

# Abstracts

## Monolithic Image Rejection Optoelectronic Up-Converters that Employ the MMIC Process (1993 [MCS])

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*H. Kamitsuna and H. Ogawa. "Monolithic Image Rejection Optoelectronic Up-Converters that Employ the MMIC Process (1993 [MCS])." 1993 Microwave and Millimeter-Wave Monolithic Circuits Symposium Digest 93.1 (1993 [MCS]): 75-78.*

This paper presents very small 30-GHz-band monolithic image rejection optoelectronic up-converters that employ the HEMT-MMIC process for the first time. An in-phase divider and a branch-line hybrid with two HEMT optoelectronic mixers are successfully integrated in an MMIC chip area of 1.5 mm x 1.1 mm. Fundamental performance is demonstrated and excellent wideband performance, which comes from the well balanced operation of monolithic integrated circuits, is confirmed.

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