



# Microsemi<sup>®</sup>

## LX5530

### InGaP HBT 4.5 – 6.0GHz Power Amplifier

#### PRODUCTION DATA SHEET

#### DESCRIPTION

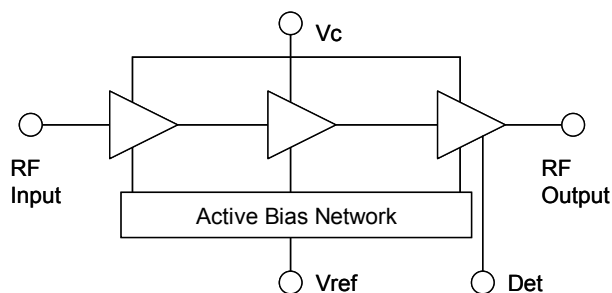
The LX5530 is a power amplifier optimized for the FCC Unlicensed National Information Infrastructure (U-NII) band, HyperLAN2 and Japan WLAN applications in the 4.9 – 5.9 GHz frequency range. The PA is implemented as a three-stage monolithic microwave integrated circuit (MMIC) with active bias, on-chip input matching and output pre-matching. The device is manufactured with an InGaP/GaAs Heterojunction Bipolar Transistor (HBT) IC process (MOCVD). It operates with a single positive voltage supply of 3 – 5V, with high power gain of up to 33dB. When operated at 5V supply voltage, it provides up to +25dBm linear output power for 802.11a OFDM spectrum mask compliance, and low EVM of 3% for up to +23dBm output power in the 4.9-5.9GHz band.

The LX5530 also features an on-chip power detector at the output port of the PA to help reduce BOM cost and PCB space for implementation of power control in a typical wireless system. The power detector is integrated with a temperature-compensated bias network and provides very stable response across a wide range of output power levels, over temperature extremes from -40 to +85°C.

The LX5530 is available in a 16-pin 3mmx3mm micro-lead package (MLP). The compact footprint, low profile, and excellent thermal capability makes the LX5530 an ideal solution for broadband, high-gain power amplifier requirements for IEEE 802.11a, and the emerging 802.16 WiMAX applications.

**IMPORTANT:** For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

#### BLOCK DIAGRAM



#### KEY FEATURES

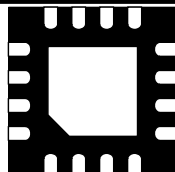
- Broadband 4.9 – 5.9GHz Operation
- Advanced InGaP HBT
- Single-Polarity 3 – 5V Supply
- Power Gain up to ~ 33dB for  $V_C=5V$ ,  $I_{CQ} = 250mA$
- Power Gain > ~28dB across 4.9-5.85GHz
- OFDM Mask Compliance Power  $P_{out} \sim +25dBm$  over 4.9-5.85GHz (ACPR ~ -50dBc @  $\pm 30MHz$  Offset)
- $P_{out}$  up to +23dBm with EVM ~3% ( $V_C = 5V$ )
- EVM < ~2.5% for  $P_{out} = +21dBm$  across 4.9-5.85GHz ( $V_C = 5V$ )
- EVM < ~2.5% for  $P_{out} = +19dBm$  across 4.9-5.85GHz ( $V_C = 4V$ )
- Total Current ~250mA for  $P_{out} = +20dBm$ , Duty Cycle = 99% ( $V_C = 4V$ )
- Complete On-Chip Input Match
- Simple Output Match for Optimal Broadband EVM
- On-Chip RF Decoupling
- Temperature-Compensated On-Chip Output Power Detector with Wide Dynamic Range
- Small Footprint: 3x3mm
- Low Profile: 0.9mm

#### APPLICATIONS

- FCC U-NII Wireless
- IEEE 802.11a
- HyperLAN2
- 5GHz Cordless Phone
- IEEE 802.16 WiMAX

#### 3X3MM MLP PACKAGE

MSC  
5530  
608Y



#### PACKAGE ORDER INFO

**LQ** Plastic MLPQ  
16 pin  
RoHS Compliant / Pb-free  
**LX5530LQ**

Note: Available in Tape & Reel. Append the letters "TR" to the part number. (i.e. LX5530LQ-TR)



**Microsemi**

## INFORMATION

*Thank you for your interest in Microsemi® IPG products.*

The full data sheet for this device contains proprietary information.

To obtain a copy, please contact your local Microsemi sales representative. The name of your local representative can be obtained at the following link

<http://www.microsemi.com/contact/contactfind.asp>

**or**

Contact us directly by sending an email to:

[IPGdatasheets@microsemi.com](mailto:IPGdatasheets@microsemi.com)

Be sure to specify the data sheet you are requesting and include your company name and contact information and or vcard.

*We look forward to hearing from you.*