A NEW ELECTROABSORPTION MODULATOR WITH FULL NEGATIVE CHIRP OPERATION USING A PARALLEL FIELD

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Abstract

A parallel field structure that will overcome the previous electroabsorption modulation based on QCSE is proposed and device characteristics are simulated for high-speed, low-driving-voltage operation as well as polarization insensitivity and low insertion loss. A 3-dB bandwidth and the driving-voltage required for 20-dB extinction ratio is estimated to be over 250 GHz and less than 2V, respectively, assuming that the speed is limited by the device capacitance. It has been clear that this device can operate full negative chirp operation with low transmission loss. The superiority of this device to the previous on the allowability of incidental optical power is also discussed.