OP-AMP MOUNTING TECHNIQUES

Analog Dialogue receives a great number of inquiries each month regarding recommended mounting techniques for various A.D. amplifiers.

One fear frequently expressed is that the amplifier may be destroyed by making solder connections directly to the pins of the amplifier. As shown in Figure 1 these pins extend well into the amplifier package, and the internal connections are made at the remote end of the pin. Consequently, heat generated by normal soldering processes, including dip, flow, wave, or hand soldering will cause no damage whatever.

Another difficulty is sometimes encountered in the insertion of the amplifier into pre-drilled circuit boards. The pin spacing on all A.D. amplifiers is held to .005", but combined with the tolerances of the drilled P.C. board, insertion difficulties may arise. Although some users solve this problem by drilling oversized holes, this occasionally leads to faulty solder connections. Reports from the field indicate that many customers effectively eliminate these problems by the use of pin receptacles. (Figure 2.) These devices are commercially available from AMP, Incorporated (#1-380758-0) and Cambion (#338-1-03). These receptacles have sufficient "float" built into them to accommodate the tolerances usually encountered in P.C. board applications. Additionally, some users have found that because the receptacles can be soldered in place and the amplifier inserted later, problems of logistics, rework, and retrofit are relieved. The spring-loaded receptacles are re-usable and will secure the amplifier for most industrial and commercial environments. Where extreme vibration or demanding specifications require absolute security, any A.D. amplifier can be supplied with molded-in screw inserts (Figure 3) on special order.

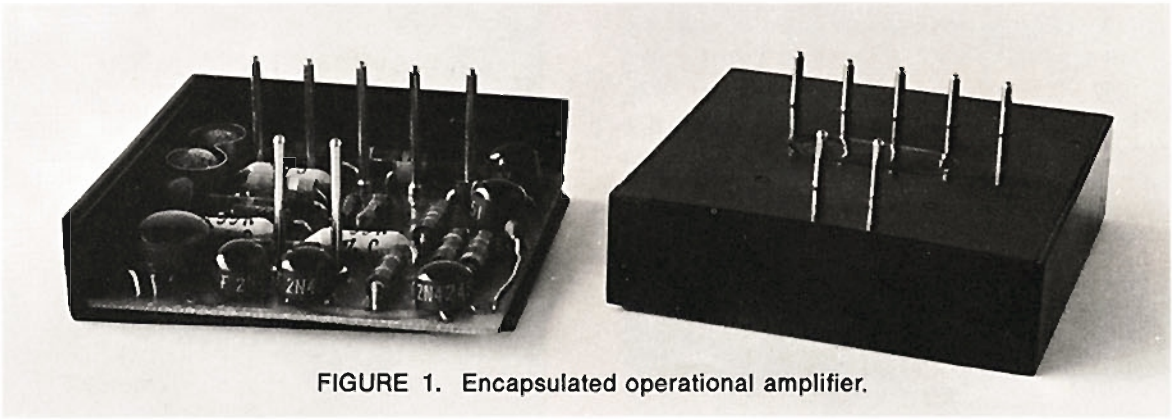

FIGURE 1. Encapsulated operational amplifier.

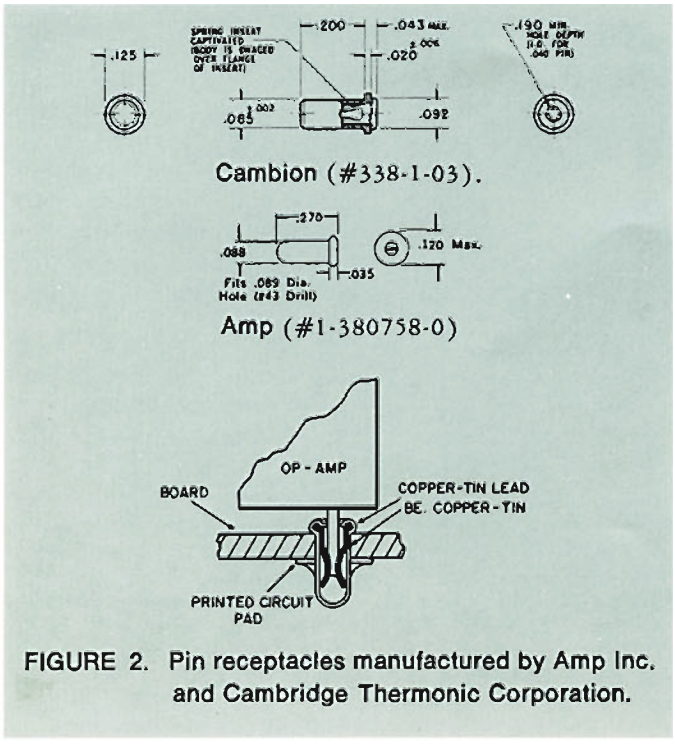

FIGURE 2. Pin receptacles manufactured by Amp Inc. and Cambridge Thermonic Corporation.

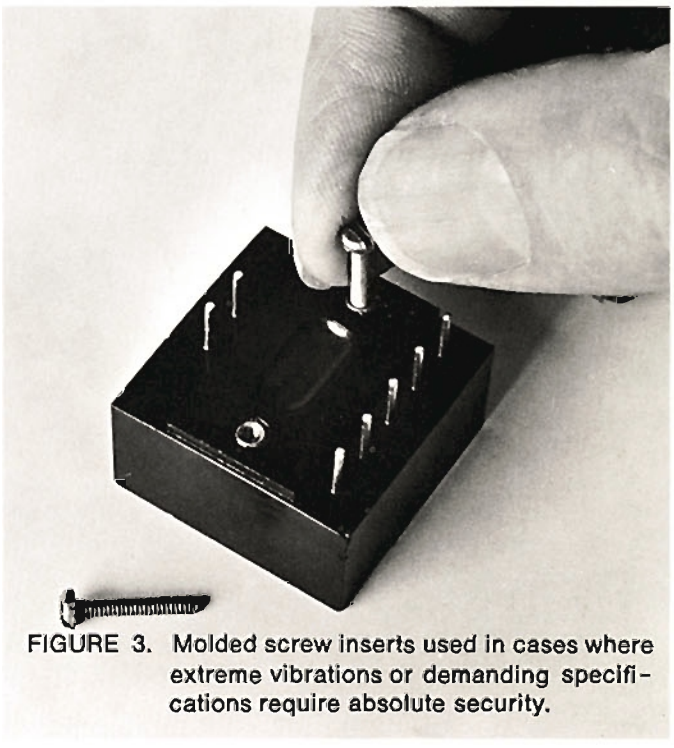

FIGURE 3. Molded screw inserts used in cases where extreme vibrations or demanding specifications require absolute security.