

DESCRIPTION

The GLF73910 / GLF73911 is an I_QSmart™ ultra-efficient, full battery protection switch with an accurate over charge voltage, over discharge voltage, and short circuit protection for lithium-ion/Polymer battery safety.

The over charge and discharge voltage protections keep a rechargeable battery working within the desired safe operating condition. When the battery is charged past the over voltage detection level, the GLF73910 / GLF73911 switch opens in a preset delay time.

As the battery voltage decreases below the over discharge detection voltage level, the GLF73910 / GLF73911 switch is turned off immediately to cut off the battery power rail, consuming an ultra-low leakage current (I_{SD}) to save the battery. In addition, when the load current reaches the I_{SC} short circuit protection level, the GLF73910 / GLF73911 switch is turned off and will maintain the off state to avoid any serious damage to system. The short circuit delay time avoids any false trigger which might open the switch.

When a charged battery cell is connected, the GLF73910 / GLF73911 remains in the off state and consumes an ultra-low leakage current (I_{SD}) until the V_{ON} voltage is applied to VOUT pin. Note that the GLF73910 / GLF73911 is activated only by a V_{ON} voltage from a charger output.

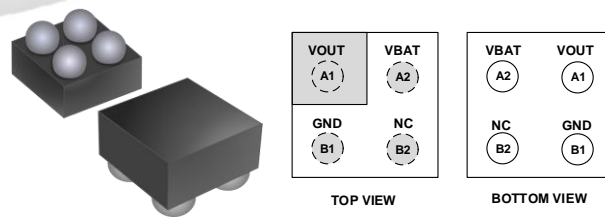
FEATURES

- Over Charge Detection Voltage, V_{OC}
 - 4.35 V_{BAT} : GLF73910-AD01, GLF73910-AD01C
GLF73911-AD01
 - 4.50 V_{BAT} : GLF73910-BD01
 - Monitor V_{BAT} to release Voc : GLF73910
 - Monitor V_{OUT} to release Voc : GLF73911
- Over Discharge Detection Voltage, V_{OD} : 2.80 V_{BAT}
- Load Short Circuit Protection with Delay Time to avoid a false trigger
- Activated by Applying V_{ON} to the VOUT Pin from Charger
- 1.5 A Continuous Charging Current Capability from VOUT to V_{BAT} Pin
- Low R_{ON} : 36 mΩ Typ. @ 3.6 V_{BAT}
- Quiescent Current, I_Q = 720 nA Typ @ 3.6 V_{BAT}
- Shutdown Current, I_{SD}
 - GLF73910: 70 nA Typ @ V_{BAT} < V_{OD}
 - GLF73911: 35 nA Typ @ V_{BAT} < V_{OD}
- Latch-off at Over Discharge Detection and Short Circuit Protection. Apply V_{ON} to VOUT pin to turn on again
- 0 V Battery Charging: GLF73910-AD01C
- 0.4 V Minimum Battery Voltage for Charging
- Reverse Polarity Connection Protection
- Patent Pending Circuit Architecture
- HBM: 8 kV, CDM: 2 kV
- 0.97 mm x 0.97 mm x 0.55 mm Chip Scale Package
4 Bumps, 0.5 mm Pitch

APPLICATIONS

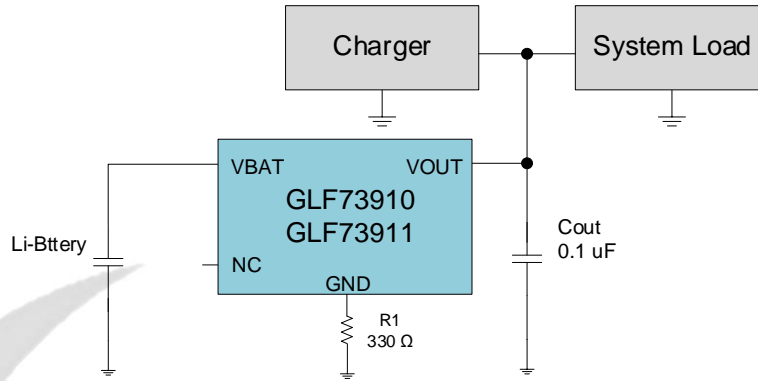
- BLE Wireless Earphone
- Wearables / IoT Devices

PACKAGE



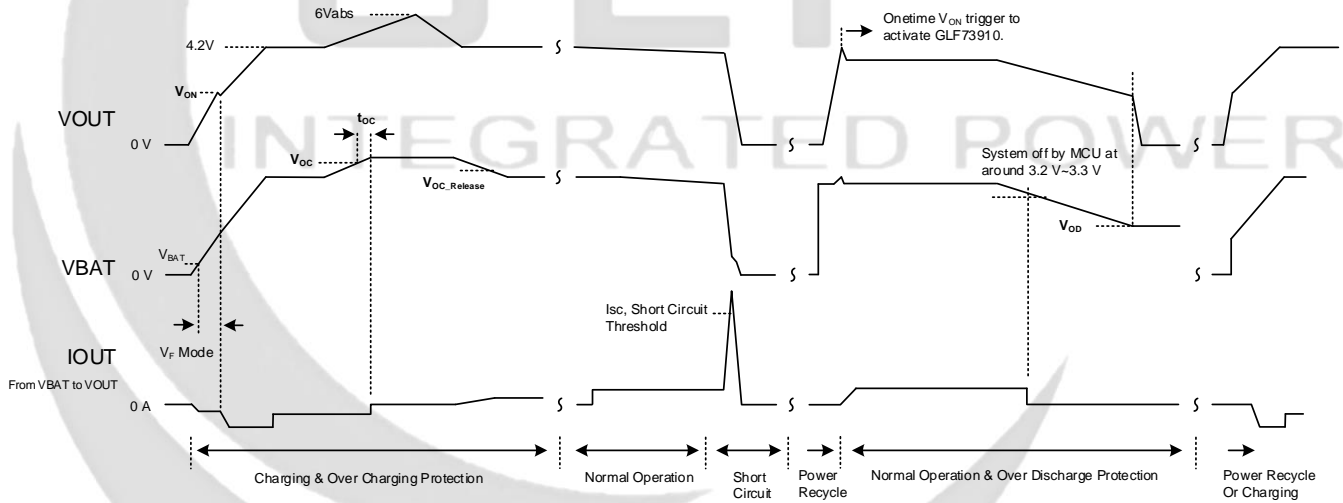
0.97 mm x 0.97 mm x 0.55 mm WLCSP

APPLICATION DIAGRAM



Note: The GLF73910 is activated by applying the V_{ON} to the VOUT pin.

TIMING DIAGRAM



FUNCTIONAL BLOCK DIAGRAM

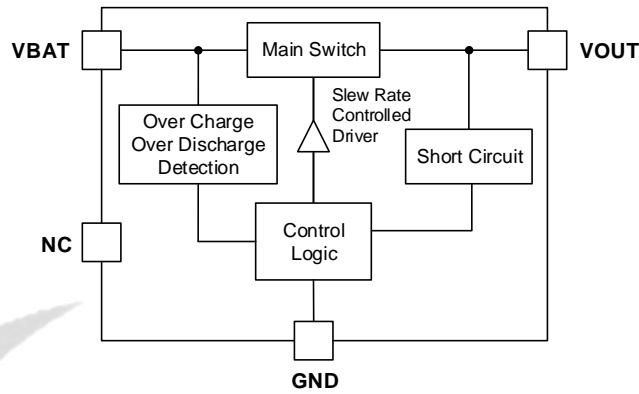
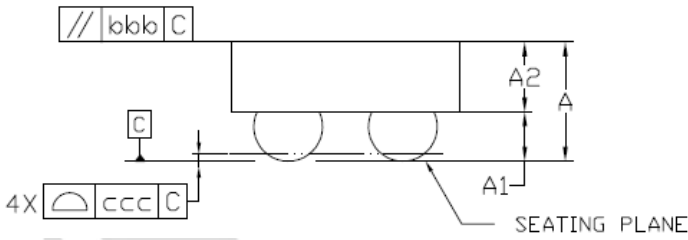
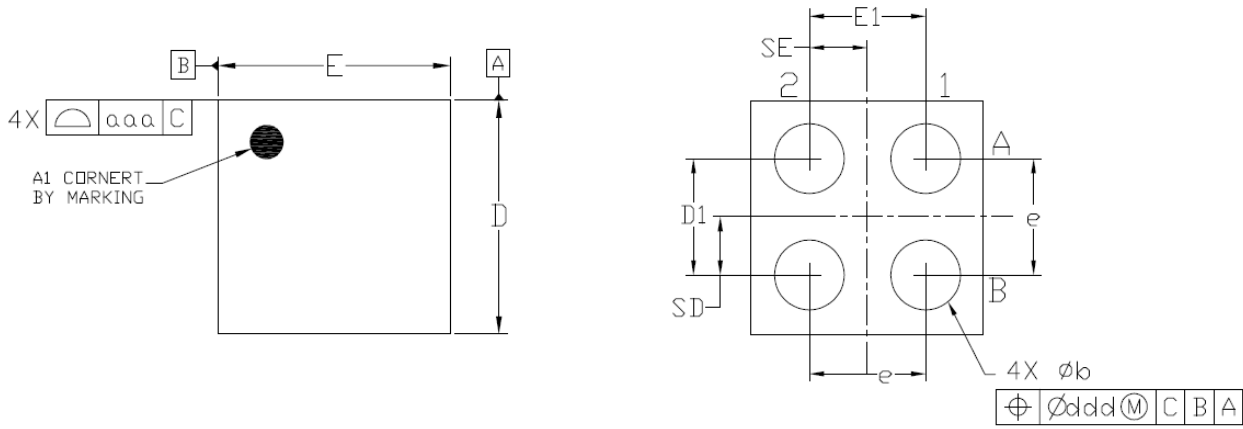


Figure 1. Functional Block Diagram

GLF
INTEGRATED POWER

PACKAGE OUTLINE



Dimensional Ref.			
REF.	Min.	Nom.	Max.
A	0.500	0.550	0.600
A1	0.225	0.250	0.275
A2	0.275	0.300	0.325
D	0.960	0.970	0.985
E	0.960	0.970	0.985
D1	0.450	0.500	0.550
E1	0.450	0.500	0.550
b	0.260	0.310	0.360
e	0.500 BSC		
SD	0.250 BSC		
SE	0.250 BSC		
Tol. of Form&Position			
aaa	0.10		
bbb	0.10		
ccc	0.05		
ddd	0.05		

Notes

1. ALL DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES).
2. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M-1994.