

**AN OPTICAL ATTENUATOR USING A PERTURBATION
ELEMENT WITH A MULTI-MODE WAVEGUIDE**

ABSTRACT OF THE INVENTION

- 5 An optical attenuator having a multi-mode waveguide segment and a perturbation element. An incident single-mode optical signal is converted to a multi-mode optical signal in the multi-mode waveguide segment. The optical attenuator couples incident light into higher order modes of the multi-mode waveguide segment resulting in attenuation of the incident optical signal.

