**Claims**

1. An apparatus, comprising:

a substrate having a first surface and a second surface opposite the first surface of the substrate;

a photonic integrated circuit (PIC) coupled to the substrate and having a first surface, wherein the first surface of the substrate is proximate the first surface of the PIC and the second surface of the substrate is distal the first surface of the PIC;

a lid, contacting the first surface of the substrate and at least partially covering the PIC, exhibiting at least one retaining feature; and

an optical fiber coupled to the PIC and in contact with the retaining feature of the lid.

2. The apparatus according to claim 1, wherein the retaining feature comprises a groove in the lid.

3. The apparatus according to claim 1, wherein the retaining feature comprises a fiber channel.

4. The apparatus according to claim 1, wherein the lid is formed of a thermally conductive material.

5. The apparatus according to claim 1, further comprising a thermal material in contact with the lid and the PIC.

6. The apparatus according to claim 1, wherein a portion of the optical fiber is coiled around the retaining feature.

7. The apparatus according to claim 1, further comprising a circuit board on which the substrate in mounted.

8. The apparatus according to claim 1, wherein the optical fiber is edge-coupled to the PIC.

9. The apparatus according to claim 1, further comprising an electronic integrated circuit disposed on the first surface of the substrate.

10. The apparatus according to claim 1, further comprising a fiber assembly containing a groove on which the optical fiber is disposed.

11. A method comprising:

packaging a photonic integrated circuit (PIC) in a package comprising a substrate and a lid, such that:

a first surface of the substrate is proximate a first surface of the PIC and a second surface of the substrate is distal the first surface of the PIC,

the lid contacts the first surface of the substrate, and

the lid at least partially covers the PIC;

coupling an optical fiber to the PIC;

mechanically coupling the optical fiber to a retaining feature of the lid; and

performing reflow soldering of the package while the optical fiber is mechanically coupled to the retaining feature of the lid.

12. The method of claim 11, further comprising surface-mounting the package on a chip carrier.

13. The method of claim 11, further comprising mechanically uncoupling the optical fiber from the retaining feature of the lid subsequent to the reflow soldering.

14. The method of claim 11, wherein mechanically coupling the optical fiber to the retaining feature of the lid comprises coiling a portion of the optical fiber around the retaining feature of the lid.

15. The method of claim 11, wherein coupling the optical fiber to the PIC comprises edge-coupling the optical fiber to the PIC.