Neutrinos, one of the most abundant particles in the universe, have the power to unlock new physics beyond the standard model. The Large Enriched Germanium Experiment for Neutrinoless double-beta Decay (LEGEND) is a phased, international experiment designed to search for a theorized process called Double Beta Neutrinoless Decay ($0\nu\beta\beta$), which could provide important insights into the matter-antimatter asymmetry of our modern universe. With a discovery sensitivity goal of a half life greater than 10^{27} years for the first phase (LEGEND-200), our primary objective is to refine the techniques to reduce the background radiation levels by identifying multi-site events and events that occur near detector surfaces. All detector events are recorded as pulses, the shapes of which can be analyzed using Pulse Shape Discrimination (PSD) techniques to distinguish background from signal. The work presented in this poster looks at the behavior of certain PSD techniques over two detectors and over different voltages. Observing PSD performance will contribute to the optimization of these techniques for the next phase of LEGEND in the hunt for $0\nu\beta\beta$.