

Battery management system

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IncubSence

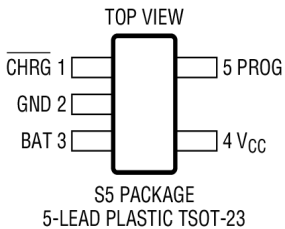
Battery management circuit demonstration

BOM

Sr No.	Component	Description	Quantity	Price	Order Quantity	100Pcs Price
1	Battery management IC	Battery Management Monolithic Li-Ion Charger - low current	1	₹ 230.94	1	₹ 144.66
2	USB Type C Connectors	USB Connectors USB Type C Recep R/A TOPMNT GLD Flash	1	₹ 125.20	1	₹ 100.55
3	Thick Film Resistors - SMD	Thick Film Resistors - SMD 4.7K OHM 5%	1	₹ 6.49	1	₹ 0.13
4	Thin Film Resistors - SMD	Thick Film Resistors - SMD 330 OHM 1%	1	₹ 6.49	1	₹ 0.195
5	Multilayer Ceramic Capacitors MLCC - SMD/SMT	Multilayer Ceramic Capacitors MLCC - SMD/SMT 25volts 1uF X7R 10%	1	₹ 15.57	1	₹ 4.22
6	Standard LEDs - SMD	Standard LEDs - SMD Orange Clear 605nm	1	₹ 16.22	1	₹ 3.96
7	Coin Cell Battery Holders	Coin Cell Battery Holders Bat Hld CR2032/2025 Through-hole Mount	1	₹ 18.16	1	₹ 15.11
			Total : ₹ 419.07		Total : ₹ 268.825	

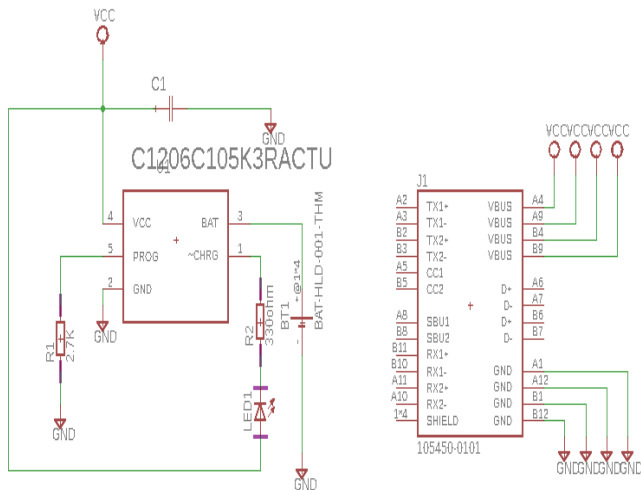
Battery management IC

LTC4054



$T_{JMAX} = 125^{\circ}\text{C}$, ($\theta_{JA} = 80^{\circ}\text{C/W}$ TO
150 $^{\circ}\text{C/W}$ DEPENDING ON PC BOARD LAYOUT)
(NOTE 3)

Schematic



Battery life calculation

2032 Rechargeable coin-cell

Voltage: 3.3V

Capacity: 87mAh

For 60% fast charging,

$$I = (V/R) * 1000$$

$$R = (V/I) * 1000$$

$$= (1/\underline{212\text{mA}}) * 1000$$

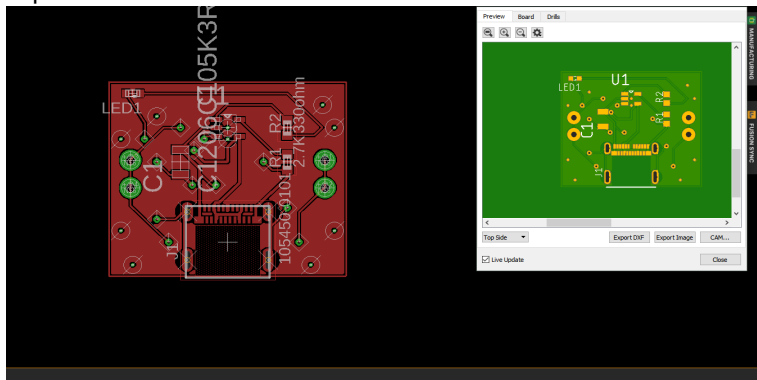
$$= (1000/0.212)$$

$$= 4716.98\text{ohm}$$

$$R = 4.7\text{Kohm}$$

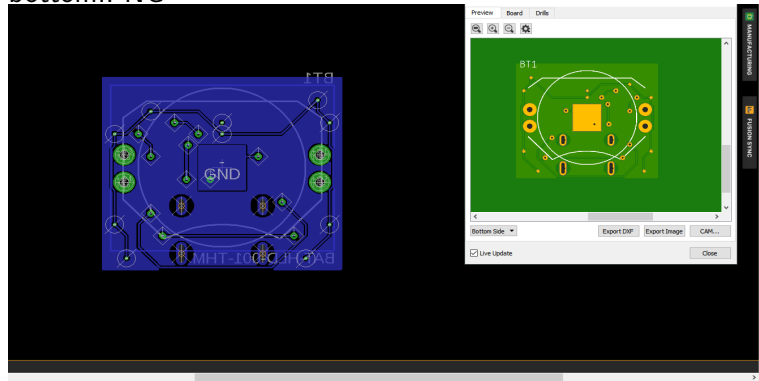
PCB top layer

top.PNG



PCB bottom layer

bottom.PNG



**THANK
YOU!**