



LEO SPACE PHOTONICS

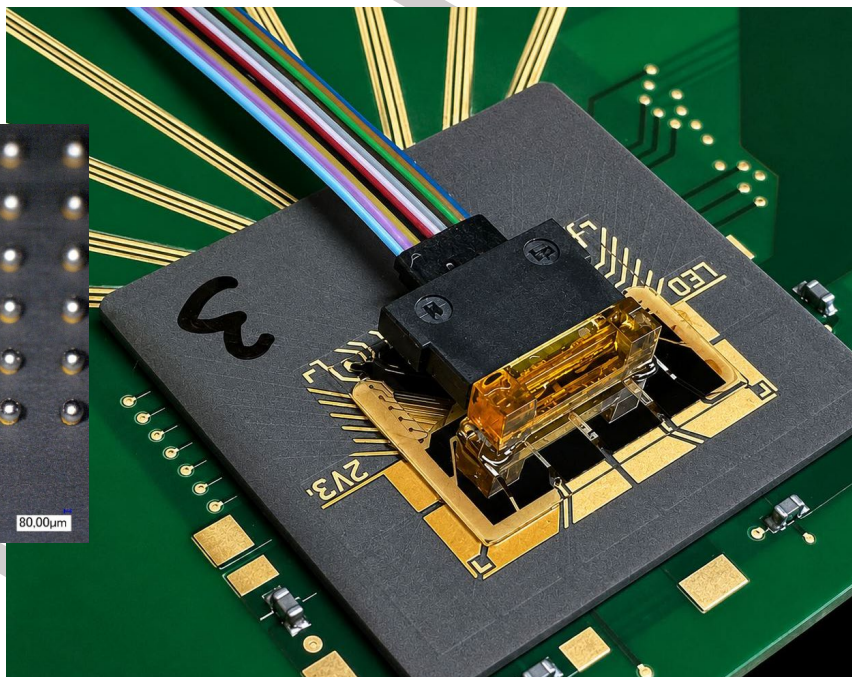
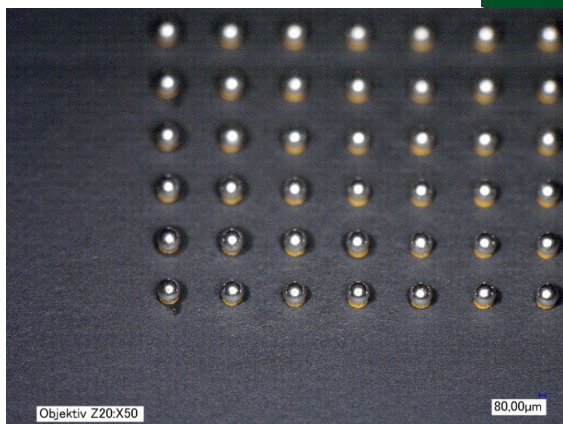
LEO-OTRx-FS-2804

Solder-reflowable VCSEL Optical Engine for Near-Package Optical Interconnects

Description

- 850 nm VCSEL optical transceiver
- >100 Gb/s aggregate line rate across 4 channels
- GaAs VCSEL & PIN photodiode arrays
- Low-power SiGe BiCMOS VCSEL driver & TIA chipset
- Ultra-compact surface-mount package: 19.2 x 17.6 mm footprint, < 1 g mass
- BGA interface for direct solder reflow on the host board
- Removable low-profile MT optical connector for multimode ribbon fiber array coupling
- Flip-chip assembly on fine-pitch glass & use of thermally conductive ceramic substrate

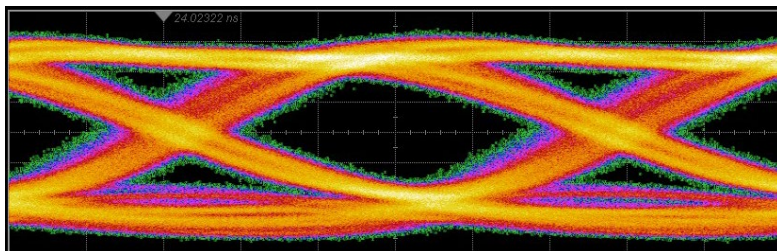
Device



Applications

- Near-Package Optical Interconnects
- Harsh-Environment Optical Links
- AI & HPC Optical Interconnects
- Data Center Optical Networking
- Automotive Optical Links

Performance



30 Gb/s optical Tx eye diagram
Measured at RT, PRBS 2⁷-1



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Specifications

Parameter	Symbol	Condition	Value			Unit	Notes
			Min	Typ.	Max		
Operating wavelength	λ	-		850		nm	
Signalling rate, each lane	SR	-		28		Gb/s	NRZ OOK
Average launch optical power, each lane	Tx_avg	-	0			dBm	at RT
Extinction ratio	ER	-	3			dB	at RT
Optical modulation amplitude	OMA	VCSEL ER 3 dB	-1.76			dBm	at RT
Aggregate module power consumption	P_OTRx	VCCTx 3.3V VCCRx 2.5V		440		mW	3.9 pJ/bit at 4x 28 Gb/s
Differential input voltage swing	ΔV_{in-pp}	-		600		mV	
Differential output voltage swing	ΔV_{o-pp}	-		300		mV	

Drawing

