

## DESCRIPTION

The GLF71310, GLF71312, GLF71313 are an ultra-efficiency, 2 A rated Load Switches with integrated slew rate control. The best in class efficiency makes it an ideal choice for use in IoT, mobile, and wearable electronics.

The GLF71310, GLF71312, GLF71313 feature ultra-efficient I<sub>Q</sub>Smart™ technology that supports the lowest quiescent current (I<sub>Q</sub>) and shutdown current (I<sub>SD</sub>) in the industry. Low I<sub>Q</sub> and I<sub>SD</sub> solutions help designers to reduce parasitic leakage current, improve system efficiency, and increase battery lifetime.

The GLF71310, GLF71312, GLF71313 integrated slew rate control can also enhance system reliability by mitigating bus voltage swings during switching events. Where uncontrolled switches can generate high inrush currents that result in voltage droop and/or bus reset events, the GLF71310, GLF71312, GLF71313 slew rate control specifically limit inrush currents during turn-on to minimize voltage droop.

GLF71310, GLF71312, GLF71313 Load Switch devices support an industry leading wide input voltage range and helps to improve operating life and system robustness. Furthermore, one device can be used in multiple voltage rail applications which helps to simplify inventory management and reduce operating cost.

GLF71310, GLF71312, GLF71313 Load Switch device are small utilizing a chip scale package with 4 bumps in a 0.97 mm x 0.97 mm x 0.55 mm die size and a 0.5 mm bump pitch.

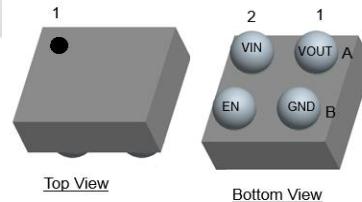
## APPLICATIONS

- Wearables
- Data Storage, SSD
- Mobile Devices
- Low Power Subsystems

## FEATURES

- Ultra-Low I<sub>Q</sub>:  
7 nA Typ at 5.5 V<sub>IN</sub> on GLF71310  
520 nA Typ at 5.5 V<sub>IN</sub> on GLF71312, GLF71313
- Ultra-Low I<sub>SD</sub>: 28 nA Typ at 5.5 V<sub>IN</sub>
- Low R<sub>ON</sub> : 31 mΩ Typ at 5.5 V<sub>IN</sub>
- I<sub>OUT</sub> Max: 2 A
- Wide Input Range: 1.1 V to 5.5 V  
6 V<sub>abs</sub> max
- Controlled Rise Time: 335 µs at 3.3 V<sub>IN</sub>
- Internal EN Pull-Down Resistor on GLF71310
- Internal EN Pull-Up Resistor on GLF71312 and GLF71313
- Integrated Output Discharge Switch: GLF71313
- Ultra-Small: 0.97 mm x 0.97 mm

## PACKAGE



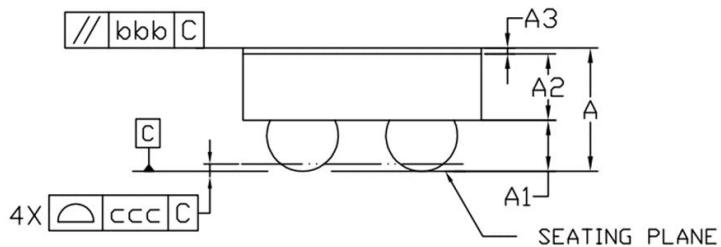
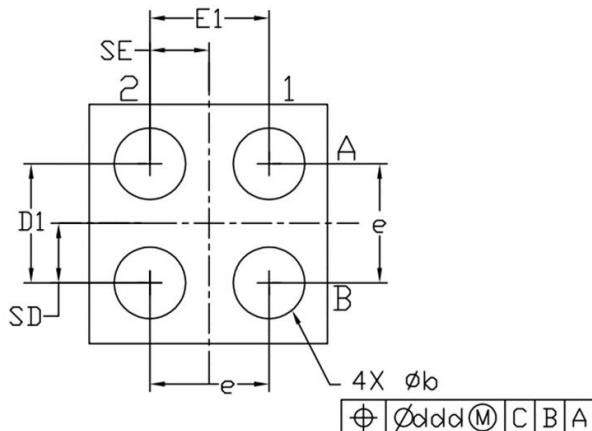
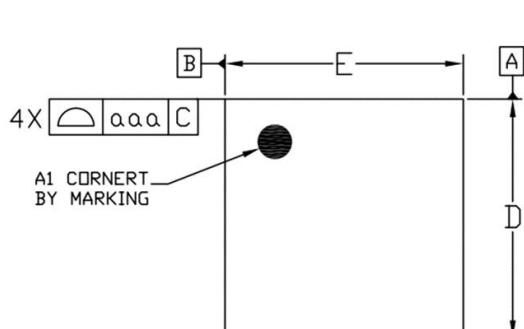
0.97 mm x 0.97 mm x 0.55 mm WLCSP

## ALTERNATE DEVICE OPTIONS

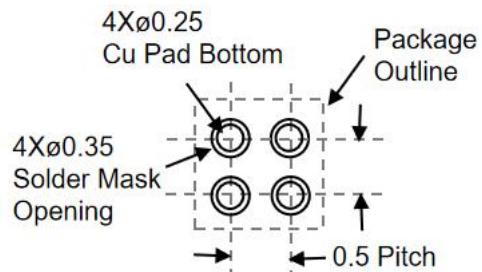
Part Number	Top Mark	R <sub>ON</sub> (Typ) at 5.5 V	Output Discharge	EN Activity	Availability
GLF71310	BA	31 mΩ	No	High	Released
GLF71312	BD	31 mΩ	No	Low	On Request
GLF71313	BE	31 mΩ	85 Ω	Low	Released

Note: Contact GLF representatives for more information on alternate devices' delivery and availability.

## PACKAGE OUTLINE



## Recommended Footprint



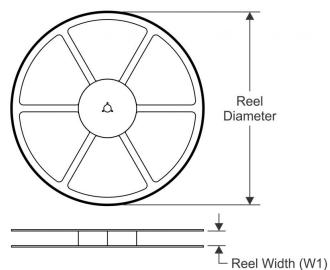
Dimensional Ref.			
REF.	Min.	Nom.	Max.
A	0.500	0.550	0.600
A1	0.225	0.250	0.275
A2	0.255	0.275	0.300
A3	0.020	0.025	0.030
D	0.960	0.970	0.985
E	0.960	0.970	0.985
D1	0.450	0.500	0.550
E1	0.450	0.500	0.550
b	0.260	0.310	0.360
e	0.500 BSC		
SD	0.250 BSC		
SE	0.250 BSC		
Tol. of Form&Position			
aaa	0.10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

## Notes

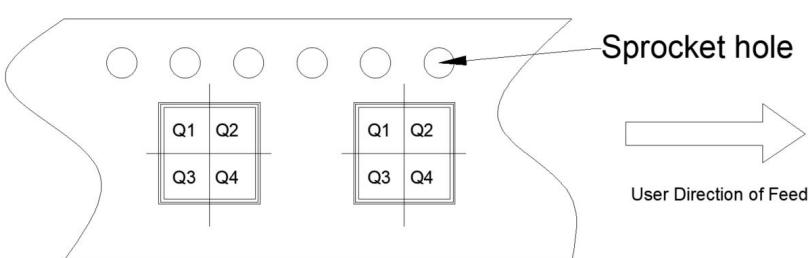
1. ALL DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGREES)
2. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M-1994.
3. A3: BACKSIDE LAMINATION

## TAPE AND REEL INFORMATION

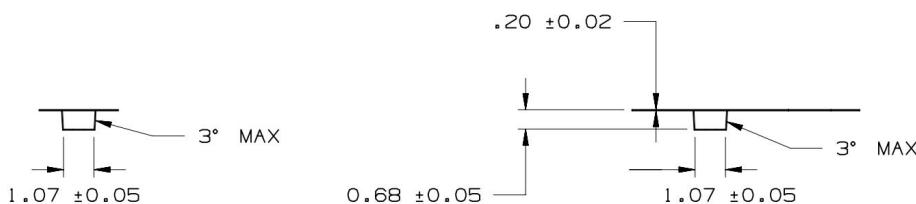
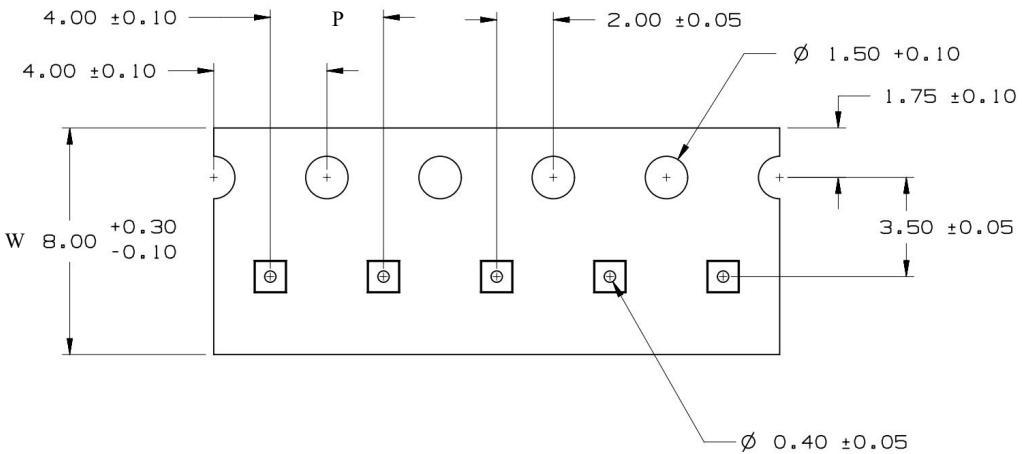
## REEL DIMENSIONS



## QUADRANT ASSIGNMENTS PIN 1 ORIENTATION TAPE



## TAPE DIMENSIONS

 $A_0$  $K_0$  $B_0$ 

Device	Package	Pins	SPQ	Reel Diameter (mm)	Reel Width W1	A0	B0	K0	P	W	Pin1
GLF71310	WLCSP	4	3000	180	9	1.07	1.07	0.68	4	8	Q1
GLF71312	WLCSP	4	3000	180	9	1.07	1.07	0.68	4	8	Q1
GLF71313	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