

RIO44xx 4.25Gbps 1550nm C/DWDM Directly Modulated TOSA

PLANEX™ External Cavity Laser (ECL)

RIO (Redfern Integrated Optics) 44xx TOSA series are high performance cost effective directly modulated up to 4.25 Gbps External Cavity Laser (ECL) TOSA TDM and DWDM devices for **Fibre Channel** 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 160 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 160 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 80 km (1600 ps/nm) 120 km (2400 ps/nm) 160 km (3200 ps/nm)	RIO441x RIO442x RIO443x			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 4.25 Gbps data rates
- Long Reach up to 180 km
- Wavelength 1530nm - 1565nm ITU-T DWDM C-band
- Standard LC and SC connector receptacle or pigtail
- -5 to 75C Operating case temperature
- 500 mW power consumption

APPLICATIONS

- 2.125/4.5 Gbps Fiber Channel
- Telecom & Datacom
- TDM and DWDM
- MAN/SAN
- Line cards, transponders and SFF/SFP transceivers