



AN AVERAGE POWER DETECTOR CIRCUIT

Abstract

An apparatus is disclosed which accurately measures, over a wide ambient temperature range, the average power derived from an electrical signal.

- 5 Furthermore, embodiments of the present invention can be fabricated with inexpensive, off-the-shelf components and can have excellent circuit characteristics at RF frequencies. These results are obtained in an illustrative embodiment of the present invention that comprises a first thermal detector (103), a second thermal detector (117), an error amplifier (107) and a summer (113). The first thermal
- 10 detector provides a reference signal (105), which varies with the ambient temperature, to the error amplifier. The summer receives the signal to be measured (111) and the signal output from the error amplifier, and outputs to the second thermal detector a composite signal (115), which is indicative of the sum of the power derived from input signal and the output signal from the error amplifier. The
- 15 second thermal detector receives the composite signal and outputs a feedback signal (119), which is indicative of power derived from the composite signal, to the error amplifier. The output signal, which is indicative of the power derived from the input signal, is the output of the error amplifier. The error amplifier advantageously subtracts the feedback signal from the reference signal, and advantageously outputs
- 20 the amplified difference to the summer.