

Mechanical Mounting Considerations

General Description

RO DC/DC and AC/DC converter modules have proven to be extremely rugged, and are designed to meet MIL-STD-810D requirements. Also, once they're installed properly on a printed circuit board, they can take all the normal mechanical forces for circuit boards and circuit board mounted components. Reasonable care must exercise, however, during the design and fabrication of modules into power supply assemblies to prevent excess stress that could cause mechanical damage to the case or the electrical terminal pins.

Implementation

Design

Good mechanical engineering practices must be observed in designing modules into power supply assemblies to prevent excess stress or bending forces on the modules and their electrical terminal pins. Circuit board holes and sockets must be properly located and mechanical attachment to heatsinks and circuit boards must be designed to prevent excess shear, compression, or tensile forces on the pins. (See AP-19, Hole Dimensions and Socket Information.)

Assembly

Good manufacturing procedures must be observed in assembling modules into power supply assemblies to prevent excess stress on the modules or pins. Reasonable care must be exercised in inserting (and removing) modules from printed circuit boards (See AP-1, Module Handling Considerations).

In particular, care must be exercised in applications where a single heat sink is attached to more than one module in a soldered application. If possible, the heat sink should be assembled to the modules prior to soldering. In situations where this is not possible, care must be exercised to insure that bolting of the modules to the heat sink following the soldering operation does not result in excess stress on the pins. One approach might be to fixture the modules during soldering to insure their base plates are co-planer and to also insure that the heatsink is flat and that pin forces are reasonable during and after assembly.

Related Topics

AP-1 Module Handling Considerations
AP-18 Board Layout Considerations and Recommendations
AP-19 Hole Dimensions and Socket Information