

# **Bidirectional electrostatic MEMS tunable VCSELs**

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III-V wafer bonded on an SOI allows for bidirectional actuation of a Silicon micro electromechanical system (MEMS) high contrast grating (HCG) mirror. Applying a large voltage on the static outer electrodes allows for linear wavelength tuning and reduction of the AC voltage required for stiff MEMS.

This has the potential to break the unidirectional actuation trade-off between ultra-fast (stiff) MEMS and wavelength tuning range (fractional bandwidth).