



**Microsemi**

**LX5509**

# InGaP HBT 5GHz Power Amplifier Abridged Datasheet

## Description

The LX5509 is a power amplifier optimized for 802.11ac/a/n applications in the 5.15-5.85 GHz frequency range. The LX5509 includes a three-stage PA, active bias, input/output matching, and a harmonic filter.

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 28dB and output powers of 19-20 and 19.5-20.5 dBm at 3.3V across the frequency band for 1.8 and 3% dynamic EVM(DEVM), respectively.

The 2nd and 3rd harmonics are lower than -45dBm/MHz over the frequency band due to an integrated harmonic filter. The LX5509 also features an on-chip power detector to help reduce BOM cost and PCB space for implementation of power control in a typical wireless system.

The LX5509 is available in a 20-pin 4mm x 4mm quad flat no lead package (QFN 4x4-20L). The compact footprint, low profile, and excellent thermal capability make the LX5509 an ideal solution for 802.11ac/a/n applications.

## Features

- ◆ Advanced InGaP HBT
- ◆ 5.15-5.85GHz Operation
- ◆ Single-Polarity 3.3V Supply
- ◆ Power Gain ~ 28dB
- ◆ 19-20dBm @1.8%DEVM for 802.11ac
- ◆ 19.5-20.5dBm @3%DEVM for 802.11a
- ◆ <-45dBm/MHz for 2<sup>nd</sup> Harmonic
- ◆ <-45dBm/MHz for 3<sup>rd</sup> Harmonic
- ◆ Complete Input/Output Match
- ◆ Temperature-Compensated
- ◆ On-Chip Output Power Detector
- ◆ Small Footprint: 4x4mm<sup>2</sup>
- ◆ Low Profile: 0.9mm
- ◆ RoHS Compliant for Pb-free

## Applications

- 802.ac/a/n

