



COMPOUND
PHOTONICS

Compound Photonics Technical Note TN03: Procedure for Mounting 14-Pin Butterfly Devices

This device should not be operated unless properly attached to a heat sink. Failure to adequately cool the device will cause immediate and permanent damage.

The heat sink should be made of copper, aluminum or another material with similar, or better, thermal conductivity. The heat sink surface finish should be 32 μ -in. (0.8 μ m) or better. The surface flatness under the package should be better than 0.0005" (12 μ m). The heat sink must be capable of removing heat from the package in order that the case temperature of the package does not exceed its specified maximum operating temperature. The case temperature limits for all Compound Photonics packages are specified as the maximum temperature on the base of the package.

Use of a thermal interface material between the package and heat sink is strongly recommended. A good quality thermal grease or thermal interface pad can be used. Typically, it is desirable to achieve less than 0.2 K/W between the package and the heat sink; this can be achieved if the thermal interface material is rated at 2.5×10^{-5} K-m²/W (0.038 K-in²/W) or better. Compound Photonics recommends Panasonic "PGS" (Pyrolytic Graphite Sheet) thermal interface material (Compound Photonics P/N ALP-03788).

The package can be mounted with NC#2-56 or M2.5x 0.45 screws. First, the screws must be tightened to a torque of 2.0 in-oz (0.015 N-m) in the order, 1-3-2-4, see Figure 1. Next, the screws should be tightened to 10 in-oz (0.070N-m) in the same order, 1-3-2-4. The package can be permanently distorted and the internal components destroyed if the screws are tightened unevenly or are over tightened. The screw threads should be locked to prevent loosening over the time.

