

**DESCRIPTION**

LX5551 is a high-performance WLAN front-end module (FEM) for 802.11b/g/n and other applications in the 2.4-2.5GHz frequency range. LX5551 integrates an advanced InGaP/GaAs Heterojunction Bipolar Transistor (HBT) power amplifier with both input/output impedance matching, and an InGaAs pseudomorphic HEMT (pHEMT) switch, into a single 3x3mm package.

The Tx path of LX5551 features a two-stage monolithic microwave integrated circuit (MMIC) power amplifier with active bias circuitry, and 50  $\Omega$  input/output matching inside the package. With 3.3V supply voltage and 90mA nominal bias current, the Tx path provides 27dB gain and +18dBm linear output power, with extremely low total EVM (<3%) for 64QAM/54Mbps OFDM. Both gain and power are readily measured at antenna port, with switch insertion loss included.

The Rx path of LX5551 includes a low-cost SPDT switch with excellent insertion loss and isolation. It features a very low Tx-to-Rx port leakage in receive mode.

LX5551 is available in a 16-pin, 3x3mm micro-lead package (MLPQ-16L). With its best-class performance and compact footprint, LX5551 offers an ideal front-end solution for the ever demanding design requirements of today's WLAN systems, including 802.11b/g and the latest 11n MIMO implementation.

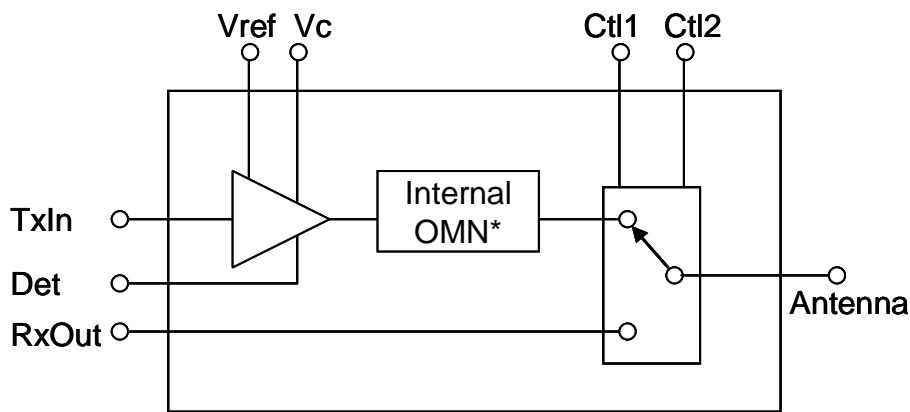
**IMPORTANT:** For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

**KEY FEATURES**

- 2.4-2.5GHz 11b/g/n Front-End Solution in a Single 3x3mm MLP Package
  - All RF Ports Matched to 50  $\Omega$
  - Single-Polarity 3.3V Supply
  - Tx Path Power Gain ~ 27dB
  - Rx Path Loss ~ 0.6dB
  - Pout ~ +18dBm at Antenna\* for EVM = 3%
  - Total Current ~140mA for +18dBm with 90% Duty Cycle
  - Pout > +22dBm for 11b 1Mbps DSSS Mask Compliance
  - Small Footprint: 3x3mm<sup>2</sup>
  - Low Profile: 0.9mm
  - RoHS Compliant & Pb-Free
- \* Including SPDT switch loss

**APPLICATIONS**

- IEEE 802.11b/g
- IEEE 802.11n MIMO

**BLOCK DIAGRAM**


\*OMN: Output Matching Network

**PRODUCT HIGHLIGHT**

**PACKAGE ORDER INFO**

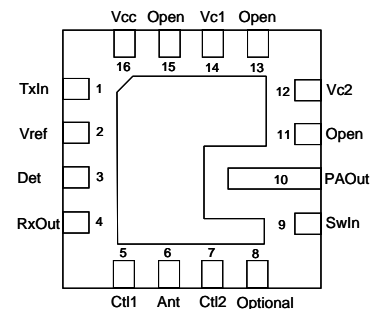
	Plastic MLPQ
	16 pin 3x3mm
<b>LQ</b>	RoHS Compliant /Pb-Free
	LX5551LQ

Note: Available in Tape & Reel.  
Append the letters "TR" to the part number.  
(i.e. LX5551LQ-TR)

**ABSOLUTE MAXIMUM RATINGS**

DC Supply Voltage, RF off (PA).....	5V
(Switch) .....	5V
Collector Current (PA).....	500mA
Total Power Dissipation.....	2W
RF Input Power .....	10dbm
Maximum Junction Temperature (T <sub>j</sub> max) .....	+150°C
Operation Ambient Temperature .....	-40°C to +85°C
Storage Temperature.....	-65°C to +150°C
RoHs/Pb Free Peak Package Solder Reflow Temperature (40 seconds maximum 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**  
("See-Through" View from Top)

RoHS/Pb-free 100% Matte Tin Lead finish

**THERMAL DATA**

**LQ** Plastic MLPQ 16-Pin

THERMAL RESISTANCE-JUNCTION TO CASE, $\theta_{JC}$	17°C/W
THERMAL RESISTANCE-JUNCTION TO AMBIENT, $\theta_{JA}$	55.2°C/W

Junction Temperature Calculation:  $T_j = T_A + (P_D \times \theta_{JA})$ .

The  $\theta_{JA}$  numbers are guidelines for the thermal performance of the device/pc-board system. All of the above assume no ambient airflow.



**Microsemi**<sup>®</sup>

## INFORMATION

*Thank you for your interest in Microsemi<sup>®</sup> Analog Mixed Signal 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.*