Application Guidelines for Non-isolated Converters

AN11-003 Interchangeable Soldering of Different Generation DOSA™ POL Modules (TLynx™ 3G ↔ DLynx™ 4G)

Introduction

GE Critical Power offers 4th generation DLynx products which have higher power and digital capability. Many customers design their PWB to accommodate both 3G (3rd generation) Pico Lynx module and the 4G (4th generation) DLynx modules to ensure product flexibility. This application note details the assembly process to solder the 3rd generation Pico TLynx modules onto the 4th generation Pico DLynx footprint.

Current View

A. 3G Modules vs. 4G modules

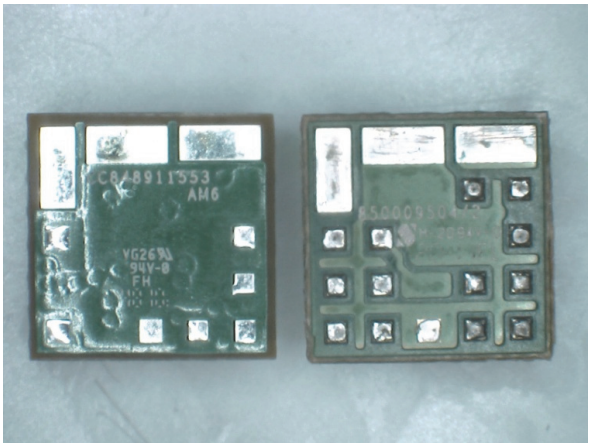

Figure 1. Bottom View of both modules

In general, the Pico Lynx products are designed such that the 3G product can be used with the 4G footprint. The pads of 3G are nested within the 4G footprint. The 3G module has 10 pads and the 4G module has 17 pads.

B. 3G Footprint versus 4G Footprint

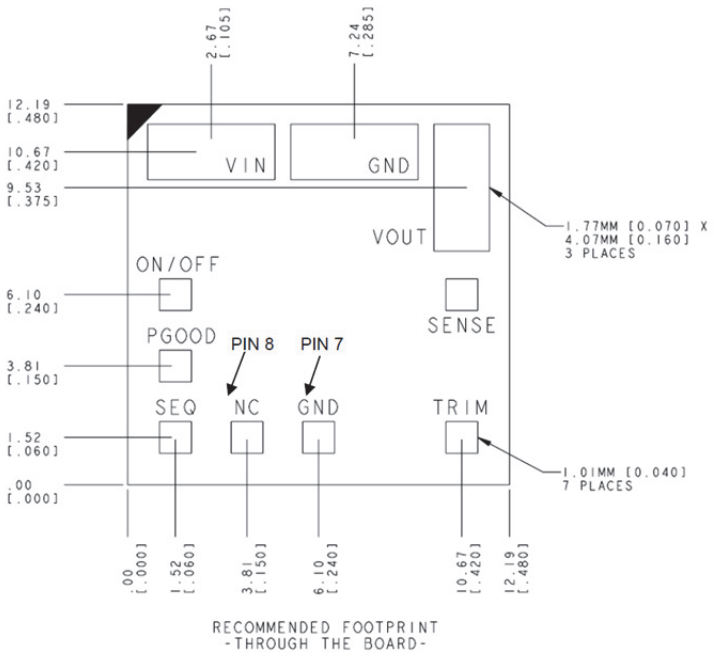

Figure 2. Footprint of 3G modules

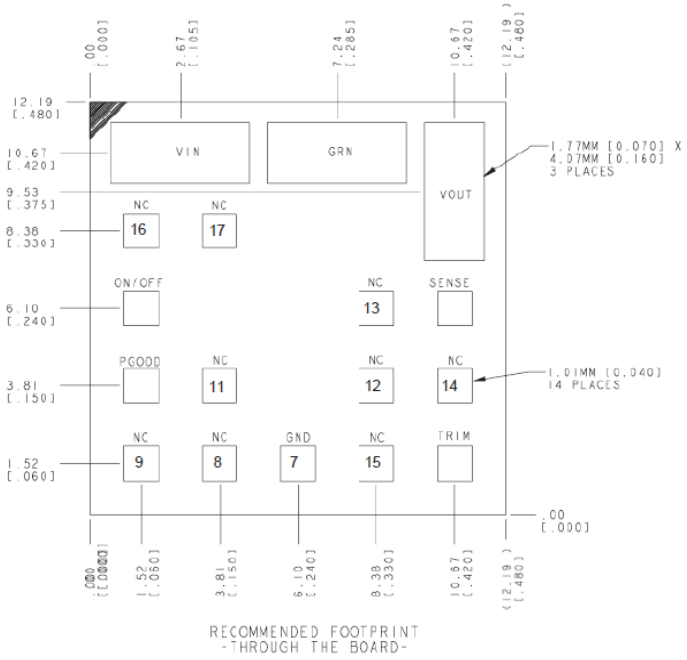

Figure 3. Footprint of 4G modules

All the output pads of 3G and 4G modules are matched with each other. All the signal pads are matched in size.

Application Guidelines for Non-isolated Converters

AN11-003 Interchangeable Soldering of Different Generation DOSA™ POL Modules (TLynx™ 3G ↔ DLynx™ 4G)

Soldering of 3G module onto 4G footprint

To assemble the 3G module on the 4G footprint, the customer only needs to design the stencil aperture opening based on the 3G footprint for the 3G module. This aperture opening will be at the PWB location where the 3G modules are employed in the customer PWB. It is preferred not to have any solder on the unused pads on the 4G footprint. Below is the recommended aperture opening for the 10 pads in the 3G module.

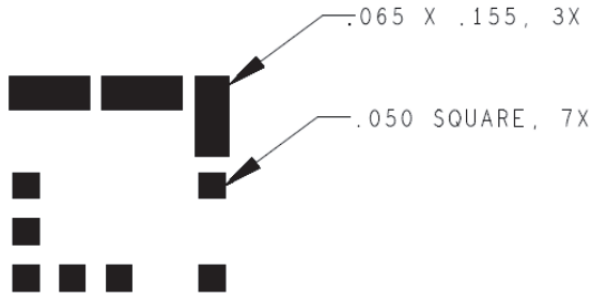

Figure 4. Recommended aperture opening for 3G module

Soldering of 4G module on to 4G footprint

To assemble 4G modules on to the 4G footprint, the customer only needs to design the stencil aperture opening based on the 4G footprint for that module. This aperture opening will be at the PWB location where the 4G modules are employed in the customer PWB. For 4G modules, the customer can use the same opening for the 3 large output pads (65 mils x 155 mils) and the 14 signal pads (50 mils square) as per Figure 4

Soldering of 4G module on to 3G Footprint

Because the 4G module of Pico Lynx has more pads than the current 3G footprint, the soldering of the 4G module onto 3G footprint shall be attempted after considering the following notes:

1. There shall not have any vias on the customer PWB which are corresponding to the modules pads. Otherwise, the modules can be shorted to these vias.

2. If there are no vias in the customer PWBs at the corresponding unused modules pad of the 4th generation module, the solder bumps at these unused pads of the module shall stay in place and not cause any solder joint reliability issues

Contact Us

For more information, call us at

USA/Canada:
+1 888 546 3243, or +1 972 244 9288

Asia-Pacific:
+86.021.54279977*808

Europe, Middle-East and Africa:
+49.89.878067-280

India:
+91.80.28411633

www.gecriticalpower.com

imagination at work