Abstracts

The Hot-Electron Microbolometer as an Ultrasensitive Detector for Millimeter Wavelengths

K. Farooqui, P.T. Timbie, G.W. Wilson, J.-W. Zhou and M. Nahum. "The Hot-Electron Microbolometer as an Ultrasensitive Detector for Millimeter Wavelengths." 1995 MTT-S International Microwave Symposium Digest 95.3 (1995 Vol. III [MWSYM]): 1343-1346.

The hot-electron microbolometer is a novel low-temperature thermal detector which has potential for very low-noise power measurements at millimeter wavelengths. We are investigating issues in the practical implementation of this detector for low-background applications. We present results from tests of an efficient scheme to couple the detector to waveguide, as well as the expected noise performance of a microbolometer optimized for balloon-borne measurements. The expected NEP of the microbolometer in such a measurement is 7 x 10-18 W/radical Hz which is nearly a factor of two better than bolometers currently in use.

❑ Return to main document.