**Title:**

Interplex Engineered Products launch QFN version of pre-molded LCP, Air Cavity Package

Interplex Engineered Products (IEP) has introduced a new QFN format for plastic molded Air Cavity Package (ACP) comprising a Liquid Crystal Polymer (LCP) thermoplastic injection molded body around a wirebondable plated leadframe.

The ACP is a widely used option for MEMS Sensors, RF products, Hybrid circuit assemblies and optical/photonic devices. Typical standard ACP are metal cans and ceramic leadless chip carriers (LCC). Custom ACP are also provided by machined metal housings and LTCC options. However, the industry standard QFN outline is now widely available as a ceramic ACP and lower cost plastic materials such as Liquid Crystal Polymers (LCP) and Thermoset (Duraplast) premolded types. Until recently, only 2 types of ACP QFN exist. A flat base variant which accepts a cavity lid, or ring-frame and flat lid cover, and a cavity wall package variant that can be filled (potted) or accept a flat lid. IEP’s new ACP 5x5 mm QFN is a new option which has a low wall height cavity base and a cavity lid enabling the package device to have a low overall height of 0.8mm.

The new IEP package has some real advantages for both MEMS and RF devices. The parts are leadframe based, in a cluster of 24 rather than being individual pieces. The design of a very low wall provides added rigidity to the frames for assembly processes and allows optional fill for seal or potting but does not restrict equipment performance. This greatly simplifies and improves handling and assembly processes and the packages can be used for prototype development as well as short run production.

The matrix lid allows better handling and faster, more accurate lidding due to its self location features and size. This cavity design allows for loop wire bonds for internal components and for thicker devices such as MEMS. Also, the lids can be adapted to provide apertures for media sensing of pressure, gas, liquids or optical signals.

This novel package has a specially designed leadframe format to suit high frequency (>20Ghz) RF components and the plastic does not reflect back as much RF energy as does a metal can, improving the performance at the higher frequencies.

The ability of IEP to be able to supply parts in leadframe clusters, and the design of the parts, offers customers the option of stocking a very flexible, adaptable package format for many development applications. It is expected that many of the smaller assembly facilities will now be able to offer their customers a rapid turnaround of small quantity devices in an "industry standard" package format at very competitive prices.

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