

Test methodology for the impacts of high hydrostatic pressure on electronic components



Purpose and aim

Development of Pressure Tolerant Electronic, PTE, for deep sea usage requires many considerations from selection of components to qualification of the final product.

Many of the shelf electronic components still work, but some components like resonators or other clock-sources for microcontroller are vulnerable to high pressure due to their internal cavity. This can cause mechanical deformation or damage to the component, which can contribute to instant failure or long-term reliability problems.

The aim is to define and evaluate test methodology for verifications of electronic components for high hydrostatic pressure usage.

Results and important findings

Components, intrinsic or soldered on PCB, have been tested at elevated pressure and inspected for mechanical failure.

Electrical measurements have been performed to monitor for eventual deviation or failure.



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