

## 1 Purpose

Deewave Electronics provide guidelines for the installation of DEEWAVE Drop-in Isolators and Circulators.

## 2 Material Required

- 2-1 DEEWAVE Drop-in Isolators/Circulators
- 2-2 Alcohol, Best Commercial Grade, 99% Pure
- 2-3 Cleaning solution/solvent
- 2-4 Kester Liquid Rosin Flux # 145 or Equivalent
- 2-5 Solder appropriate for application
- 2-6 Flux-Off

## 3 Preparation to Installation

All isolator and circulator tabs shall be correctly positioned and free of debris and contaminants, which could inhibit the solderability to the user trace pad. Circuit tabs should be gently bent to align with the user's trace pad prior to soldering.

3-1 Cleaning: Tabs can be cleaned with a cotton swab, pipe cleaner or non-abrasive absorbent cloth or pad and an appropriate cleaning solution/solvent. Don't submerge or spray the component with any cleaning solution or solvent. Don't use an ULTRA-SONIC component for cleaning. Remove any extraneous fibers prior to soldering.

3-2 Mounting Surface: The mounting surface is generally the bottom of the component. It should be free of any contaminants. Don't submerge or spray the component with any cleaning solution or solvent. Don't use an ULTRA-SONIC component for cleaning. Apply the cleaning solution/solvent to the absorbent material being used, then wipe the mounting surface.

3-3 Mounting Area: The mounting area should be designed so that when the unit is mounted, the bottom of the tab leads contact the top of the user traces. Also, the bottom of the unit must make proper ground to mounting surface. Tapped holes in the mounting area are necessary for installing components with mounting clearance holes. Use appropriate fasteners when installing the component.

3-4 The mounting area cut-out should be kept minimal and the user trace as close as possible to the side walls of the component, without the risk of short-circuiting the component. The mounting area should be designed so that no other part of the user's application will interfere with or block the installation of the component. The gap between the component's body and user's trace should not exceed 0.25mm (0.010") at 2.0 GHz and lower and 0.13mm (0.005") for all frequencies greater than 2.0 GHz.

3-5 User Trace: The user trace should be tinned in close proximity to where the component tab will be located. A small amount of liquid flux should then be applied to the user trace, prior to installation of the component.

## 4 Installation:

Position the unit symmetrically in the base and align the input/output tabs over the soldering traces.

4-1 Install appropriate fasteners when mounting the component to the user base. See above Figure.

4-2 Ensure that the circuit tabs make contact with the user traces.

4-3 Apply a thin, even coating of liquid flux to the area of the user trace where the circuit tab makes contact. Methodology of flux application is discretionary. However, any flux, which may backflow into the component, can impair the electrical performance. Proper caution should be exercised when using any liquid flux.

4-4 Heat the component tab lead in close proximity to the user trace using a soldering iron. Apply a small amount of cored solder evenly, where the soldering iron contacts the circuit tab lead. Allow for sufficient wetting to occur and proper solder flow prior to removing the soldering iron. The process should not exceed 5-10 seconds due to potential damage to the magnets. Excessive heat can demagnetize the magnets causing degradation to the electrical performance. Do not allow flux or solder to splatter where internal parts of the isolator/circulator are exposed.

4-5 Allow solder to cool. Clean solder joint with approved cleaning solvents.

4-6 Installation is completed.

