InP-TRANSMITTER CHIPS
FOR HYBRID INTEGRATION

AT A GLANCE
InP light sources for application in photonic multi-chip approaches

Features
- flip-chip configuration
- horizontal and vertical integration (2D and 3D)
- integrated taper for low optical coupling
- patented alignment structures for lateral & vertical positioning
- etched facets on request
- flexible adaption of devices corresponding to customer’s photonic platforms

Applications
- Telecom/Datacom
- Sensors

Technical Background
- InGaAsP MQW device
- n-InP substrate
Functionality

• high power DFB-lasers
• high power gain chips
• high speed gain chips
• semiconductor optical amplifiers (SOAs)

Configuration

• horizontal and vertical emitters
• single chips and array

Photonic platforms

• Silicon on Insulator (SOI)
• Silicon-Nitride (SiN)
• Glass
• Polymer

Example: Tolerant low-loss-butt-joint coupling of InP chip to SOI-waveguide

Measured alignment tolerance of DFB laser to SOI waveguide

Power coupled to SiN-waveguide and optical spectra for flip-chip integrated DFB laser