

Since the pouch cell has no strong metal casing, by themselves they are over 20% lighter than equivalent cylindrical cells. The advantages of Li-ion polymer over the lithium-ion design include potentially lower cost of manufacturing, adaptability to a wide variety of packaging shapes and reliability. Its main features and highlights are as follows:

1. **High Energy Density:** the weight of a Lipo battery is approximately one half compared to a nickel-cadmium or nickel-metal hydride battery of similar capacity. Moreover, the volume of the Lipo battery is 40% to 50% smaller than that of a nickel-cadmium and 20% to 30% smaller than that of a nickel-metal hydride battery.
2. **Higher Cost-to-Energy Ratio:** in comparison to all other kinds of rechargeable battery categories, the capacity and density of Lipo battery is generally higher than the same category liquid type lithium battery.
3. **High Discharge Rate:** Honcell provides Lipo cells and packs from 0.2C to 45C highly discharge rate batteries for vast applications where need power.
4. **Long Cycle Life:** under normal operating conditions, the Lipo battery still remains 60%-80% of the original capacity after 500 charge/discharge cycles.
5. **No Memory Effect and Reconditioning Need:** Lipo battery is free from the so-called memory effect, a phenomenon seen in nickel-cadmium in which the apparent battery capacity decreases when shallow charge and discharge cycles are repeated.
6. **Highly Flexible Dimension and Low Profile:** T x W x L (T: thickness W: width L: length) from 1mm to 12mm thick, 10-90mm wide, and 13-180mm long. Batteries resembling the profile of a quarter credit card are feasible.
7. **Flexible Form Factor:** cells are not bound by standard cell formats. With high volume, any reasonable size can be produced economically.
8. **High Voltage:** a single Lipo cell has a voltage of a mean value 3.7V, which is equal to either three nickel-cadmium or nickel-metal hydride cells connected in series.
9. **Wide Capacity Range:** single cell from 35mAh to 10Ah in only a 0.12mm thick aluminum laminate film outer covering.
10. **Light Weighted:** The use of aluminum laminate film for packaging provides light-weight advantage in comparison with other rechargeable categories.
11. **Small Impedance:** equal to or more than 25mΩ
12. **Wide Range Operating Temperature Conditions:** from -20°C to +80°C
13. **Improved Safety Performance:** as the aluminum laminate film outer package is different from the meta shell of liquid lithium ion battery, and once safety problems arise, there is no explosion but only expansion.
14. **Pollution-free:** Lipo battery does not contain any polluting substances such as cadmium, lead, mercury, etc.
15. **Non-metal Lithium:** Lipo battery does not employ any lithium metal. It is not governed by aircraft transportation rules relating to carrying lithium batteries in passenger airplanes.
16. **Fast Charge Capacity:** LiPo batteries must be charged carefully. The basic procedure is to begin at constant current until each cell reaches 4.2 V. The charger must then switch to a constant voltage mode, and the charging current will gradually be reduced as the charger holds the cell voltage at 4.2 V. This continues until the charge current has dropped to a small fraction of the initial charge rate, at which point the battery is considered fully charged.
17. **Battery Protection Circuit Module (PCM) Available:** Capable to modify with protection circuit to ensure excellent safety level.
18. **Battery Pack Assembly Available:** Whatsoever in an hard case envelope or PCM, fly leads, and/or with the genuine wire connector in either series or parallel strings connection.