavelength DWDM ITU | all | 1530 | | 1565 | nm |
| Side Mode Suppression Ratio | all | 35 | 45 | | dB |
| Power Dissipation | all | | 0.5 | 0.7 | W |



FEATURES

- Direct modulation up to 2.7 Gbps data rates
- Long Reach up to 640 km
- Wavelength 1530nm - 1565nm ITU-T DWDM C-band
- Standard LC and SC connector receptacle
- -5 to 75°C Operating case temperature
- 500 mW power consumption

APPLICATIONS

- SONET/SDH OC-48/STM16
- Telecom & Datacom
- Video transport
- Metro Area Networks
- Line cards, transponders and SFF/ SFP transceivers