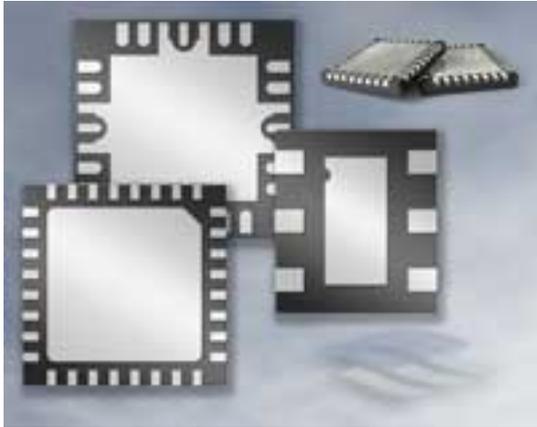


Endwave Develops Enhanced QFN Packages to 50 GHz



Endwave Corporation has an advantage when housing its high-performance monolithic-microwave-integrated-circuit (MMIC) products in a surface-mount package. By re-engineering the widely accepted QFN, or Quad Flat No-leads surface-mount-technology (SMT) package, Endwave has more than doubled the usable frequency range of the housing, increasing its upper-frequency limit to 50 GHz and higher.

A standard QFN package is a micro-lead-frame-type surface-mount-technology (SMT) housing designed to provide protection for MMICs and other semiconductors while also simplifying their attachment to printed-circuit boards (PCBs). By their design, QFNs allow solder connections directly to PCB traces, without the complexity of fabricating plated through holes (PTHs) in the circuit board. Standard lower-cost plastic-molded QFN packages operate to about 3 GHz, while conventional higher-performance air-cavity QFNs can be used to about 25 GHz.

Because of the high operating frequencies of their MMIC and multilithic microsystem (MLMS™) passive components, Endwave has re-engineered conventional QFN packages to achieve extended-frequency performance. For example, the lengths of bond wires within the package, used to connect device bond pads to package ports, are minimized wherever possible with the aid of custom laminate sections and a double-reversebonding technique. This results in reduced parasitic circuit elements and higher frequency operation of plastic QFN packages, with lower insertion loss and minimal phase distortion through 50 GHz.

Endwave characterizes the electrical performance of their enhanced QFN packages by means of calibrated vector network analyzers (VNAs) with millimeter-wave frequency capability. Using specially designed test fixtures to minimize the impact of the test setup on the behavior of the package, the housings are evaluated with and without attached die to optimize package performance for each of Endwave's MMIC product lines, including its single-function and multifunction MMICs, including frequency upconverters and downconverters, amplifiers, and voltage-controlled oscillators (VCOs).

Endwave Develops Enhanced QFN Packages to 50 GHz

Published on Wireless Design & Development (<http://www.wirelessdesignmag.com>)

Source URL (retrieved on 03/26/2015 - 10:25pm):

<http://www.wirelessdesignmag.com/product-releases/2010/12/endwave-develops-enhanced-qfn-packages-50-ghz>