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Abstract:Metamaterials are typically comprised by subwavelength resonators periodically distributed on the surface of some dielectric boarding substrates. Their features are largely determined by the properties of substrates and structural details of resonators. Split-ring resonators (SRRs) are extensively used in metamaterials because they can perform numerous functional tasks. In this paper, a 2D hexagonal SRRs array was designed and the effects of unit opening shape, unit cycle and dielectric properties of the embedding medium where the hexagonal SRRs reside on the transmission characteristics were analyzed. The results show that the opening shape can lead to the resonance response of metamaterials at 1-2.5 THz and the dielectric properties of the embedding medium have greater influences on the resonance characteristics.
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