

## Testing Battery Holders

*ANSI-, UL-, and ECIA-based Tests Help to Ensure Quality Battery Holders*

For testing new battery holder designs, MPD has made minimum and maximum sized battery replicas based on [ANSI](#) specifications. The sizes of different brands of batteries vary within the tolerances set in the specifications, so in order to test for compatibility with all brands of batteries the most extreme possible sizes must be tested. Battery holders designed without this in mind can fail to properly maintain connections with and properly hold batteries of some brands. The following diagram shows just how much the sizes of batteries can vary:



[UL](#) 2069 dictates that 50 insertion-extractions of the battery from the holder are followed by contact retention, temperature conditioning, vibration, and jarring tests. EIA-540J000, now provided by the [ECIA](#), gives another standard for battery holder testing, and it covers contact resistance, solderability and resistances to vibration, shock, temperature and humidity. The major difference between the UL and ECIA tests is that electrical continuity is continually monitored during vibrations and mechanical shocks in ECIA testing. Essentially, UL testing is only concerned with the battery physically remaining in the holder, while ECIA testing is also concerned with the battery maintaining proper connectivity. The ECIA furthermore sets different requirements for cylindrical battery holders and coin cell holders, respectively listed under EIA-540J0AA and EIA-540J0AB.

Although these tests form a comprehensive base, MPD is always looking to go beyond the standards with our designs. As such, many of our battery holders far exceed these minimal tests. It should also be kept in mind that these standard tests do not guarantee a battery holder for all situations, and that testing should always be geared towards a specific application whenever possible. For most of our parts, the test results can be found right on our datasheets, and we can always provide additional information upon request.