

Recommendations for Handling of the PF600-1

In this application note, you will find recommendations for handling of the PF600-1 in manufacturing.

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Recommendations for Handling of the PF600-1 PWB and Solder Considerations

THE MATING APPLICATION CIRCUIT BOARD

The PF600 will normally be soldered to a printed circuit board. Single-sided or multilayer types are suitable, but note the following recommended hole sizes. They are specified to facilitate removal of the unit should that ever be needed, with minimal damage to either module or board. A larger clearance is therefore suggested for through-hole plated boards.

Hole	Through-hole plated	Non-plated
0.040" pins (8 per)	0.055"	0.050"
0.060" pins (5 per)	0.076"	0.070"
Mounting (4 per)	0.130"	0.130"

Any connector with a sufficiently low contact resistance is likely to cause the pin force specifications to be exceeded during removal. Connectors other than the ZIF types used for testing are therefore not recommended.

INSTALLATION

When mounting the module to the heatsink, use M3 screws long enough to enter the four mounting bushes by at least 5mm. If longer screws are used, they can pass through the connection PWB and ensure accurate registration between it and the module.

After mechanically mounting the module, solder all 17 pins, using the correct amount of solder to form a good fillet, especially on non-PTH (single-sided) boards.

REMOVAL

Using an iron with adequate heat output but no more than 370°C, remove all solder from the 17 pins. Use a solder sucker and solder wick, with extra flux as necessary. Release the mounting screws and ensure that all pins are fully de-soldered before attempting to extract the module. This is particularly difficult on plated-through holes. Note that the large clearance in the above hole-size table is intended to make it easier to remove the solder.

If force is used to extract the module without completely releasing the solder joints, damage will occur to the module and to the board on which it is mounted. Note the specification of absolute maximum pin forces:

Table 1: Absolute Maximum Applied Pin Forces

Pin Size	Tension	Compression	Radial
0.040"	5 oz.	1.8 lbs.	7 oz.
0.080"	7 oz.	2.2 lbs.	10 oz.

GENERAL HANDLING

With appropriate handling, the PF600 is capable of long and reliable service, but it is a fragile item, and must be handled correctly to achieve this.

The PF600-1 is built on an insulated metal substrate, referred to elsewhere as its "baseplate". The components on it include multilayer ceramic capacitors, which are notoriously intolerant of mechanical abuse. Heavy items like the main transformer can damage the substrate if shocked. There is no potting compound which might help to absorb and distribute damaging forces. A dropped unit is almost certainly a dead unit.

Ensure that the pin force specification, above, is never exceeded. Tension, in particular, can separate the insulation layers of the baseplate, and may well damage nearby components.

When shipping a module, use the packaging in which it was received or other packaging of at least the same performance.

See also ACAN-15, which deals with the process of mounting the unit on a heatsink.