

DESCRIPTION

The GLF73611 is a family of I_QSmart™ ultra-efficient ICs, with full battery protections which are accurate over charge/discharge voltage protection, over charge/discharge current protection and short circuit protection.

The over charge and discharge voltage protections are capable of keeping a rechargeable battery working within the desired safe operating condition. When the battery is charged above the over voltage detection level, the GLF73611 charging switches off in a preset delay time. As the battery voltage decreases lower than the over discharge detection voltage, the GLF73611 discharging switch is turned off immediately. In the off state, GLF73611 consumes an ultra-low leakage current (I_{SD}) to save the battery power. In addition, when the load current is higher than the I_{SC} short circuit protection current level, the GLF73611 is turned off and will maintain the off state to avoid any serious damage to system. The short circuit delay time can avoid any false trigger which might turn on the switch.

The GLF73611 provides a shipping mode to prevent smart devices which has a non-removable battery from discharging during the shipping period. When a charged battery cell is connected to the GLF73611, and GLF73611 remains in the off state, the smart devices consume an ultra-low leakage current (I_{SD}). Note that the only way to active the GLF73611 is applying a charger output V_{ON} voltage to VOUT pin.

The GLF73611 also has 0 V battery charge inhibition function. When the battery voltage is lower than 0 V battery charging inhibited Voltage (V_{TC}), the battery is not allowed to charge.

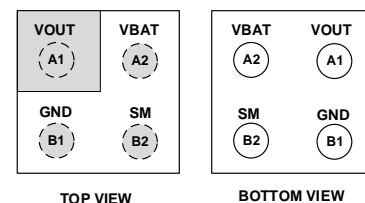
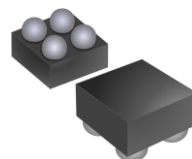
FEATURES

- Over Charge Detection Voltage, V_{OC}
 - GLF73611A detects V_{OUT} to release V_{OC}
 - GLF73611B detects V_{BAT} to release V_{OC}
 - V_{OC} high accuracy: $\pm 0.6\%$
- Over Discharge Detection, V_{OD}
 - GLF73611A detects $2.90 V_{OUT}$
 - GLF73611B detects $2.80 V_{BAT}$
- Over Charge Current Detection, I_{OC} : 330 mA
- Over Discharge Current Detection, I_{OD} : 215 mA
- Short Circuit Protection
- Activated by Applying V_{ON} to the VOUT Pin from Charger
- Shipping Mode Implementation
- Low R_{ON} : 60 m Ω Typ. at 3.6 V_{BAT}
- Low Quiescent Current, I_Q : 1.6 μA Typ at 3.6 V_{BAT}
- Shutdown Current:
 - $I_{SD} = 15$ nA Typ. at $V_{BAT} < V_{OD}$
 - $I_{SD} = 21$ nA Typ. at $V_{BAT} = 3.6$ V, Shipping Mode
 - $I_{SD} = 26$ nA Typ. at $V_{BAT} = 4.2$ V, Shipping Mode
- Latch-off at Over Discharge Detection and Short Circuit Protection.
- 0 V Battery Charge Inhibition
- Patented Circuit Architecture

APPLICATIONS

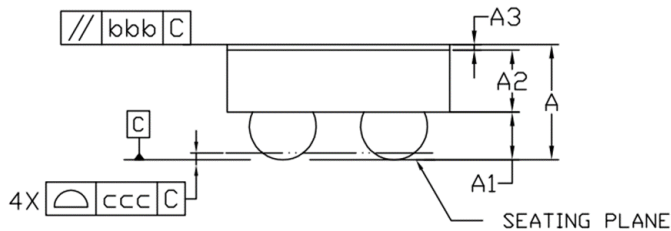
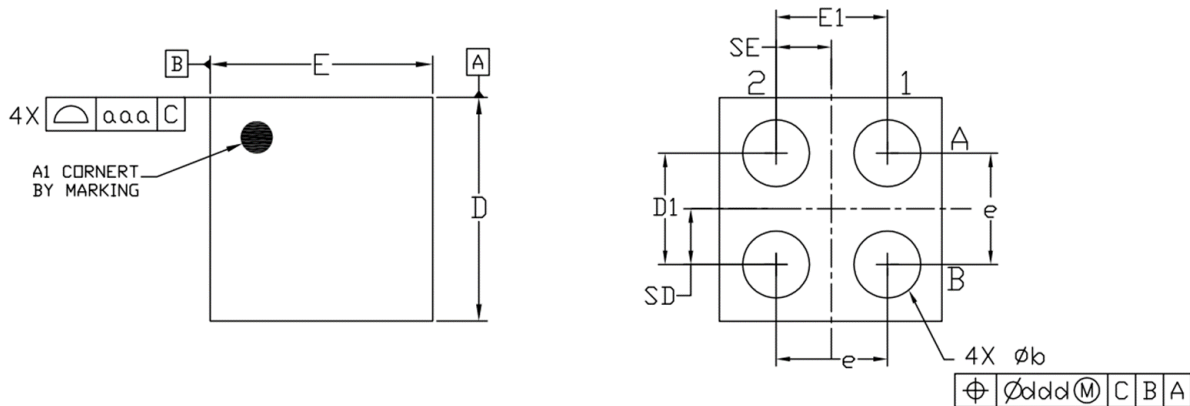
- BLE Wireless Earphone
- Hearing Aid
- Wearables and Smart IoT Devices

PACKAGE

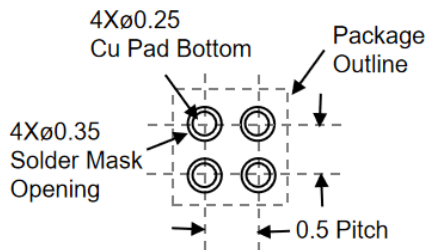


0.97 mm x 0.97 mm x 0.55 mm WLCSP

PACKAGE OUTLINE



Recommended Footprint



Notes

1. ALL DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES)
2. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M-1994.
3. A3: BACKSIDE LAMINATION

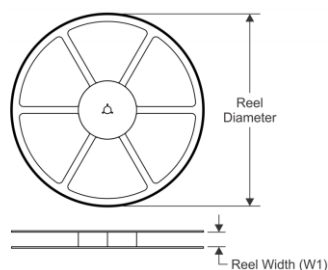
Dimensional Ref.			
REF.	Min.	Nom.	Max.
A	0.500	0.550	0.600
A1	0.225	0.250	0.275
A2	0.255	0.275	0.300
A3	0.020	0.025	0.030
D	0.960	0.970	0.985
E	0.960	0.970	0.985
D1	0.450	0.500	0.550
E1	0.450	0.500	0.550
b	0.260	0.310	0.360
e	0.500 BSC		
SD	0.250 BSC		
SE	0.250 BSC		
Tol. of Form&Position			
aaa	0.10		
bbb	0.10		
ccc	0.05		
ddd	0.05		

PACKAGING INFORMATION

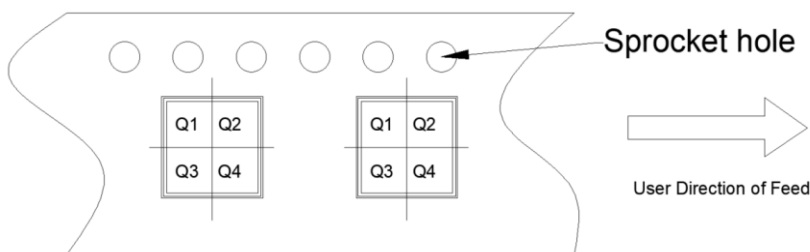
Part Number	Package	Pins	Pitch	Top Mark	Moisture Sensitivity Level	Environmental Information
GLF73611A-S2G7	0.97 mm x 0.97 mm x 0.55 mm WLCSP	4	0.5mm	EI	MSL1	ROHS+HF
GLF73611B-S2G7				FI		

TAPE AND REEL INFORMATION

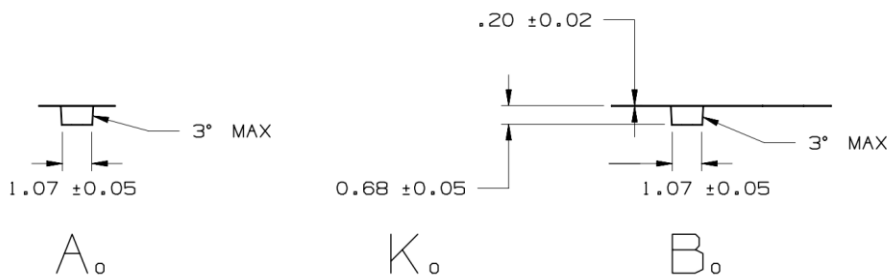
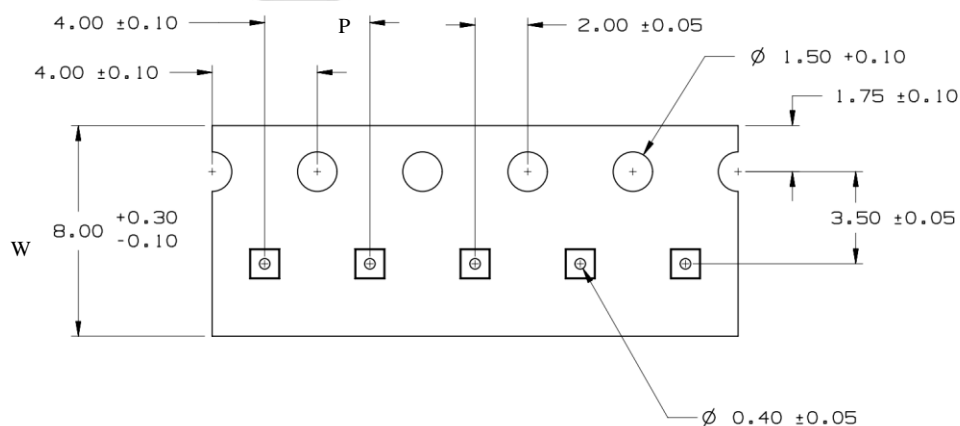
REEL DIMENSIONS



QUADRANT ASSIGNMENTS PIN 1 ORIENTATION TAPE



TAPE DIMENSIONS



Device	Package	Pins	SPQ	Reel Diameter (mm)	Reel Width W1	A0	B0	K0	P	W	Pin1
GLF73611A-S2G7	WLCSP	4	3000	180	9	1.07	1.07	0.68	4	8	Q1
GLF73611B-S2G7	WLCSP	4	3000	180	9	1.07	1.07	0.68	4	8	Q1

Remark:

A0: Dimension designed to accommodate the component width

B0: Dimension designed to accommodate the component length

C0: Dimension designed to accommodate the component thickness

W: Overall width of the carrier tape

P: Pitch between successive cavity centers