

GLF73810

Ultra-Efficient IQSmart™ Battery Protection Switch

DESCRIPTION

The GLF73810 is an IQSmart™ ultra-efficient, full battery protection switch with the accurate over charging voltage, over discharging voltage, and short circuit protections for lithium battery safety.

The over charge and discharge voltage protection keep a rechargeable battery to work within the safe operating condition. When the battery is charged over the over voltage detection level, the GLF73810 opens in the preset delay time. As the battery voltage decreases to the over discharge detection voltage level, the GLF73810 is turned off immediately to cut off the battery power rail, consuming an ultra-low leakage current (ISD) to save the battery. In addition, when the load current reaches the ISC short circuit protection level, the GLF73810 is turned off and maintain the off state to avoid any serious damage to system. The short circuit delay time avoid any false trigger to open the switch.

GLF73810 FEATURES

- V_{OC} , Over Charge Detection: $4.36 V_{BAT}$
 - Release Hysteresis, $V_{OC_Hys} = 130 \text{ mV}$
 - Detection Delay, $t_{OC} = 500 \text{ ms}$
- V_{OD} , Over Discharge Detection: $2.88 V_{BAT}$
- Load Short Circuit Protection with Delay Time to avoid a false trigger
- 1.5 A Continuous Charging Current Capability from VOUT to VBAT Pin
- 0.5 V Battery Minimum Voltage for Charging Main Switch is Activated by Applying V_{ON} the VOUT Pin from Charger
- Low R_{ON} : $37 \text{ m}\Omega$ Typ. @ $3.6 V_{BAT}$
- Operation Current, $I_Q = 0.8 \text{ uA}$ Typ @ $4.2 V_{BAT}$
- Shutdown Current, $I_{SD} = 350 \text{ nA}$ Typ @ $V_{BAT} < V_{OD}$
- Latch-off at Short Circuit Protection. Power recycle to turn on switch again
- Auto Retry after Short Circuit Off
 - $t_{RS} = 500\text{ms}$, Try to turn on switch in t_{RS}
 - Retry Times = 8 times
- 0.97 mm x 0.97 mm x 0.55 mm Chip Scale Package 4 Bumps, 0.5 mm Pitch

PRODUCT TABLE

| Eval Board Ordering Info | Part Number | Top Mark | R_{ON} (Typ.) @ 3.6Vin | Threshold V_{OC} | Threshold V_{OD} |
|--------------------------|-------------|----------|--------------------------|--------------------|--------------------|
| EV011-GLF73810 | GLF73810 | TBD | 37mΩ | 4.36V | 2.88V |