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| **Title:** | Analysis of Saturation Power based on Device Structural Parameters of a 1550 nm Symmetrical MQW Semiconductor Optical Amplifier | | |
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| **Abstract:** |  |
| This paper presents the effect of device structure parameters on the saturation power of a 1550 nm symmetrical Multi Quantum Well (MQW) Semiconductor Optical Amplifier (SOA) for an amplifier gain of 30 dB. Expressions are given to assess this dependency and the results indicate that saturation power decreases with the increase of the number of wells, well thickness and length but increases with the increase of barrier thickness. Higher number of wells, relatively large well thickness and length with a barrier thickness closer to the well thickness should be chosen for all optical switching and wavelength conversion. The findings of this work can aid SOA design for nonlinear functional devices. | |