Abstracts

Propagation Losses of Guided Modes in an Optical Graded-Index Slab Waveguide with Metal Cladding

M. Masuda, A. Tanji, Y. Ando and J. Koyama. "Propagation Losses of Guided Modes in an Optical Graded-Index Slab Waveguide with Metal Cladding." 1977 Transactions on Microwave Theory and Techniques 25.9 (Sep. 1977 [T-MTT]): 773-776.

Analytical results for propagation Iosses of guided modes in a graded-index slab waveguide (GISW) with metal cladding are presented. When the permittivity in the guiding layer decreases linearly away from the metal surface, the attenuation constant alpha/sub G/ of well-guided modes, TE and TM, is approximately proportional to only the ratio (Delta epsilon/sub i/ / epsilon/sub 0/) / d/sub i/, where Delta epsilon/sub i/ is the increment in the permittivity at the metal surface in the direction of the polarization of optical waves, d/sub i/i is the diffusion depth in this direction, and epsilon/sub 0/ is the permittivity of free space.

❑ Return to main document.