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Title:Consideration to minimize losses in terahertz coplanar waveguide on Indium Phosphide
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Abstract:The aim of this study is to analyze the losses of coplanar waveguide (CPW) in the Terahertz (THz) frequency range. A numerical analysis of the origin of losses (conductor, dielectric and radiation) for different geometries of the THz CPW on an Indium Phosphide substrate is presented. Two air-bridges have been created over the central metallization and they are linked to the two ground planes in order to select the fundamental CPW mode by strongly reducing the unwanted slotline mode. Three numerical codes (HFSS, CST and an indigenously developed code called MAXTRA3D) are used for CPW modeling. Several CPW shapes are investigated showing that ohmic losses are dramatic for small central metallization-ground spacing while radiation losses are dominating for large spacing.
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