Abstracts

X-band microstrip bandpass filter using photoimageable thick-film materials

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The rapid growth in commercial microwave technology, particularly for wireless communication, has created a demand for low-cost, high quality microwave fabrication technologies that are also suitable for high volume production. Modern thick-film materials are well placed to meet these requirements, in that they offer low conductor and dielectric losses, with good surface finishes and the ability to realise fine conductor geometries. This paper studies the feasibility of realizing microwave bandpass filters using thick-film photoimaging techniques. This enhanced thick-film technology can realise very narrow line width and spacing, giving performance comparable to the more expensive thin-film techniques. This is an inexpensive and mature technology, which looks set to revolutionize the manufacturing of microwave and MM-wave circuits in the near future. The fabricated filter achieved an insertion loss of only 0.7 dB over the frequency range of 9-11 GHz.

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