


RF Detector 30MHz to 4500MHz 15dBm 6-Pin WLCSP T/R

Manufacturer:	Analog Devices, Inc
Package/Case:	WLCSP6
Product Type:	RF Integrated Circuits
RoHS:	RoHS Compliant/Lead free 
Lifecycle:	Active



Images are for reference only

[Inquiry](#)

General Description

The ADL5506 is a complete, low cost subsystem for the measurement of RF signals in the 30 MHz to 4.5 GHz frequency range, with a typical dynamic range of 45 dB, intended for use in a wide variety of wireless terminal devices. It provides a wider dynamic range and better accuracy than is possible using discrete diode detectors. In particular, its temperature stability is excellent over -40°C to $+85^{\circ}\text{C}$.

Its high sensitivity allows measurement of low power levels, thus reducing the amount of power that needs to be coupled to the detector. It is essentially a voltage responding device, with a typical dynamic range of 45 dB.

For convenience, the signal is internally ac-coupled, using a 5 pF capacitor and a broadband $50\ \Omega$ match, with an external shunt resistor of $52\ \Omega$. This high-pass coupling, with a corner at approximately 19 MHz, determines the lowest operating frequency. Therefore, the source can be dc grounded.

The ADL5506 output increases from approximately 0.14 V to a little over 1 V as the input signal level increases from 1.25 mV rms ($-45\ \text{dBm}$) to 224 mV rms (0 dBm). The output is proportional to the logarithm of the input power level; that is, the reading is presented directly in decibels and is scaled about 18 mV/dB at 900 MHz. A capacitor can be connected between the VLOG pin and the CFLT pin when it is desirable to increase the time interval over which averaging of the input waveform occurs.

The ADL5506 is available in a 6-ball WLCSP and consumes 3.8 mA from a 3.0 V supply. When powered down, the typical disable supply current is $<1\ \mu\text{A}$.

Key Features

Complete RF detector function

Typical dynamic range: 45 dB

Frequency range from 30 MHz to 4.5 GHz

Excellent temperature stability

Stable linear in decibel response

Power on/off response time: 65 ns/145 ns (rise/fall)

Operates from -40°C to +85°C

Low power: 3.8 mA at 3.0 V

Power supply voltage range from 2.5 V to 5.5 V

Disable current <1 µA

AEC-Q100 qualified for automotive applications

Application

RSSI and TSSI for wireless terminal devices

RF transmitter or receiver power measurement

Automotive RF bidirectional amplifiers

Recommended For You

ADF4153BCPZ

Analog Devices, Inc
QFN

ADF5355BCPZ

Analog Devices, Inc
LFCSP32

AD8318ACPZ

Analog Devices, Inc
LFCSP

AD6620ASZ

Analog Devices, Inc
QFP

ADF4107BCPZ

Analog Devices, Inc
QFN

ADL5513ACPZ-R7

Analog Devices, Inc
LFCSP-16

AD8319ACPZ

Analog Devices, Inc
LFCSP

ADRF6755ACPZ

Analog Devices, Inc
QFN

ADL5535ARKZ-R7

Analog Devices, Inc
SOT89

AD608AR

Analog Devices, Inc
SOP16

ADF4107BRUZ-REEL7

Analog Devices, Inc
TSSOP16

ADRF6780ACPZN

Analog Devices, Inc
QFN

AD8317ACPZ

Analog Devices, Inc
LFCSP

AD608ARZ

Analog Devices, Inc
SOP16

AD8318ACPZ-REEL7

Analog Devices, Inc
LFCSP