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(54) **Title:** THERMAL OPTICAL PHASE SHIFTER WITH PARTIAL SUSPENDED STRUCTURE

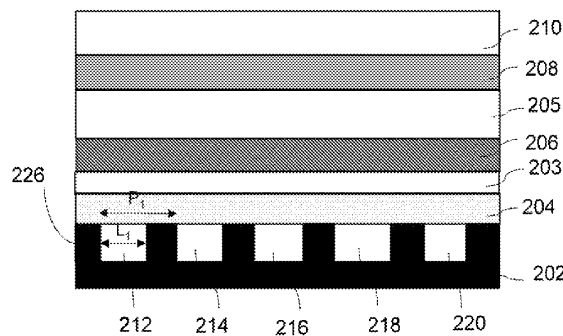


FIG. 2B

(57) **Abstract:** Disclosed embodiments relate to a thermal optical phase shifter and a method for adjusting speed and efficiency of intensity modulation using the thermal optical phase shifters. The thermal optical phase shifters comprise a substrate defining at least one trench within a portion of the substrate and a Buried Oxide (BOX) layer formed above the substrate. The BOX layer is disposed along a length of the substrate. The thermal optical phase shifter comprises a waveguide disposed over the BOX layer to guide an input signal, and the substrate extends partially outwards on opposite sides of the waveguide. The method comprises receiving the input signal by the thermal optical phase shifter, adjusting a voltage applied to a heater of the thermal optical phase shifter and transmitting an output signal from the thermal optical phase shifter.



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