Axiom PCBA Design for Manufacturability Guidelines

Section: 10.1.2	Revision: A	Revision Date: 2/15/13

DFM Subject: BGA Size and Location, Pad Crater Prevention

DFM Requirement:
BGA size reference relative to pad cratering:
Small BGAs: maximum length is < 30mm – lower risk
Large BGAs: maximum length is > 30mm – higher risk

Avoid locating larger (> 30mm) BGAs in higher risk areas:
1. Square shaped PCBs – note higher risk mounting locations in Figure 1.
2. Rectangular shaped PCBs – note higher risk mounting locations in Figure 2.
3. Weight distribution on a PCBA is also a factor. If a heavy faceplate or heatsink is mounted on one side of the PCBA the PCB will bow excessively if it is picked up along the opposite edge.
4. Near press fit connectors or large through-hole parts (connectors/sockets).

If larger (> 30mm) BGAs are located in higher risk areas it may be necessary to increase PCB thickness (section 10.1b), add mechanical stiffeners or underfill the BGAs.

DFM Impact:
BGA mounting location (i.e. corner or middle of the PCB), BGA (i.e. larger than 30mm) and weight distribution can increase the potential for pad cratering.

Figure 1: Square Shaped PCBs

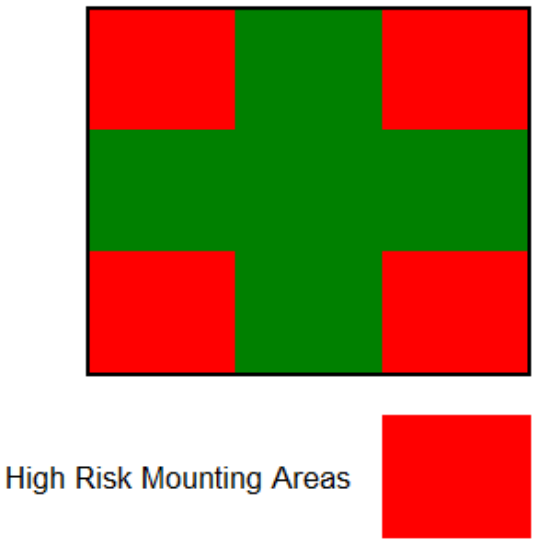

Figure 2: Rectangular Shaped PCBs