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(54) Title: SEMICONDUCTOR OPTOELECTRONIC DEVICE WITH POLYMER LAYERS

(57) Abstract: A semiconductor device comprising a semiconductor substrate with a plurality of photodiodes arranged in the semiconductor substrate with interconnect layers defining apertures at the photo-diodes and a first polymer which fills the gaps such as to cover the photo-diode. Further, layers of color filters are arranged on top the gap filling polymer layer opposite to the photo-diodes and a second polymer arranged on the interconnect layers covers and planarizes and passivates the color filter layers. On top of the planarizing polymer there is a plurality of micro-lenses opposite to the color filters, and a third polymer layer is deposited on the microlenses for passivating the micro-lenses. According to the invention the polymer materials are comprised of a siloxane polymer which gives thermally and mechanically stable, high index of refraction, dense dielectric films exhibiting high-cracking threshold, low pore volume and pore size.



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