FUJITSU THE POSSIBILITIES ARE INFINITE

MEMS Optical Switches

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Abstract

Micro-Electro-Mechanical Systems (MEMS) are highly-functional microdevices having mechanically moving 3D structures built with precise microfabrication technology based on semiconductor fabrication technology. We are developing large-scale optical switches having MEMS mirror arrays for the next-generation optical networks which enable high-speed and large-capacity data communication.

Technology

- A 128-channel matrix mirror array with dual axis actuator (Figure 1) and a 52-channel 1D mirror array (Figure 2) have been developed.
- A new mirror structure which consists of a vertical comb actuator and a V-shaped torsion bar enables an extremely low drive voltage and high switching speed.

Application Examples

- Optical cross connect (OXC) switches for wavelength division multiplexing (WDM) optical networks
- Optical add/drop multiplexer (OADM)

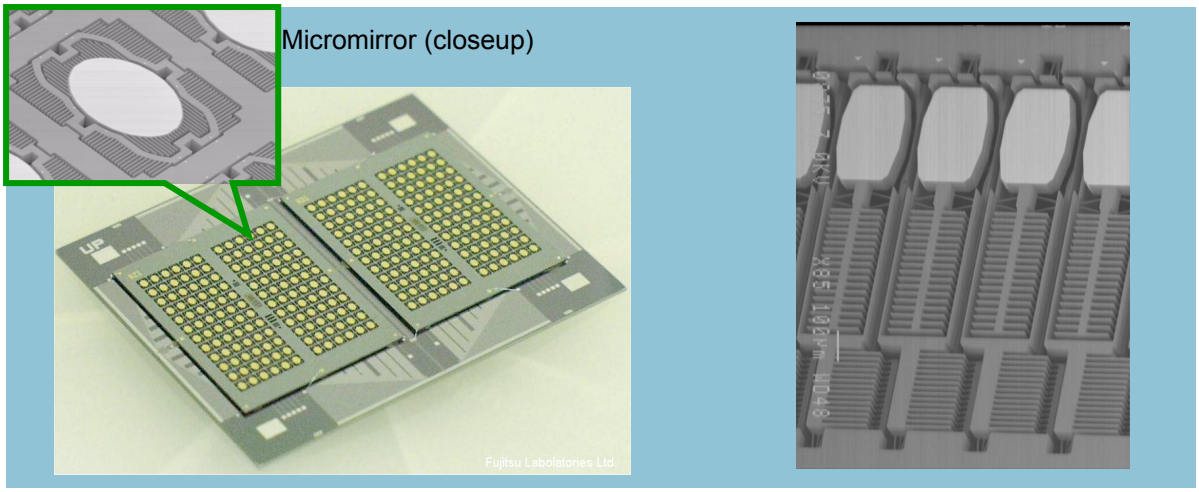

Figure 1. 128 channel matrix mirror array

Figure 2. 52-channel 1-D mirror array