

ABSTRACT

CHARGER DESIGN FOR LITHIUM POLYMER SMART PHONE BATTERY WITH A CAPACITY OF 4A AT 3.7V

In this digital era, Lithium-type batteries are needed to be widely used on electronic devices. In order to accommodate the needs of this digitalized world, the electronic devices must be supported by long-life battery in the other word is large capacity battery. That large capacity battery would need a charging system that capable to re-charge the battery in a short amount of time. In order to do that, a charger that can provide high voltage and high current are necessary, with note the voltage and current level must comply with the maximum of the battery power level to avoid any battery damage such as explosion.

This charger is designed for lithium polymer type battery which has minimum voltage 3.7V as it is in empty condition and 4.3 as it is in full condition. When the voltage is detected at 3.7V the current is flowing at 4A, and when the battery voltage is 4.3V then the current flowing is very small or in other words no current is flowing. Voltage and current settings are performed by any regulator that is capable of passing high currents.

This charger design is able to accelerate charging time of lithium polymer battery by halves in compare to the ordinary charger which is 4 hours in average to around 114 minutes.. The charger is capable to deliver maximum current for battery with the capacity of 4000mAh. The result is a fast and secure large capacity battery charging system without any damage due to over-voltages and currents.

Keywords : *Charger, Quick Charge, Regulator, High Current*