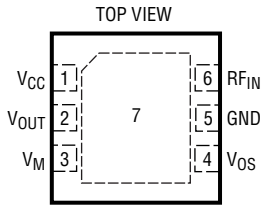
## ABSOLUTE MAXIMUM RATINGS (Note 1)

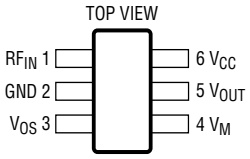
$V_{CC}$, $V_{OUT}$, $V_M$, $V_{OS}$ ..... –0.3V to 6.5V
$RF_{IN}$ Voltage ..... ($V_{CC}$ ± 1.5V) to 7V
$RF_{IN}$ Power (RMS) ..... 12dBm
$I_{VOUT}$ ..... 5mA
Operating Temperature Range (Note 2) .. – 40°C to 85°C
Maximum Junction Temperature ..... 125°C
Storage Temperature Range ..... – 65°C to 125°C
Lead Temperature (Soldering, 10 sec)
SOT-23 Only ..... 300°C

## PACKAGE/ORDER INFORMATION




DC6 PACKAGE
6-LEAD (2mm × 2mm) PLASTIC DFN
$T_{JMAX}$ = 125°C, $\theta_{JA}$ = 85°C/W
EXPOSED PAD (PIN 7) IS GND,
MUST BE SOLDERED TO PCB

| ORDER PART NUMBER |
|---|
| LTC5532EDC |
| **DC6 PART MARKING** |
| LAFR |




S6 PACKAGE
6-LEAD PLASTIC TSOT-23
$T_{JMAX}$ = 125°C, $\theta_{JA}$ = 250°C/W

| ORDER PART NUMBER |
|---|
| LTC5532ES6 |
| **S6 PART MARKING** |
| LTAFS |

Consult LTC Marketing for parts specified with wider operating temperature ranges.

## ELECTRICAL CHARACTERISTICS

**The ● denotes the specifications which apply over the full operating temperature range, otherwise specifications are at $T_A$ = 25°C. $V_{CC}$ = 3.6V, RF Input Signal is Off, $R_A$ = $R_B$ = 1k, $V_{OS}$ = 0V unless otherwise noted (Note 2).**

| PARAMETER | CONDITIONS | | MIN | TYP | MAX | UNITS |
|---|---|---|---|---|---|---|
| $V_{CC}$ Operating Voltage | | ● | 2.7 | | 6 | V |
| $I_{VCC}$ Operating Current | $I_{VOUT}$ = 0mA | ● | | 0.5 | 0.7 | mA |
| $V_{OUT}$ $V_{OL}$ (No RF Input) | $R_{LOAD}$ = 2k, $V_{OS}$ = 0V | ● | 85 | 100 to 140 | 155 | mV |
| $V_{OUT}$ Output Current | $V_{OUT}$ = 1.75V, $V_{CC}$ = 2.7V, $\Delta V_{OUT}$ < 10mV | ● | 2 | 4 | | mA |
| $V_{OUT}$ Bandwidth | $C_{LOAD}$ = 33pF, $R_{LOAD}$ = 2k (Note 4) | | | 2 | | MHz |
| $V_{OUT}$ Load Capacitance | (Note 6) | ● | | | 33 | pF |
| $V_{OUT}$ Slew Rate | $V_{RFIN}$ = 1V Step, $C_{LOAD}$ = 33pF, Total $R_{LOAD}$ = 2k (Note 3) | | | 3 | | V/µs |
| $V_{OUT}$ Noise | $V_{CC}$ = 3V, Noise BW = 1.5MHz, 50Ω RF Input Termination, 50Ω AC Output Termination | | | 1 | | $mV_{P-P}$ |
| $V_{OS}$ Voltage Range | | ● | 0 | | 1 | V |
| $V_{OS}$ Input Current | $V_{OS}$ = 1V | ● | –0.5 | | 0.5 | µA |
| $V_M$ Voltage Range | | ● | 0 | | $V_{CC}$ -1. 8 | V |
| $V_M$ Input Current | $V_M$ = 3.6V | ● | –0.5 | | 0.5 | µA |
| $RF_{IN}$ Input Frequency Range | (Note 7) | | | 300 to 7000 | | MHz |
| $RF_{IN}$ Input Power Range | RF Frequency = 300MHz to 7GHz (Note 5, 6) $V_{CC}$ = 2.7V to 6V | | | –32 to 10 | | dBm |
| $RF_{IN}$ AC Input Resistance | F = 1000MHz, Pin = –25dBm | | | 220 | | Ω |
| $RF_{IN}$ Input Shunt Capacitance | F = 1000MHz, Pin = –25dBm | | | 0.65 | | pF |

**Note 1:** Absolute Maximum Ratings are those values beyond which the life of a device may be impaired.

**Note 2:** Specifications over the –40°C to 85°C operating temperature range are assured by design, characterization and correlation with statistical process controls.

**Note 3:** The rise time at $V_{OUT}$ is measured between 1.3V and 2.3V.

**Note 4:** Bandwidth is calculated based on the 10% to 90% rise time equation: BW = 0.35/rise time.

**Note 5:** RF performance is tested at 1800MHz

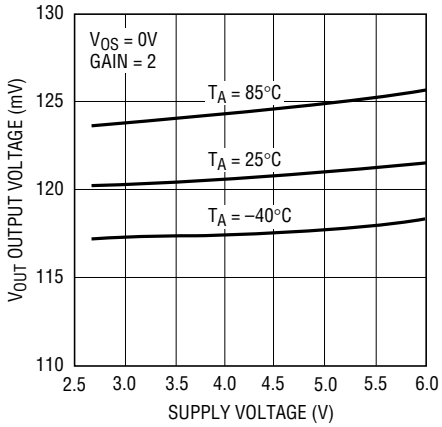
**Note 6:** Guaranteed by design.

**Note 7:** Higher frequency operation is achievable with reduced performance. Consult factory for more information.

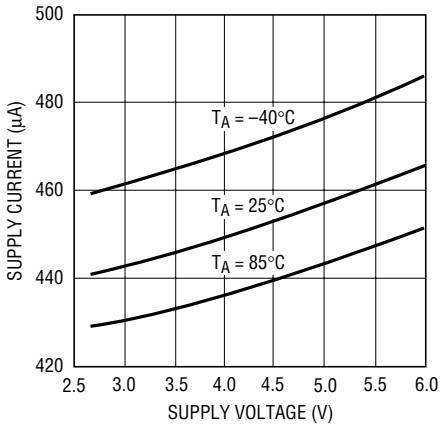
## TYPICAL PERFORMANCE CHARACTERISTICS

**($R_{LOAD}$ = 20k) Characteristics are for both packages unless otherwise indicated.**

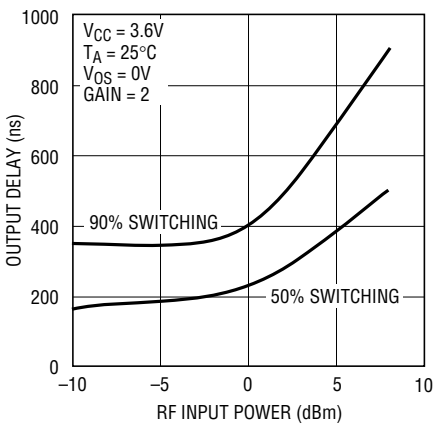
### Output Voltage vs Supply Voltage (RF Input Signal Off)



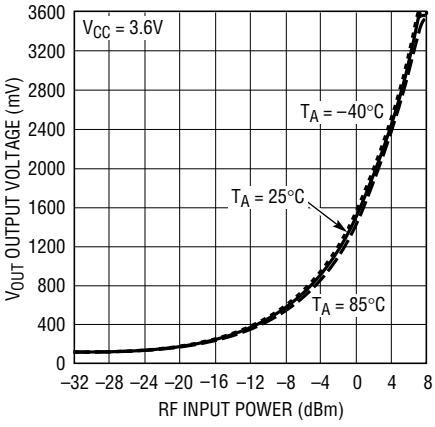

### Supply Current vs Supply Voltage (RF Input Signal Off)



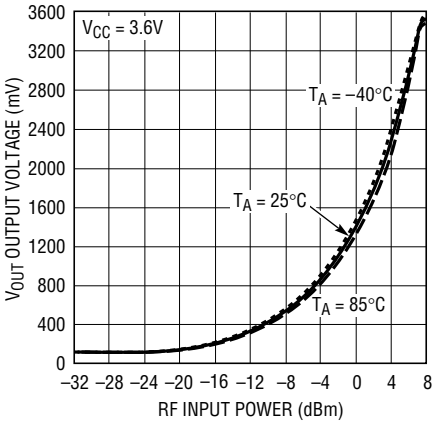

### Output Delay vs RF Input Power



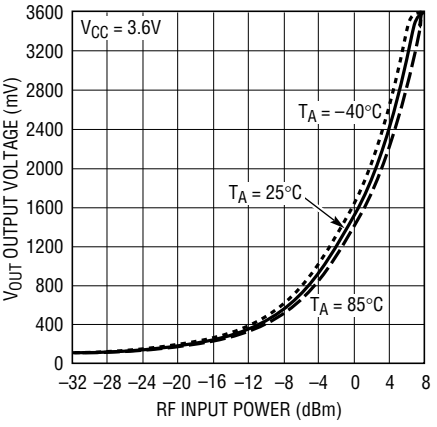

### Typical Detector Characteristics, 300MHz, Gain = 2, $V_{OS}$ = 0V



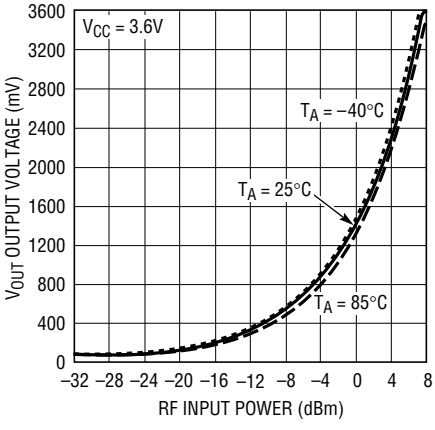

### Typical Detector Characteristics, 1000MHz, Gain = 2, $V_{OS}$ = 0V



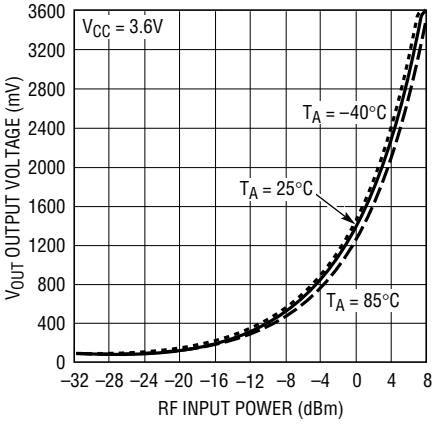

### Typical Detector Characteristics, 2000MHz, Gain = 2, $V_{OS}$ = 0V



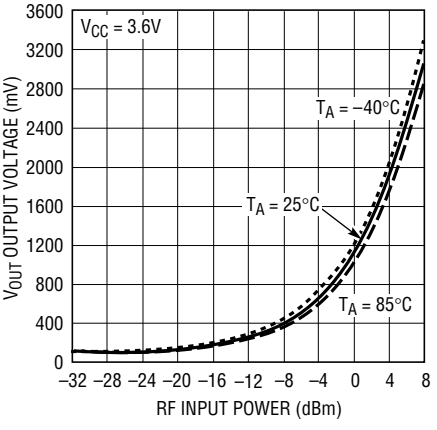

### Typical Detector Characteristics, 3000MHz, Gain = 2, $V_{OS}$ = 0V




### Typical Detector Characteristics, 4000MHz, Gain = 2, $V_{OS}$ = 0V



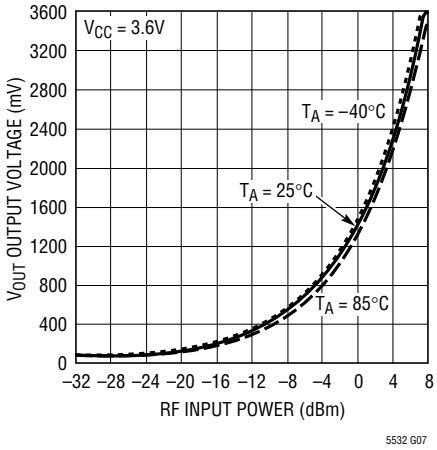

### Typical Detector Characteristics, 5000MHz, Gain = 2, $V_{OS}$ = 0V (SOT-23 Package)



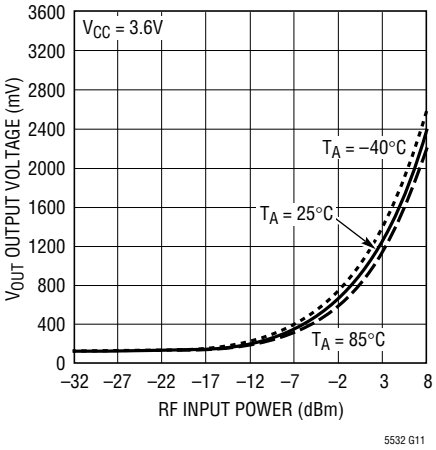
## TYPICAL PERFORMANCE CHARACTERISTICS

**($R_{LOAD}$ = 20k) Characteristics are for both packages unless otherwise indicated.**

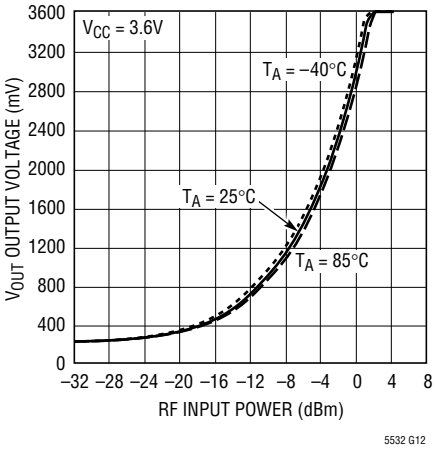
**Typical Detector Characteristics, 6000MHz, Gain = 2, $V_{OS}$ = 0V (SOT-23 Package)**



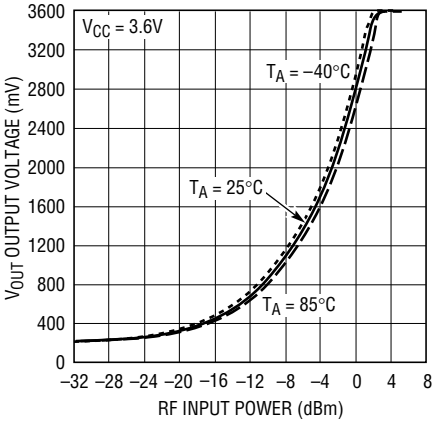

**Typical Detector Characteristics, 7000MHz, Gain = 2, $V_{OS}$ = 0V (SOT-23 Package)**



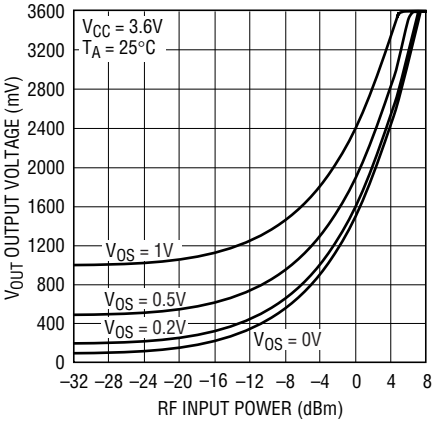

**Typical Detector Characteristics, 300MHz, Gain = 4, $V_{OS}$ = 0V**



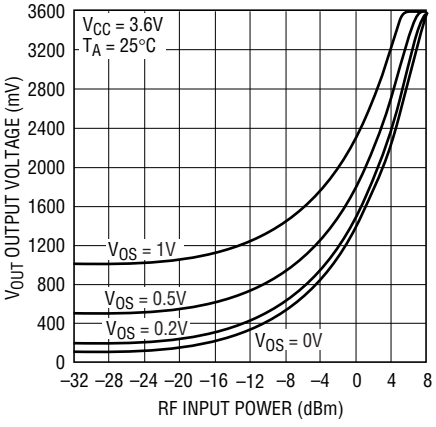

**Typical Detector Characteristics, 1000MHz, Gain = 4, $V_{OS}$ = 0V**



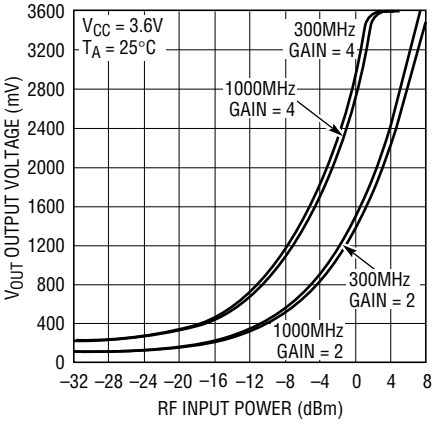

**$V_{OUT}$ vs RF Input Power and $V_{OS}$, 300MHz, Gain = 2**




**$V_{OUT}$ vs RF Input Power and $V_{OS}$, 1000MHz, Gain = 2**



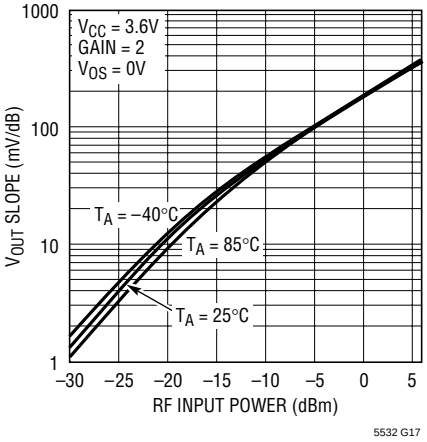

**$V_{OUT}$ vs RF Input Power, 300MHz and 1000MHz, Gain = 2 and 4, $V_{OS}$ = 0V**



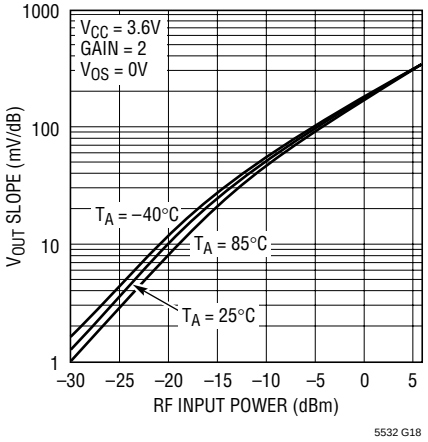
## TYPICAL PERFORMANCE CHARACTERISTICS

**($R_{LOAD}$ = 20k) Characteristics are for both packages unless otherwise indicated.**

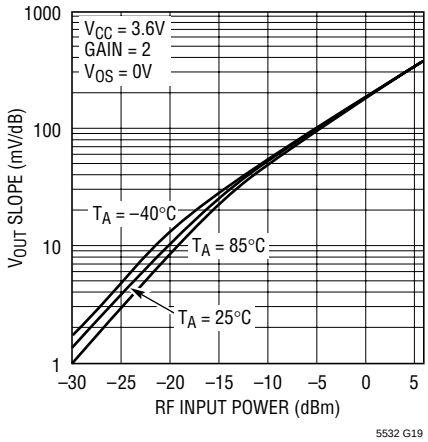
### $V_{OUT}$ Slope vs RF Input Power at 300MHz



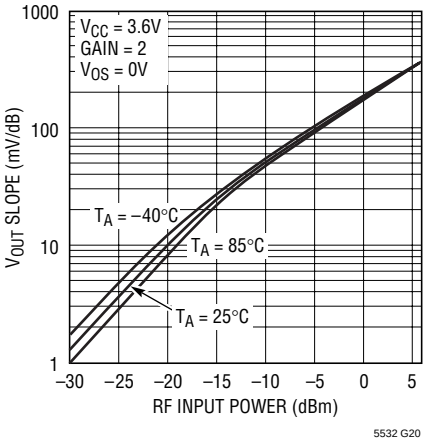

### $V_{OUT}$ Slope vs RF Input Power at 1000MHz



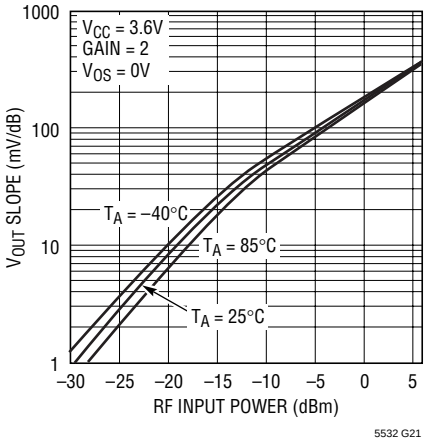

### $V_{OUT}$ Slope vs RF Input Power at 2000MHz



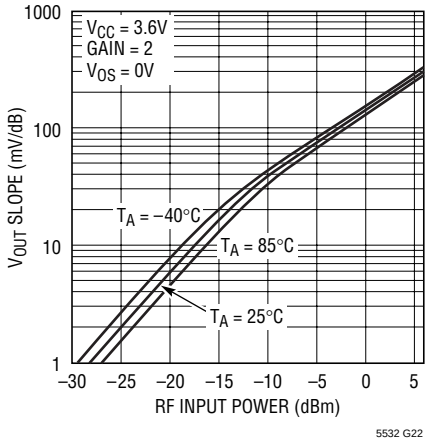

### $V_{OUT}$ Slope vs RF Input Power at 3000MHz



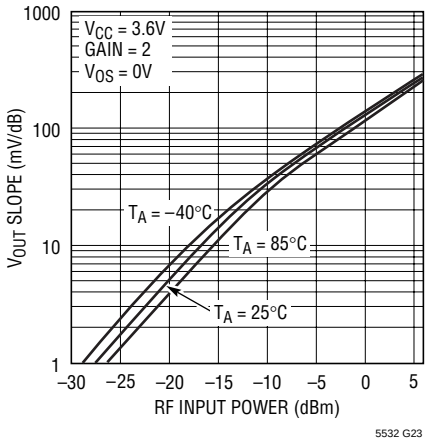

### $V_{OUT}$ Slope vs RF Input Power at 4000MHz



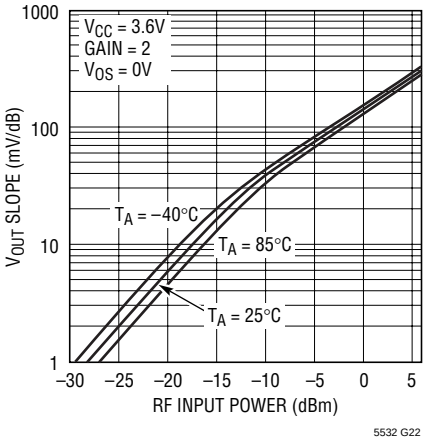

### $V_{OUT}$ Slope vs RF Input Power at 5000MHz (SOT-23 Package)




### $V_{OUT}$ Slope vs RF Input Power at 6000MHz (SOT-23 Package)

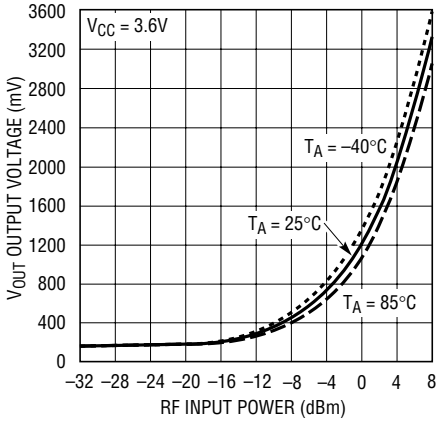



### $V_{OUT}$ Slope vs RF Input Power at 7000MHz (SOT-23 Package)

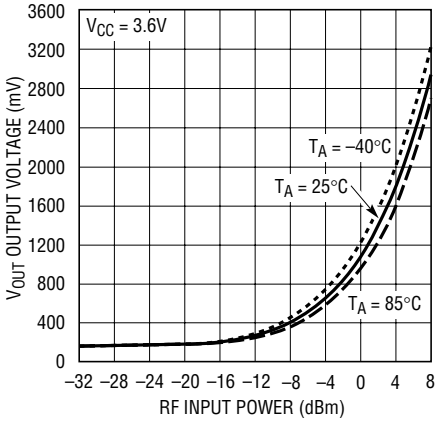


## TYPICAL PERFORMANCE CHARACTERISTICS (DFN package, $R_{LOAD}$ = 20k)

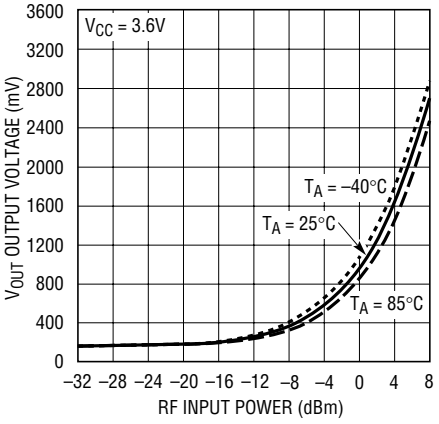
### Typical Detector Characteristics 5000MHz, Gain = 2, $V_{OS}$ = 0V (DFN Package)



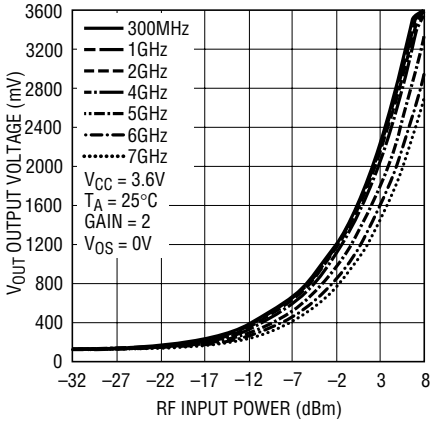

### Typical Detector Characteristics 6000MHz, Gain = 2, $V_{OS}$ = 0V (DFN Package)



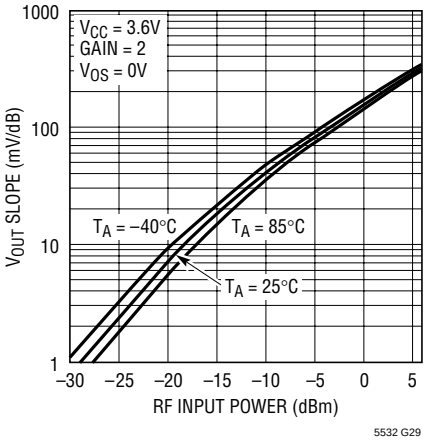

### Typical Detector Characteristics 7000MHz, Gain = 2, $V_{OS}$ = 0V (DFN Package)



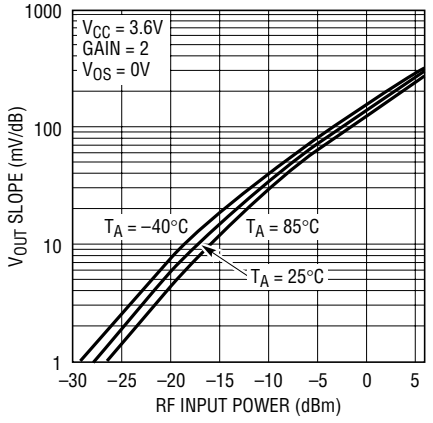

### Output Voltage vs RF Input Power (DFN Package)



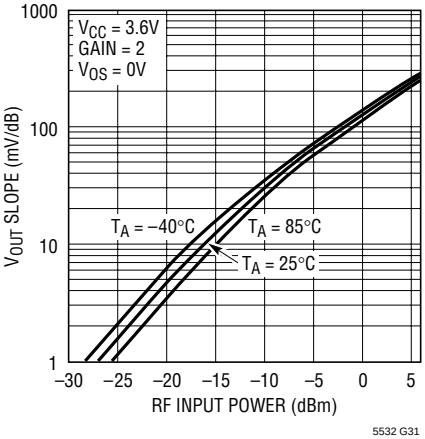

### $V_{OUT}$ Slope vs RF Input Power at 5000MHz (DFN Package)




### $V_{OUT}$ Slope vs RF Input Power at 6000MHz (DFN Package)




### $V_{OUT}$ Slope vs RF Input Power at 7000MHz (DFN Package)

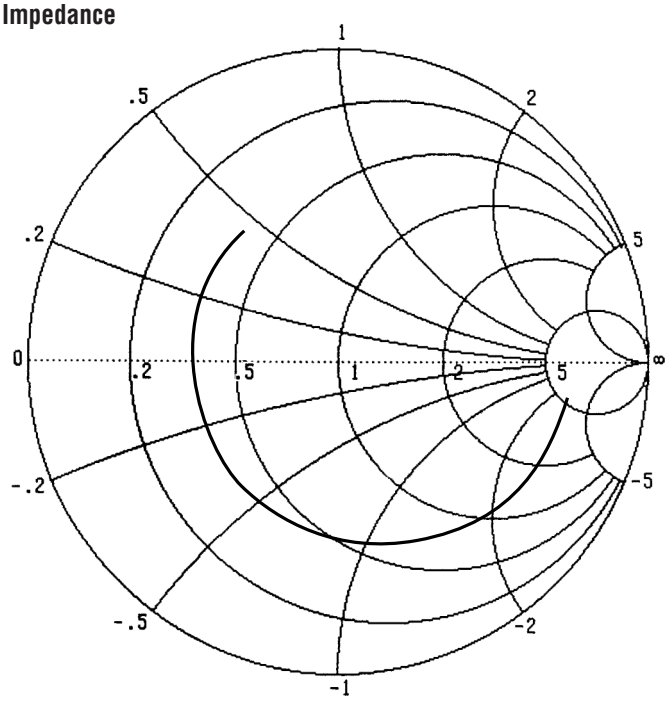


## TYPICAL PERFORMANCE CHARACTERISTICS (SOT-23 Package)

**$RF_{IN}$ Input Impedance (Pin = 0dBm, $V_{CC}$ = 3.6V, $T_A$ = 25°C)**

| FREQUENCY (GHz) | RESISTANCE (Ω) | REACTANCE (Ω) |
|---|---|---|
| 0.30 | 290.45 | –136.22 |
| 0.50 | 234.41 | –162.54 |
| 0.70 | 178.25 | –170.53 |
| 0.90 | 137.31 | –159.89 |
| 1.10 | 109.17 | –147.57 |
| 1.30 | 86.30 | –136.18 |
| 1.50 | 68.65 | –121.74 |
| 1.70 | 57.48 | –107.60 |
| 1.90 | 49.79 | –96.72 |
| 2.10 | 43.56 | –86.70 |
| 2.30 | 38.67 | –77.91 |
| 2.50 | 34.82 | –70.13 |
| 2.70 | 31.68 | –62.86 |
| 2.90 | 29.13 | –56.01 |
| 3.10 | 27.17 | –49.83 |
| 3.30 | 25.73 | –44.24 |
| 3.50 | 24.56 | –39.74 |
| 3.70 | 23.18 | –35.35 |
| 3.90 | 22.31 | –30.62 |
| 4.10 | 20.73 | –26.88 |
| 4.30 | 19.88 | –22.31 |
| 4.50 | 19.40 | –18.23 |
| 4.70 | 19.05 | –14.25 |
| 4.90 | 19.08 | –10.21 |
| 5.10 | 19.55 | –6.30 |
| 5.30 | 20.85 | –2.84 |
| 5.50 | 21.94 | –1.49 |
| 5.70 | 20.60 | –0.07 |
| 5.90 | 19.29 | 2.99 |
| 6.10 | 18.69 | 6.61 |
| 6.30 | 18.53 | 10.39 |
| 6.50 | 18.74 | 14.35 |
| 6.70 | 19.79 | 17.91 |
| 6.90 | 19.75 | 20.77 |
| 7.00 | 19.99 | 22.47 |

**S11 Forward Reflection Impedance**




0.3000GHz-7.000GHz

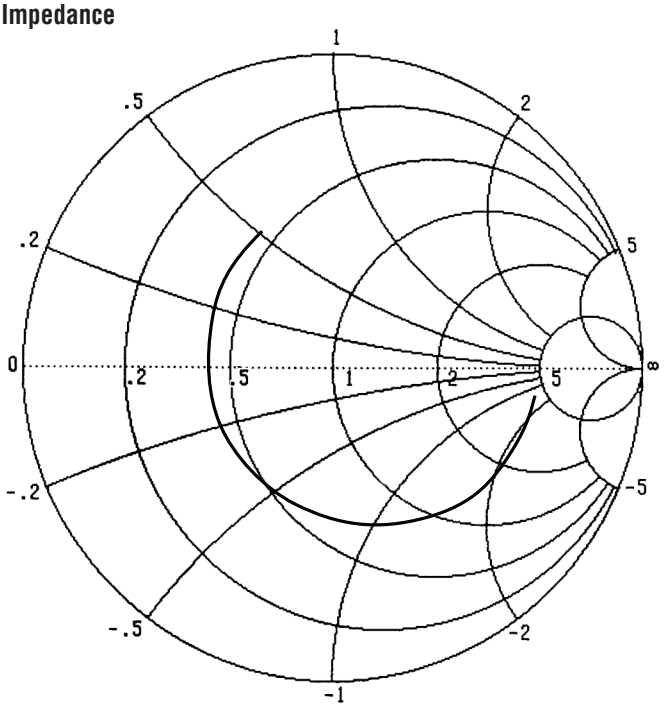
5508 TA03

## TYPICAL PERFORMANCE CHARACTERISTICS (SOT-23 Package)

**$RF_{IN}$ Input Impedance (Pin = –25dBm, $V_{CC}$ = 3.6V, $T_A$ = 25°C)**

| FREQUENCY (GHz) | RESISTANCE (Ω) | REACTANCE (Ω) |
|---|---|---|
| 0.30 | 216.45 | –76.47 |
| 0.50 | 190.63 | –98.28 |
| 0.70 | 161.98 | –112.03 |
| 0.90 | 133.17 | –111.53 |
| 1.10 | 113.08 | –109.05 |
| 1.30 | 94.55 | –107.08 |
| 1.50 | 75.33 | –98.50 |
| 1.70 | 63.52 | –88.19 |
| 1.90 | 55.19 | –80.05 |
| 2.10 | 48.64 | –72.23 |
| 2.30 | 43.73 | –64.81 |
| 2.50 | 39.71 | –58.31 |
| 2.70 | 36.47 | –52.27 |
| 2.90 | 33.69 | –46.77 |
| 3.10 | 31.61 | –41.25 |
| 3.30 | 29.78 | –36.61 |
| 3.50 | 28.27 | –32.39 |
| 3.70 | 26.63 | –28.12 |
| 3.90 | 26.12 | –23.97 |
| 4.10 | 24.20 | –20.75 |
| 4.30 | 23.28 | –16.69 |
| 4.50 | 22.60 | –12.77 |
| 4.70 | 22.21 | –9.08 |
| 4.90 | 22.15 | –5.24 |
| 5.10 | 22.61 | –1.58 |
| 5.30 | 23.90 | 1.53 |
| 5.50 | 24.97 | 2.62 |
| 5.70 | 23.51 | 4.00 |
| 5.90 | 22.25 | 6.94 |
| 6.10 | 21.57 | 10.62 |
| 6.30 | 21.43 | 14.02 |
| 6.50 | 21.69 | 17.77 |
| 6.70 | 22.68 | 21.24 |
| 6.90 | 22.81 | 24.21 |
| 7.00 | 23.07 | 25.56 |

**S11 Forward Reflection Impedance**




0.3000GHz-7.000GHz

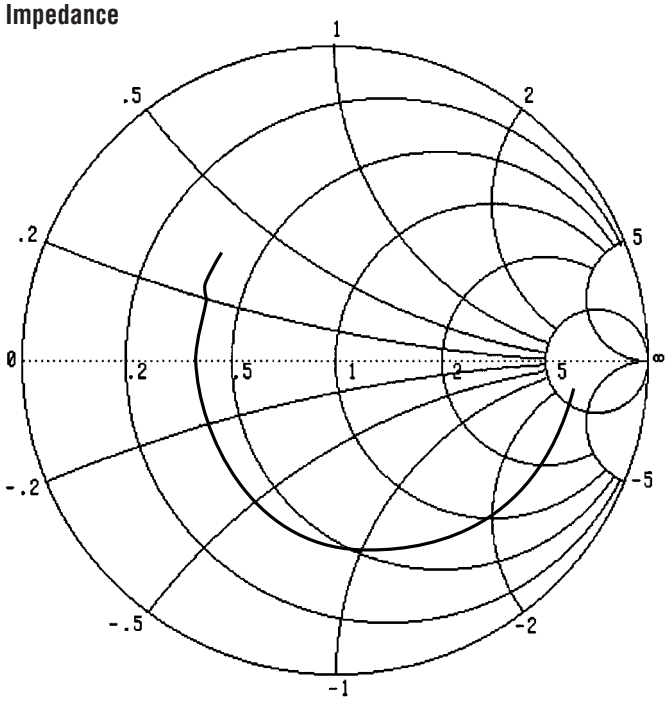
5508 TA04

## TYPICAL PERFORMANCE CHARACTERISTICS (DFN Package)

**$RF_{IN}$ Input Impedance (Pin = 0dBm, $V_{CC}$ = 3.6V, $T_A$ = 25°C)**

| FREQUENCY (GHz) | RESISTANCE (Ω) | REACTANCE (Ω) |
|---|---|---|
| 0.30 | 305.23 | –144.87 |
| 0.50 | 238.58 | –173.62 |
| 0.70 | 185.32 | –177.82 |
| 0.90 | 142.06 | –167.59 |
| 1.10 | 111.93 | –152.80 |
| 1.30 | 90.59 | –139.47 |
| 1.50 | 75.22 | –126.45 |
| 1.70 | 63.37 | –114.14 |
| 1.90 | 53.84 | –103.83 |
| 2.10 | 47.11 | –94.33 |
| 2.30 | 41.34 | –85.18 |
| 2.50 | 37.00 | –76.93 |
| 2.70 | 33.60 | –69.47 |
| 2.90 | 30.96 | –62.66 |
| 3.10 | 28.55 | –56.74 |
| 3.30 | 26.36 | –51.02 |
| 3.50 | 24.52 | –45.95 |
| 3.70 | 23.12 | –40.97 |
| 3.90 | 22.01 | –36.25 |
| 4.10 | 21.13 | –31.82 |
| 4.30 | 20.44 | –27.51 |
| 4.50 | 19.85 | –23.69 |
| 4.70 | 19.42 | –20.18 |
| 4.90 | 19.03 | –16.54 |
| 5.10 | 18.78 | –12.88 |
| 5.30 | 18.69 | –9.21 |
| 5.50 | 18.80 | –5.72 |
| 5.70 | 19.09 | –2.32 |
| 5.90 | 19.68 | 0.85 |
| 6.10 | 20.05 | 3.49 |
| 6.30 | 20.18 | 6.37 |
| 6.50 | 20.35 | 9.23 |
| 6.70 | 19.84 | 12.37 |
| 6.90 | 19.81 | 15.97 |
| 7.00 | 19.95 | 17.83 |

**S11 Forward Reflection Impedance**




0.3000GHz-7.000GHz

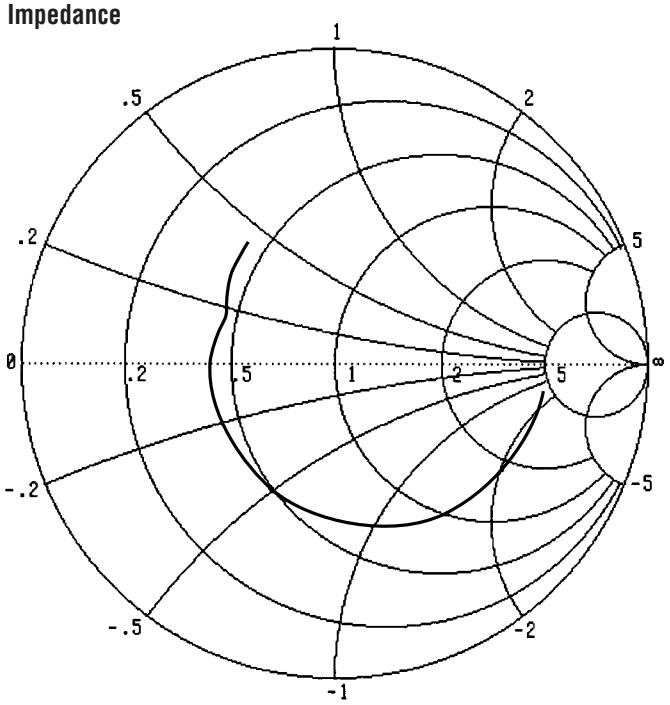
5508 TA05

## TYPICAL PERFORMANCE CHARACTERISTICS (DFN Package)

**$RF_{IN}$ Input Impedance (Pin = –25dBm, $V_{CC}$ = 3.6V, $T_A$ = 25°C)**

| FREQUENCY (GHz) | RESISTANCE (Ω) | REACTANCE (Ω) |
|---|---|---|
| 0.30 | 225.19 | –79.32 |
| 0.50 | 196.59 | –105.44 |
| 0.70 | 166.23 | –114.07 |
| 0.90 | 137.24 | –115.88 |
| 1.10 | 114.69 | –111.94 |
| 1.31 | 96.83 | –106.10 |
| 1.50 | 83.12 | –99.28 |
| 1.70 | 72.11 | –92.73 |
| 1.90 | 61.69 | –85.98 |
| 2.10 | 53.76 | –78.71 |
| 2.31 | 47.46 | –71.16 |
| 2.51 | 42.60 | –64.52 |
| 2.70 | 39.04 | –58.61 |
| 2.90 | 36.25 | –53.23 |
| 3.10 | 33.41 | –48.13 |
| 3.30 | 30.78 | –43.37 |
| 3.50 | 28.85 | –38.83 |
| 3.70 | 27.28 | –34.09 |
| 3.90 | 26.08 | –29.73 |
| 4.10 | 24.97 | –25.80 |
| 4.30 | 24.18 | –21.94 |
| 4.50 | 23.43 | –18.27 |
| 4.70 | 22.88 | –15.04 |
| 4.90 | 22.41 | –11.56 |
| 5.10 | 22.09 | –8.08 |
| 5.30 | 21.82 | –4.34 |
| 5.50 | 21.91 | –1.29 |
| 5.70 | 22.08 | 2.15 |
| 5.90 | 22.84 | 5.32 |
| 6.10 | 23.75 | 7.51 |
| 6.30 | 23.32 | 9.47 |
| 6.50 | 22.57 | 12.41 |
| 6.70 | 22.17 | 15.79 |
| 6.90 | 22.20 | 19.34 |
| 7.00 | 22.27 | 21.21 |

**S11 Forward Reflection Impedance**




0.3000GHz-7.000GHz

5508 TA06

## PIN FUNCTIONS (SOT-23/DFN)

**$RF_{IN}$ (Pin 1/Pin 6):** RF Input Voltage. Referenced to $V_{CC}$. A coupling capacitor must be used to connect to the RF signal source. The frequency range is 300MHz to 7GHz. This pin has an internal 500Ω termination, an internal Schottky diode detector and a peak detector capacitor. Operation at higher frequencies is achievable, consult factory for more information.

**GND (Pin 2/Pin 5):** Ground.

**$V_{OS}$ (Pin 3/Pin 4):** $V_{OUT}$ Offset Voltage Adjustment. From 0V to 120mV, $V_{OUT}$ does not change. Above 120mV, $V_{OUT}$ will track $V_{OS}$.

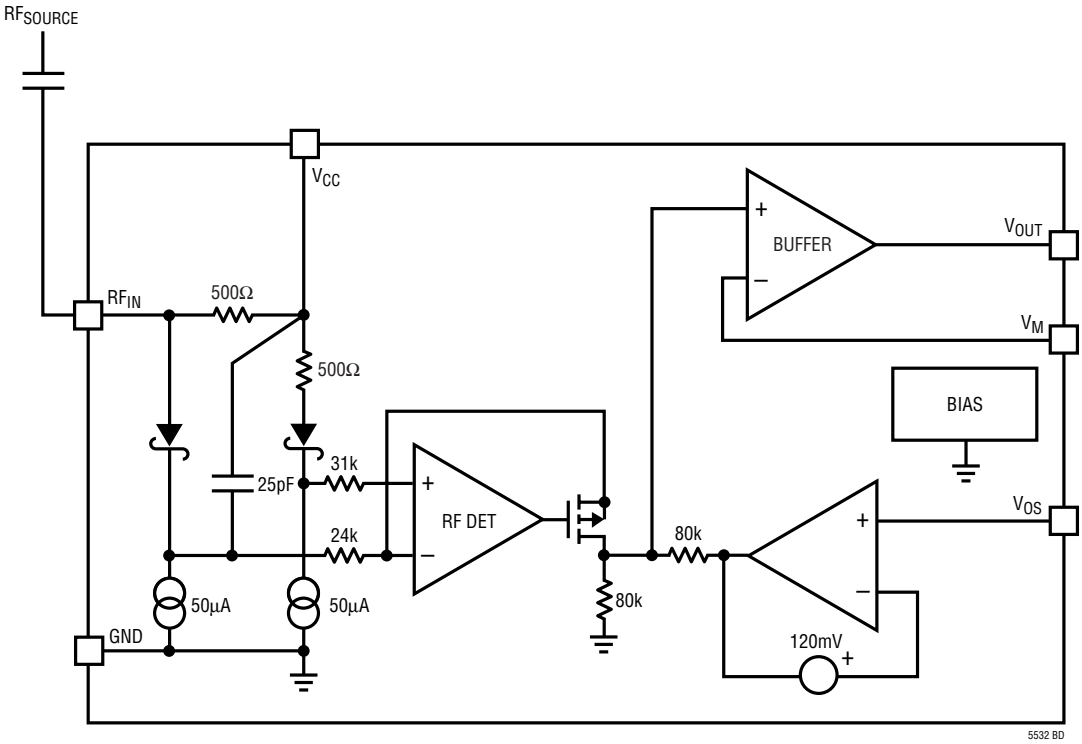
**$V_M$ (Pin 4/Pin 3):** Inverting Input to Buffer Amplifier.

**$V_{OUT}$ (Pin 5/Pin 2):** Detector Output.

**$V_{CC}$ (Pin 6/Pin 1):** Power Supply Voltage, 2.7V to 6V. $V_{CC}$ should be bypassed appropriately with ceramic capacitors.

**Exposed Pad (NA/Pin 7):** Exposed Pad is GND. Must be soldered to PCB.

## BLOCK DIAGRAM



## APPLICATIONS INFORMATION

### Operation

The LTC5532 RF detector integrates several functions to provide RF power detection over frequencies ranging from 300MHz to 7GHz. These functions include an internal frequency compensated buffer amplifier, an RF Schottky diode peak detector and a level shift amplifier to convert the RF input signal to DC. The LTC5532 has both gain setting and voltage offset adjustment capabilities.

### Buffer Amplifier

The output buffer amplifier is capable of supplying typically 4mA into a load. The negative terminal $V_M$ is brought out to a pin for gain selection. External resistors connected between $V_{OUT}$ and $V_M$ ($R_A$) and $V_M$ to ground ($R_B$) will set the gain of this amplifier.

$$\text{Gain} = 1 + R_A/R_B$$

The amplifier is unity gain stable; however a minimum gain of two is recommended to improve low output voltage accuracy. The amplifier has a bandwidth of 2MHz with a gain of 2. For increased gain applications, the bandwidth is reduced according to the formula:

$$\text{Bandwidth} = 4\text{MHz}/(\text{Gain}) = 4\text{MHz} \bullet R_B/(R_A + R_B)$$

A capacitor can be placed across the feedback resistor $R_A$ to shape the frequency response. In addition, the amplifier can be used as a comparator. $V_M$ can be connected to a reference voltage. When the internal detector output voltage (which is connected to the positive input of the buffer amplifier) exceeds the external voltage on $V_M$, $V_{OUT}$ will switch high.

The $V_{OS}$ input controls the DC input voltage to the buffer amplifier. $V_{OS}$ must be connected to ground if the DC starting voltage is not to be changed. The buffer is initially trimmed nominally to 120mV (Gain = 2x) with $V_{OS}$ connected to ground.

The $V_{OS}$ pin is used to change the initial $V_{OUT}$ starting voltage. This function, in combination with gain adjustment enables the LTC5532 output to span the input range of a variety of analog-to-digital converters. $V_{OUT}$ will not change until $V_{OS}$ exceeds 120mV. The starting voltage at $V_{OUT}$ for $V_{OS}$ >120mV is:

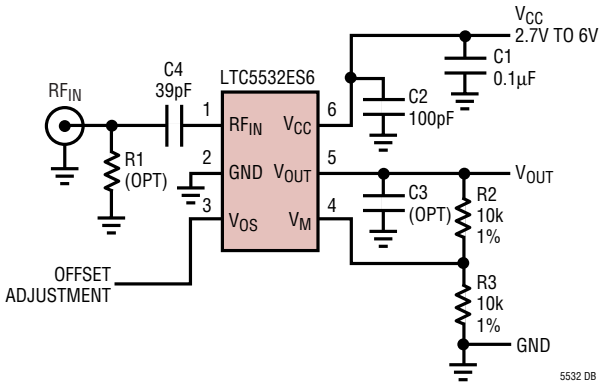
$$V_{OUT} = 0.5 \bullet V_{OS} \bullet \text{Gain}$$

where gain is the output buffer gain. For a buffer gain of 2x, $V_{OUT}$ will exactly track $V_{OS}$ above 120mV.

### RF Detector

The internal RF Schottky diode peak detector and level shift amplifier convert the RF input signal to a low frequency signal. The detector demonstrates excellent efficiency and linearity over a wide range of input power. The Schottky diode is biased at about 55µA and drives a 25pF internal peak detector capacitor.

**Demo Board Schematic**



# APPLICATIONS INFORMATION

## Applications

The LTC5532 can be used as a self-standing signal strength measuring receiver for a wide range of input signals from –32dBm to 10dBm for frequencies from 300MHz to 7GHz. Operation at higher frequencies, to 12GHz or above, is achievable with reduced performance. The smaller DFN package version is recommended for these applications because of its lower parasitics. Figure 1 plots the output voltage as a function of RF power of a 12GHz CW input signal.

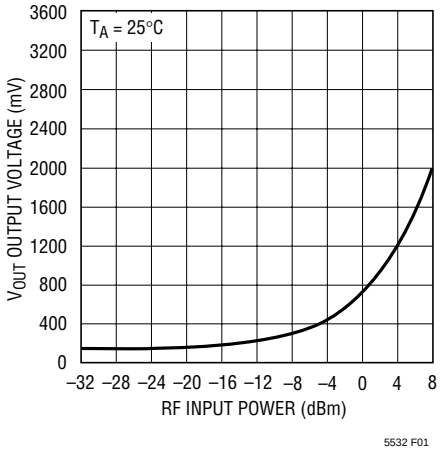



**Figure 1. Typical Detector Characteristics, 12GHz, Gain = 2, $V_{OS}$ = 0V (DFN Package)**

The LTC5532 can be used as a demodulator for AM and ASK modulated signals with data rates up to 2MHz. Depending on specific application needs, the RSSI output can be split between two branches, providing AC-coupled data (or audio) output and DC-coupled RSSI output for signal strength measurements and AGC.

The LTC5532 can be used for RF power detection and control. Figure 2 is an example of a transmitter power controller, using the LTC5532 with a capacitive tap to the power amplifier. A 0.5pF capacitor (C1) followed by a 200Ω resistor (R1) form a coupling circuit with about 20dB loss at 900MHz referenced to the LTC5532 RF input pin. In the actual product implementation, component values for the capacitive tap may be different depending on parts placement, PCB parasitics and parameters of the antenna.

The LTC5532 can be configured as a comparator for RF power detection and RF power alarms. The characterization data includes a plot of the LTC5532 output delay in response to a positive input step of varying RF level.

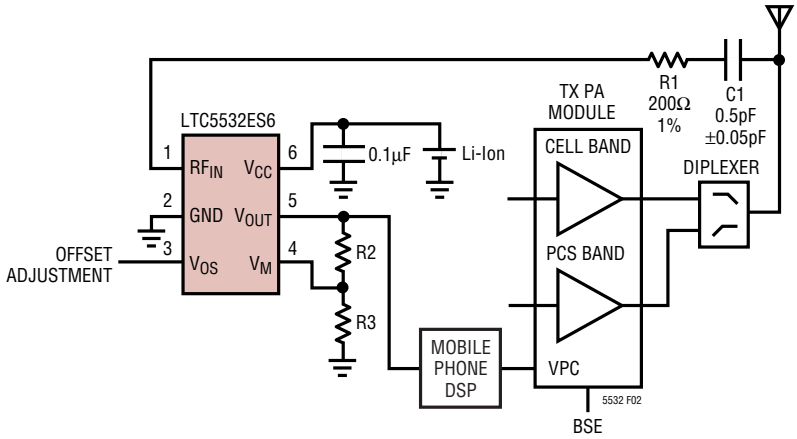
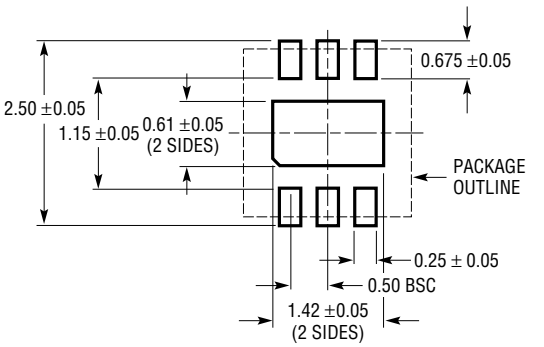


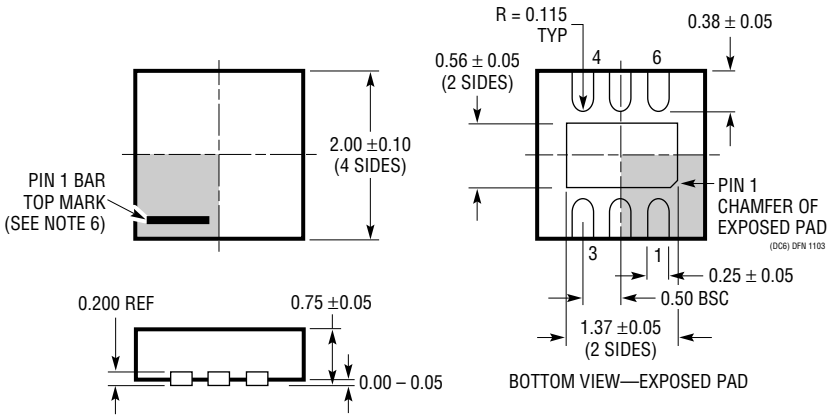

**Figure 2. Mobile Phone Tx Power Control Application Diagram with a Capacitive Tap**

# PACKAGE DESCRIPTION

**DC Package**
**6-Lead Plastic DFN (2mm × 2mm)**
(Reference LTC DWG # 05-08-1703)




RECOMMENDED SOLDER PAD PITCH AND DIMENSIONS

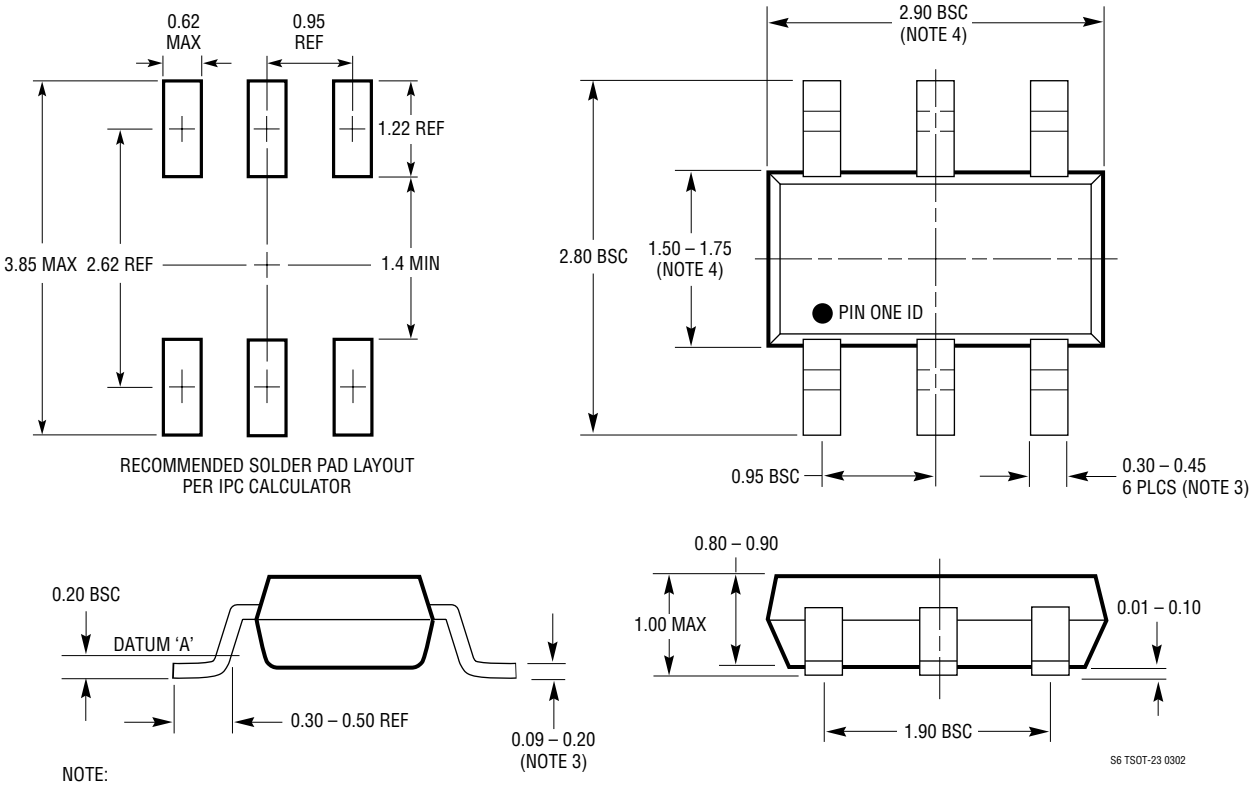



BOTTOM VIEW—EXPOSED PAD

NOTE:
1. DRAWING TO BE MADE A JEDEC PACKAGE OUTLINE M0-229 VARIATION OF (WCCD-2)
2. DRAWING NOT TO SCALE
3. ALL DIMENSIONS ARE IN MILLIMETERS
4. DIMENSIONS OF EXPOSED PAD ON BOTTOM OF PACKAGE DO NOT INCLUDE MOLD FLASH. MOLD FLASH, IF PRESENT, SHALL NOT EXCEED 0.15mm ON ANY SIDE
5. EXPOSED PAD SHALL BE SOLDER PLATED
6. SHADED AREA IS ONLY A REFERENCE FOR PIN 1 LOCATION ON THE TOP AND BOTTOM OF PACKAGE

# PACKAGE DESCRIPTION

**S6 Package**
**6-Lead Plastic TSOT-23**
(Reference LTC DWG # 05-08-1636)




NOTE:
1. DIMENSIONS ARE IN MILLIMETERS
2. DRAWING NOT TO SCALE
3. DIMENSIONS ARE INCLUSIVE OF PLATING
4. DIMENSIONS ARE EXCLUSIVE OF MOLD FLASH AND METAL BURR
5. MOLD FLASH SHALL NOT EXCEED 0.254mm
6. JEDEC PACKAGE REFERENCE IS MO-193

## RELATED PARTS

| PART NUMBER | DESCRIPTION | COMMENTS |
|---|---|---|
| **Infrastructure** | | |
| LT5511 | High Linearity Upconverting Mixer | RF Output to 3GHz, 17dBm IIP3, Integrated LO Buffer |
| LT5512 | DC-3GHz High Signal Level Downconverting Mixer | DC to 3GHz, 21dBm IIP3, Integrated LO Buffer |
| LT5515 | 1.5GHz to 2.5GHz Direct Conversion Quadrature Demodulator | 20dBm IIP3, Integrated LO Quadrature Generator |
| LT5516 | 0.8GHz to 1.5GHz Direct Conversion Quadrature Demodulator | 21.5dBm IIP3, Integrated LO Quadrature Generator |
| LT5517 | 40MHz to 900MHz Direct Conversion Quadrature Demodulator | 21dBm IIP3, Integrated LO Quadrature Generator |
| LT5519 | 0.7GHz to 1.4GHz High Linearity Upconverting Mixer | 17.1dBm IIP3, 50Ω Single Ended RF and LO Ports |
| LT5520 | 1.3GHz to 2.3GHz High Linearity Upconverting Mixer | 15.9dBm IIP3, 50Ω Single Ended RF and LO Ports |
| LT5522 | 600MHz to 2.7GHz High Linearity Downconverting Mixer | 4.5V to 5.25V Supply, 25dBm IIP3 at 900MHz, NF = 12.5dB, 50Ω Single-Ended RF and LO Ports |
| **RF Power Detectors** | | |
| LT5504 | 800MHz to 2.7GHz RF Measuring Receiver | 80dB Dynamic Range, Temperature Compensated, 2.7V to 5.25V Supply |
| LTC®5505 | 300MHz to 3GHz RF Power Detectors | LTC5505-1: –28dBm to 18dBm Range, LTC5505-2: –32dBm to 12dBm Range, Temperature Compensated, 2.7V to 6V Supply |
| LTC5507 | 100kHz to 1000MHz RF Power Detector | –34dBm to 14dBm Range, Temperature Compensated, 2.7V to 6V Supply |
| LTC5508 | 300MHz to 7GHz RF Power Detector | –32dBm to 12dBm Range, Temperature Compensated, SC70 Package |
| LTC5509 | 300MHz to 3GHz RF Power Detector | 36dB Dynamic Range, Temperature Compensated, SC70 Package |
| LTC5530 | Precision RF Detector with Shutdown and Gain Adjustment | 300MHz to 7GHz, –32dBm to 10dBm Range |
| LTC5531 | Precision RF Detector with Shutdown and Offset Adjustment | 300MHz to 7GHz, –32dBm to 10dBm Range |
| **RF Building Blocks** | | |
| LT5500 | 1.8GHz to 2.7GHz Receiver Front End | 1.8V to 5.25V Supply, Dual-Gain LNA, Mixer, LO Buffer |
| LT5502 | 400MHz Quadrature IF Demodulator with RSSI | 1.8V to 5.25V Supply, 70MHz to 400MHz IF, 84dB Limiting Gain, 90dB RSSI Range |
| LT5503 | 1.2GHz to 2.7GHz Direct IQ Modulator and Upconverting Mixer | 1.8V to 5.25V Supply, Four-Step RF Power Control, 120MHz Modulation Bandwidth |
| LT5506 | 500MHz Quadrature IF Demodulator with VGA | 1.8V to 5.25V Supply, 40MHz to 500MHz IF, –4dB to 57dB Linear Power Gain, 8.8MHz Baseband Bandwidth |
| LT5546 | 500MHz Ouadrature IF Demodulator with VGA and 17MHz Baseband Bandwidth | 17MHz Baseband Bandwidth, 40MHz to 500MHz IF, 1.8V to 5.25V Supply, –7dB to 56dB Linear Power Gain |
| **RF Power Controllers** | | |
| LTC1757A | RF Power Controller | Multiband GSM/DCS/GPRS Mobile Phones |
| LTC1758 | RF Power Controller | Multiband GSM/DCS/GPRS Mobile Phones |
| LTC1957 | RF Power Controller | Multiband GSM/DCS/GPRS Mobile Phones |
| LTC4400 | SOT-23 RF PA Controller | Multiband GSM/DCS/GPRS Phones, 45dB Dynamic Range, 450kHz Loop BW |
| LTC4401 | SOT-23 RF PA Controller | Multiband GSM/DCS/GPRS Phones, 45dB Dynamic Range, 250kHz Loop BW |
| LTC4402 | RF Power Controller for EDGE/TDMA | Multiband GSM/GPRS/EDGE Mobile Phones, 450kHz Loop BW |
| LTC4403 | RF Power Controller for EDGE/TDMA | Multiband GSM/GPRS/EDGE Mobile Phones, 250kHz Loop BW |





Linear Technology Corporation
1630 McCarthy Blvd., Milpitas, CA 95035-7417
(408) 432-1900 • FAX: (408) 434-0507 • www.linear.com

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