Abstracts

Y-Ba-Cu-O Mixer Antenna Array at 23GHz

K. Suzuki, K. Hayashi, A.T. Murphy, M. Fujimoto, S. Yoshikawa, K. Yamaguchi and Y. Enomoto. "Y-Ba-Cu-O Mixer Antenna Array at 23GHz." 1994 MTT-S International Microwave Symposium Digest 94.2 (1994 Vol. II [MWSYM]): 1001-1004.

The benefits of using Y-Ba-Cu-O Josephson junction mixer for monolithic microwave integrated circuit (MMIC) antenna array are described. The junction is a new flat and lateral structure using a focused-ion-beam (FIB) with less than 10/sup 18/ cm/sup -2/ doses to damage MgO substrates before the Y-Ba-Cu-O film deposition. We have combined a 6 element of the flat and lateral junction in a series in order to improve the mixer impedance, we have also developed a very small size microwave cryostat as an integrated assembly, in which the mixer antenna have been mounted. Using the series junction as a part of a mixer antenna which converted a irradiated microwave frequency from 23 GHz to 1 GHz, a classic music carried with 23 GHz microwave has successfully received by the Y-Ba-Cu-O mixer antenna.

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