

HVDB w/ Surface Mount

- Contacted the vendor Axiom Manufacturing who produced PDDP HVDB
- Advantage of SMT
 - No solder balls protruding toward the profiles and the cryostat wall side
 - Cost effective (25% - 50% reduction) and time savings (~factor 4 or higher compare to manual) if components are provide on machine feedable tapes
- Potential disadvantage
 - The difference in the thermal contraction rate between the PCB and large components, like our resistors, could cause the solder contact to rip
 - NASA may have some studies for this
 - We could imagine doing some R&D on this
 - Cost and time savings are not apparent if each component has to be tested and selected by hand

So what next?

- Suggestion: given the potential cost and time savings, we could perform some further investigations
 - Can the surface mount solder joint stay put? What would be the failure rate, if they fail?
 - What did NASA do to and what would be the cost and time to do this?
 - Can we select the components ourselves for quality control and have a contractor to mount them on SMT tape?
 - Can a vendor use SMT tapes of such large components, like the resistors and varistors effectively?
 - What would be the failure rates for mounting the components?