Abstracts

Miniature Circulators for Microwave Superconducting Systems

A. Fathy, E. Denlinger, D. Kalokitis, V. Pendrick, H. Johnson, A. Pique, K.S. Harshavardhan and E. Belohoubek. "Miniature Circulators for Microwave Superconducting Systems." 1995 MTT-S International Microwave Symposium Digest 95.1 (1995 Vol. I [MWSYM]): 195-198.

Ultraminiature high performance lumped element high temperature (HTS) circulators have been successfully demonstrated. Epitaxial HTS YBCO films have been deposited by pulsed laser deposition (PLD) onto buffered Yitrium Iron Garnet (YIG) substrates with measured surface resistance values (<1mOmega at 10 GHz @ 77K) comparable to those of HTS films on lanthanum aluminate. The lumped element circulators occupy an area about an order of magnitude smaller in size than that of conventional disc junction circulators. Excellent low loss (< 0.23 dB) and high isolation (>30dB) over 5% bandwidth have also been demonstrated.

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