RMS Power Sensor

This true RMS passive surface mount power sensor is the newest in a line of innovative products from BARRY INDUSTRIES. It is a compact (150mils X 150mils), thick film circuit capable of directly measuring RF input power from 8dBm (6.3mW) to 33dBm (2W) giving it a dynamic range of 25dB. It is pin for pin compatible with existing power sensors in the industry. It requires a DC input of 5V to bias the internal bridge circuitry with a typical current draw of 2mA to 8 mA.
With no RF input power the differential offset voltage can range from 0 mV to 10 mV. Once RF input power exceeds 8 dBm a differential voltage corresponding to that power level is produced and added to the offset voltage. The slope of the power-voltage transfer curve is the same for all parts despite the initial offset voltage. The differential voltage output from the power sensor is small and will need to be passed through an instrumentation grade op amp for adequate voltage swings corresponding to the RF input power. Because of the large dynamic range (25 dB) and the ability to directly measure RF power ranging from 8 dBm to 33 dBm, the circuitry required to range the input signal to the linear range of the sensor is greatly simplified as compared with other passive linear power sensors in the industry.

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