

# Abstracts

## Measurement of the Dielectric Constant and Loss Tangent of Thallium Mixed Halide Crystals KRS-5 and KRS-6 at 95 GHz

*W.B. Bridges, M.B. Klein and E. Schweig. "Measurement of the Dielectric Constant and Loss Tangent of Thallium Mixed Halide Crystals KRS-5 and KRS-6 at 95 GHz." 1982 Transactions on Microwave Theory and Techniques 30.3 (Mar. 1982 [T-MTT]): 286-292.*

The dielectric constants and loss tangents of KRS-5 and KRS-6 thallium halide mixed crystals have been measured at 95 GHz using both the shorted waveguide (SWG) reflection method and the Fabry-Perot (F-P) transmission method on samples filling standard WR-10 waveguide. The results--KRS-5:  $\epsilon'/\epsilon_r = 31$ ;  $\tan \delta = 1.8 \times 10^{-2}$ ; KRS-6:  $\epsilon'/\epsilon_r = 29$ ,  $\tan \delta = 2 \times 10^{-2}$ -- agree reasonably well with a simple theoretical fit to the far-infrared lattice absorption of TlBr and TlCl centered at about 1400 GHz. The dielectric samples were hot-pressed into copper wafers with dimensions matching WR-10 waveguide, and then machined and polished to obtain flat, parallel air-dielectric interfaces.

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