GLF73710
Nano Current Consumed I$_Q$Smart™ Battery Protection Switch

DESCRIPTION

The GLF73710 is an I$_Q$Smart™ 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 discharge voltage protections keep a rechargeable battery working within the desired safe operating condition. When the battery voltage decreases below the over discharge detection voltage level, the GLF73710 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 GLF73710 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 with the GLF73710, the GLF73710 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 GLF73710 is activated only by a V$_{ON}$ voltage from a charger output.

FEATURES

- V$_{OD}$, Over Discharge Detection: 2.88 V$_{BAT}$
- Load Short Circuit Protection with Delay Time to avoid a false trigger
- GLF73710 is Activated by Applying V$_{ON}$ to the VOUT Pin from Charger
- 1.5 A Continuous Charging Current Capability from VOUT to VBAT Pin
- Low R$_{ON}$: 31 mΩ Typ. @ 3.6 V$_{BAT}$
- Quiescent Current, I$_Q$ = 700 nA Typ @ 4.2 V$_{BAT}$
- Shutdown Current, I$_{SD}$ = 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 GLF73710 switch again
- 0.5 V Battery Minimum Voltage for Charging
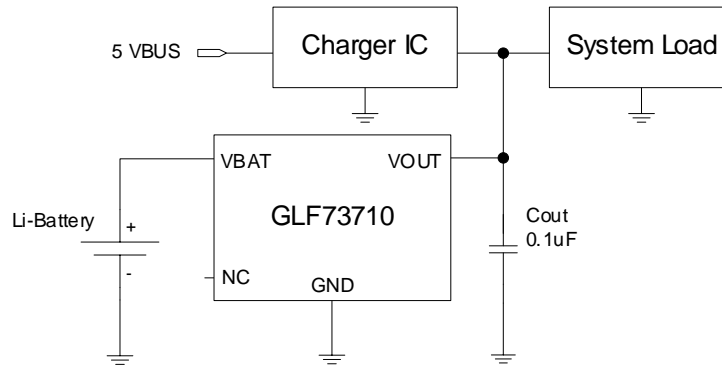- 0.97 mm x 0.97 mm x 0.55 mm Chip Scale Package   4 Bumps, 0.5 mm Pitch

APPLICATIONS

- BLE Wireless Earphone
- Wearables / IoT Devices
- Hearing Aid

PACKAGE

Top View   Bottom View
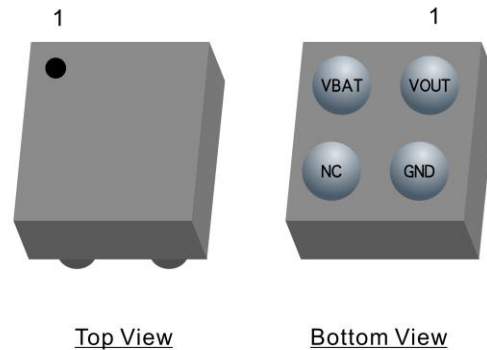
0.97 mm x 0.97 mm x 0.55 mm WLCSP

APPLICATION DIAGRAM

Note: The GLF73710 is activated by applying the V$_{ON}$ to the VOUT pin.
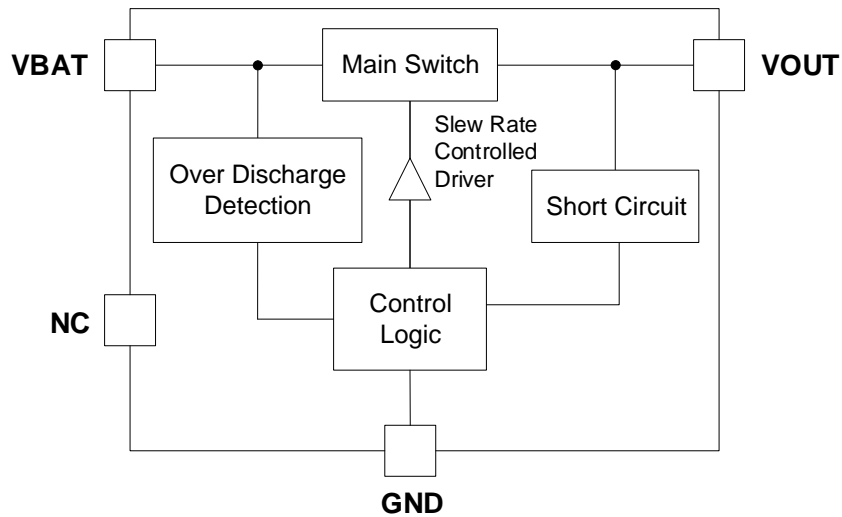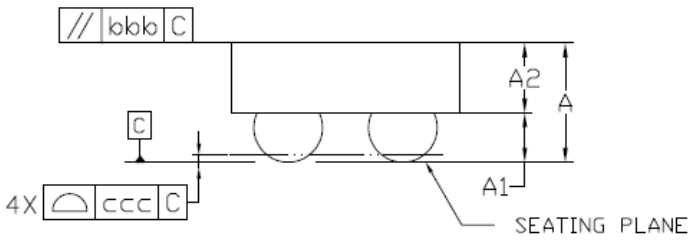
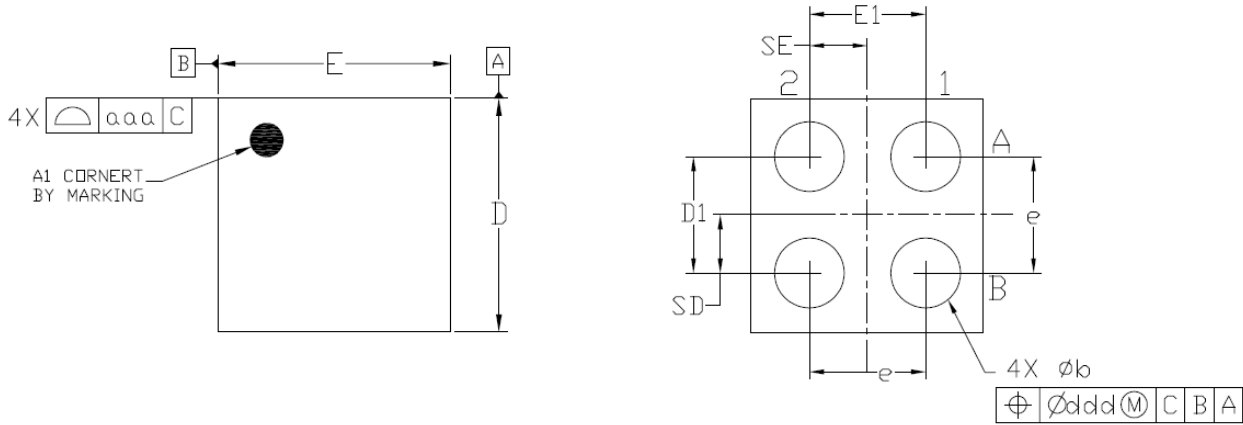## FUNCTIONAL BLOCK DIAGRAM

Figure 1. Functional Block Diagram

PACKAGE OUTLINE

Notes

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

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		