# GLF71320, GLF71321, GLF71322, GLF71323

## 4 A, Low $R_{ON}$ $I_Q$Smart™ Power Load Switch with Slew Rate Control

**Product Specification**

## DESCRIPTION

The GLF7132x is an ultra-efficiency, 4 A rated, integrated load switch with integrated slew rate control.

The GLF7132x features an ultra-efficient $I_Q$Smart™ technology that supports the lowest $R_{ON}$, quiescent current ($I_Q$) and shutdown current ($I_{SD}$) in the industry. Low $R_{ON}$ reduces conduction losses, while low $I_Q$ and $I_{SD}$ solutions help designers to reduce parasitic leakage current, improve system efficiency, and increase battery lifetime.

The GLF7132x integrated slew rate control greatly enhances 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 GLF7132x slew rate control specifically limits inrush current during turn-on to minimize voltage droop.

GLF7132x Load Switch device supports 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 reduces operating cost.

GLF7132x Load Switch device is small utilizing a chip scale package with 6 bumps in a 0.97 mm x 1.47 mm x 0.55 mm die size and a 0.5 mm pitch.

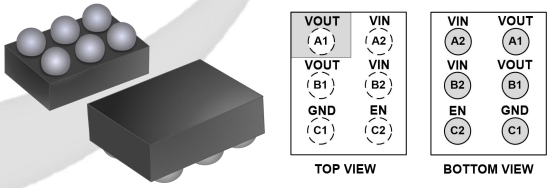
## FEATURES

- Low $R_{ON}$ : 15 mΩ Typ 5.5 $V_{IN}$
- Ultra-Low $I_Q$:
  3 nA Typ at 5.5 $V_{IN}$ GLFL71320, GLF71321
  570 nA Typ at 5.5 $V_{IN}$ GLFL71322, GLF71323
- Ultra-Low $I_{SD}$: 50 nA Typ at 5.5 $V_{IN}$
- $I_{OUT}$ Max: 4 A
- Wide Input Range: 1.1 V to 5.5 V
  6 Vabs max
- Controlled Rise Time: 400 µs at 3.3 $V_{IN}$
- Internal EN Pull-Down or Pull-Up Resistor
- Integrated Output Discharge Switch
  GLF71321 and GLF71323
- Wide Operating Temperature Range:
  -40 °C ~ 85 °C
- HBM: 6 kV, CDM: 2 kV
- Ultra-Small: 0.97 mm x 1.47 mm WLCSP

## APPLICATIONS

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

## PACKAGE

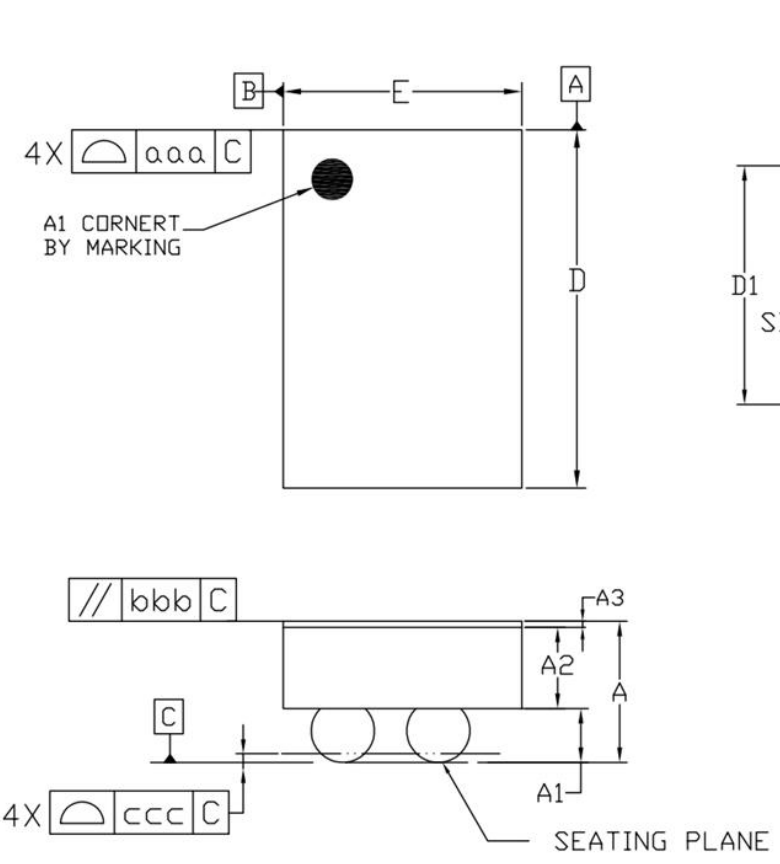



0.97 mm x 1.47 mm x 0.55 mm
0.5 mm pitch WLCSP

## ALTERNATE DEVICE OPTIONS

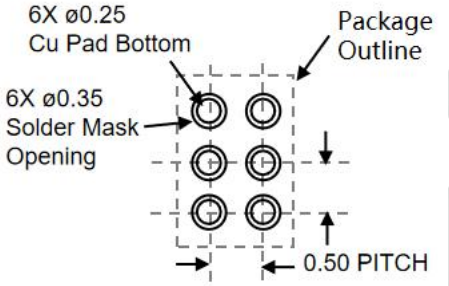
| Part Number | Top Mark | $R_{ON}$ (Typ) at 5.5 V | Output Discharge | EN Activity |
|---|---|---|---|---|
| GLF71320 | AA | 15 mΩ | NA | High |
| GLF71321 | BB | 15 mΩ | 80 Ω | High |
| GLF71322 | CC | 15 mΩ | NA | Low |
| GLF71323 | DD | 15 mΩ | 80 Ω | Low |

## PACKAGE OUTLINE




| Dimensional Ref. | | | |
|---|---|---|---|
| REF. | Min. | Nom. | Max. |
| A | 0.500 | 0.550 | 0.600 |
| A1 | 0.225 | 0.250 | 0.275 |
| A2 | 0.250 | 0.275 | 0.300 |
| A3 | 0.020 | 0.025 | 0.030 |
| D | 1.460 | 1.470 | 1.485 |
| E | 0.960 | 0.970 | 0.985 |
| D1 | 0.950 | 1.000 | 1.050 |
| E1 | 0.450 | 0.500 | 0.550 |
| b | 0.260 | 0.310 | 0.360 |
| e | 0.500 BSC | | |
| SD | 0.000 BSC | | |
| SE | 0.250 BSC | | |
| Tol. of Form&Position | | | |
| aaa | 0.10 | | |
| bbb | 0.10 | | |
| ccc | 0.05 | | |
| ddd | 0.05 | | |

**Recommended Footprint**

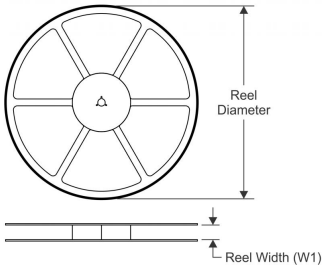



Notes

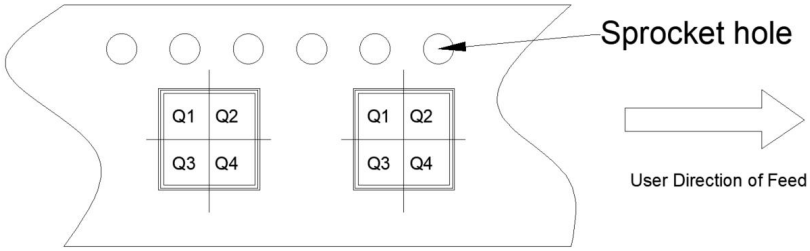
1. ALL DIMENSIONS ARE IN MILLIMETERS (ANGLES IN DEGRESS)
2. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M-1994.
3. A3: BACKSIDE LAMINATION

# TAPE AND REEL INFORMATION

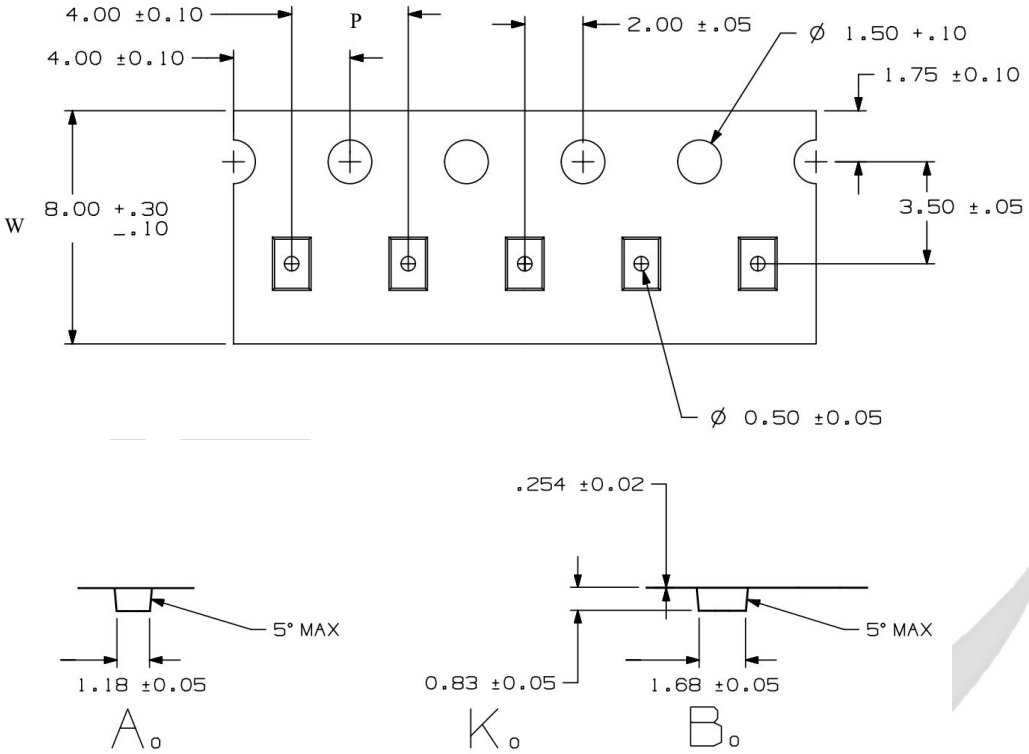
## REEL DIMENSIONS




## QUADRANT ASSIGNMENTS PIN 1 ORIENTATION TAPE




## TAPE DIMENSIONS







| Device | Package | Pins | SPQ | Reel Diameter (mm) | Reel Width W1 | A0 | B0 | K0 | P | W | Pin1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GLF71320 | WLCSP | 6 | 3000 | 180 | 9 | 1.18 | 1.68 | 0.83 | 4 | 8 | Q1 |
| GLF71321 | WLCSP | 6 | 3000 | 180 | 9 | 1.18 | 1.68 | 0.83 | 4 | 8 | Q1 |
| GLF71322 | WLCSP | 6 | 3000 | 180 | 9 | 1.18 | 1.68 | 0.83 | 4 | 8 | Q1 |
| GLF71323 | WLCSP | 6 | 3000 | 180 | 9 | 1.18 | 1.68 | 0.83 | 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