

## Filter Packaging and Shielding

The previous page briefly introduced DLI's newest filter packaging technology. Printed wire board covers offer excellent RF shielding for solder surface mount applications. PWB covered components are also extremely insensitive to high shock and vibration environments.

Covers are attached using both conductive and non-conductive epoxy. The assemblies are then cured making a small, sturdy surface mount package. The overall height of the package is typically .1 inches.



A second option is the attachment of an integral metal cover to the filter. Typically, the cover will have tabs that fit into ground vias along the perimeter of the part and a high-temperature solder will be used for the assembly.

Sheet metal covers are compatible for both solder surface mount and chip and wire filter applications. Covers can be recessed to expose the I/O contact pad for chip and wire filters to allow wire-bonding. Selective plating can be utilized to ensure a solderable metal scheme is employed on the areas of chip and wire filters where the cover is attached to the part. The I/O contact pad is not plated with a solderable metal scheme to facilitate reliable wire bonding. The overall assembly height can vary from .07 to .1 inches.



The third option leaves packaging up to the customer. Either the next level of assembly provides the RF shielding for the filter or the customer can have its own cover integrated.

DLI engineering considers the customer's housing dimensions or offers channel widths and cover heights for particular designs. Typically, the distance from the part edge to the housing wall is recommended to be .01 to .015 inches. Cover heights are typically set at 3 to 5 times the thickness of the filter substrate. Standard filter thicknesses are .01, .015, .02 and .03 inches.

If the customer provides its own shielding for the filter, it is very important that DLI engineering knows the channel width and cover height that will enclose the device. These dimensions will be taken into account during design and test to ensure that the part will work in its next level of assembly.

