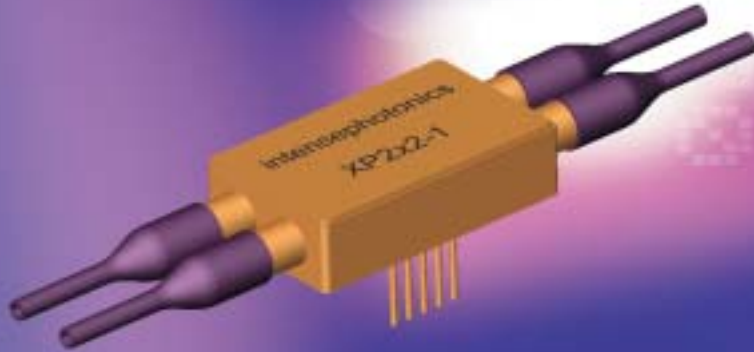


Monolithic 2x2 crosspoint optical packet switch

XP2x2-1



FEATURES

- high bandwidth
- high switching speed
- zero insertion loss
- polarization insensitive
- small form factor

APPLICATIONS

- network reconfiguration
- network protection & restoration switching
- optical add/drop multiplexers
- DWDM space switches

PRELIMINARY
DATA

XP2x2-1 is a monolithic 2x2 crosspoint optical packet switch fabricated utilizing Intense Photonics' unique quantum well intermixing (QWI) technology. The device's monolithic fabrication of active semiconductor elements provides the very high switching speeds (1 nsec) required for packetized network operation, and advanced dynamic management of bandwidth.

QWI allows the integration of the components required for crosspoint switching: semiconductor optical amplifiers, electro-absorption modulators, and passive structures - on a single indium phosphide (InP) chip. QWI does not rely on regrowth, and the multiple bandgaps required to implement these functions are fabricated in a single processing stage, for reliable high-yield production. This approach results in a compact,

low cost, high performance and reliable switch, which is ideal for optical network reconfiguration applications. A key advantage of InP-based crosspoint switch technology is its very high switching speed (1 nsec) when compared with alternatives such as MEMS or LCDs.

By incorporating semiconductor optical amplifiers (SOAs) into the device, zero insertion loss is

achieved across the entire C wavelength band. L band variations are also available. The 2x2 switch forms a flexible building block for cascading into $N \times N$ configurations suitable for delay lines in packet switches, or space switches for DWDM systems.

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Intense Photonics XP2x2-1 specifications (preliminary).

Parameter	Minimum	Typical	Maximum
Wavelength (nm)	1525		1565
Insertion loss (dB)	0		
Polarization dependent loss (dB)			0.1
Extinction ratio (dB)		35	
Switching time (nsec)			1
Switching voltage (V)		3	
SOA drive current (mA)	100		200
Max. input power (dBm)		10	
Crosstalk (dB)	-35		
Chip dimensions (mm ²)	0.5x3		

The above parameters are measured at the following conditions unless otherwise stated: temperature: 25 °C; wavelength: 1550 nm.



Quality statement.

Intense Photonics manufactures optical components at its own facility located in Europe, giving the company complete control over the III-V semiconductor fabrication process. The organization is committed to delivering products of the highest possible quality and reliability, and operates an enterprise-wide Total Quality Culture (TQC) program. Intense Photonics designs and manufactures according to ISO 9001 quality control standards, and expects to gain formal accreditation by the end of 2002. Test procedures have been designed to conform with the Telcordia GR-468-CORE standard.



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