Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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LX5514M

InGaP HBT 2.4 – 2.5 GHz Power Amplifier

PRODUCTION DATA SHEET

DESCRIPTION

The LX5514M is a power amplifier optimized for WLAN(802.11b/g/n) applications in the 2.4-2.5 GHz frequency range. The PA is implemented as a two-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 3.3V, and provides power gain of 27dB and output powers of 19dBm at 3.3V for 3% EVM in the 2.4-2.5GHz.

LX5514M 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 LX5514M is available in a 6-pin 1.5mm x 1.5mm dual flat no lead package (DFN 1.5×1.5mm^2-6L). The compact footprint, low profile, and excellent thermal capability make the LX5514M an ideal solution for 802.11b/g/n applications.

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

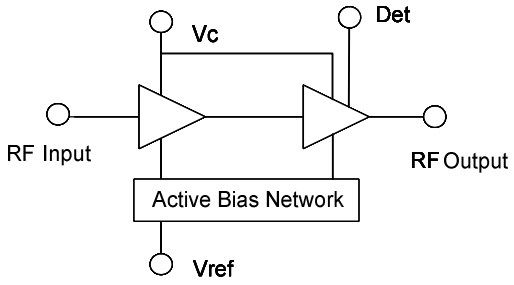
KEY FEATURES

- Advanced InGaP HBT
- 2.4-2.5GHz Operation
- Single-Polarity 3.3V Supply
- Quiescent Current ~ 84mA
- Power Gain ~ 27dB
- 19dBm @3% EVM/3.3V
- Total Ic ~ 130mA @19dBm/3.3V
- Complete On-Chip Input Match
- Simple Output Match
- Small Footprint: 1.5x1.5mm^2
- Low Profile: 0.4mm

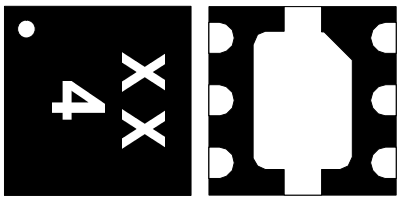
APPLICATIONS

- 802.11b/g/n

BLOCK DIAGRAM



1.5X1.5MM MLP PACKAGE



Note: XX is a date code.

PACKAGE ORDER INFO

LL	Plastic DFN 1.5×1.5-6L
	RoHS Compliant / Pb-free
	LX5514MLL

Note: Available in Tape & Reel. Append the letters "TR" to the part number. (i.e. LX5514MLL-TR)

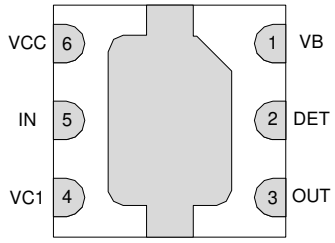
Microsemi
Analog Mixed Signal Group
11861 Western Avenue, Garden Grove, CA. 92841, 714-898-8121, Fax: 714-893-2570

ABSOLUTE MAXIMUM RATINGS

DC Supply Voltage, RF off..... 5 V
Collector Current .....500 mA
Total Power Dissipation.....2 W
RF Input Power (With 50 Ohm Load at Output)..... +10 dBm
Maximum Junction Temperature ($T_{J\ max}$) .....+150°C
Operation Ambient Temperature (T_A) .....-40 to +85°C
Storage Temperature.....-65 to +150°C
Peak Package Temp. for Solder Reflow (40 seconds max exposure) ..... +260°C (+0,-5)

Note: Exceeding these ratings could cause damage to the device. All voltages are with respect to Ground. Currents are positive into, negative out of specified terminal.

PACKAGE PIN OUT



LQ PACKAGE
(Bottom View)

RoHS / Pb-free NiPdAu Lead Finish

THERMAL DATA

LQ Plastic QFN 3×3 16-Pin

THERMAL RESISTANCE-JUNCTION TO CASE, θ_{JC}	8.4 °C/W
THERMAL RESISTANCE-JUNCTION TO AMBIENT, θ_{JA}	86.1 °C/W

Junction Temperature Calculation : $T_J=T_A+(P_D\times\theta_{JA})$.
The θ_{JA} numbers are guidelines for the thermal performance of the device/pc-board system. The 4 layers PCB is constructed based on JESD 51-7 specification and via based on JESD 51-5. All of the above assume no ambient airflow.

FUNCTIONAL PIN DESCRIPTION

Name	Pin	Description
RF IN	5	RF input into the power amplifier. This pin is RF-matched to 50 Ohm, and shorted to ground at DC.
VB	1	Bias current control voltage for the first and second stage.
VCC	6	Supply voltage for the bias reference and control circuits.
RF OUT	3	RF output and power supply for the second stage amplifier.
VC1	4	Power supply for the first stage amplifier.
DET	2	DETECTOR output.

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