600MHz to 7GHz Precision RF Detector with Fast Comparator Output

FEATURES

- **Temperature Compensated Internal Schottky Diode RF Detector**
- **Wide Input Frequency Range: 600MHz to 7GHz***
- **Wide Input Power Range: –26dBm to 12dBm**
- **Fast Comparator Output with Latch Enable**
- **25ns Response Time with 0dBm RF Input Level**
- **Rail-to-Rail Output Swing**
- **Comparator Output Current: ±20mA**
- **Wide V_{CC} Range of 2.7V to 5.5V**
- Low Operating Current: 2mA
- Available in a Low Profile (1mm) SOT-23 Package

APPLICATIONS

- RF Signal Presence Detectors for:
  802.11a, 802.11b, 802.11g, 802.15
  Optical Data Links
  Wireless Data Modems
  Wireless and Cable Infrastructure
- RF Power Alarm
- Envelope Detector
- RF ID Tag Reader

DESCRIPTION

The LTC®5536 is an RF power detector for RF applications operating in the 600MHz to 7GHz range. A temperature compensated Schottky diode peak detector and fast comparator are combined in a small ThinSOT™ package. The supply voltage range is optimized for operation from a single cell lithium-ion or three cell NiMH battery.

The RF input voltage is peak detected using an on-chip Schottky diode. The detected voltage is compared against a reference voltage at V_M.

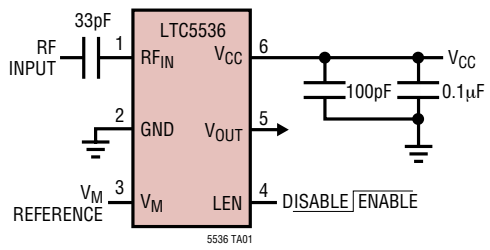
The response time from the RF input to V_{OUT} can be as little as 20ns. The comparator output is latched when LEN is high or is transparent when LEN is low.

The LTC5536 operates with RF input power levels from –26dBm to 12dBm.

*Operation at higher frequencies is possible with reduced performance.

TYPICAL APPLICATION

600MHz to 7GHz RF Power Detector



V_M Comparator Switching Voltage vs RF Input Power, 600MHz – 7GHz