



# GLF76121, GLF76121S, GLF76121L

## Nano Current Consumed Integrated Load Switch with Reset Timer

### Product Specification

#### DESCRIPTION

The GLF76121, GLF76121S, and GLF76121L are an ultra-efficient  $I_{QSmart}^{TM}$  load switch with an integrated reset timer for wearables and IoT devices.

The /SRO pin offers a true reset function enabling the load switch to completely disconnect the load from the input battery after a reasonable long delay time. After the reset period, the main switch of the GLF76121, GLF76121S, and GLF76121L reconnect the output load to the input battery for normal operation. The GLF76121 /GLF76121S offers 6/2.95 second delay time before the 750 ms reset duration while the GLF76121L has 12 second delay time and then 750 ms reset time.

The ultra-low  $I_Q$  enables direct interface to lower voltage chipset without any external circuit and maintains lower power consumption. The OFF input pin allows the GLF76121, GLF76121S, and GLF76121L to achieve complete shutdown with total downstream standby current of 7 nA typical. With the switch placed between a battery and system, this switch can help to significantly extend system battery life in mobile devices during shipping or periods of extended off time.

The GLF76121, GLF76121S, and GLF76121L help to reduce power consumption with the best in class  $R_{ON}$  and a breakthrough on state  $I_Q$  of only 7nA typical when the switch is on.

The GLF76121, GLF76121S, and GLF76121L integrated 1 ms slew rate control can also enhance system reliability by mitigating bus voltage swings during switching events. Where uncontrolled switching can generate high inrush current that results in voltage droop and/or bus reset events, the GLF slew rate control specifically limits inrush current during turn-on to minimize voltage droop. The output discharge function makes output voltage off quickly during the reset period.

The GLF76121, GLF76121S, and GLF76121L are available in 0.97 mm x 1.47 mm x 0.55mm wafer level chip scale package (WLCSP).

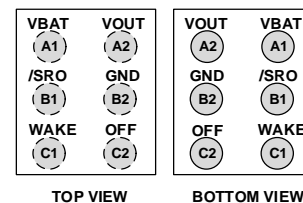
#### FEATURES

- Ultra-Low  $I_{SD}$ : 7 nA Typ @ 3.6 VBAT
- Ultra-Low  $I_Q$ : 7 nA Typ @ 3.6 VBAT
- Low  $R_{ON}$ : 34 m $\Omega$  Typ @ 3.6 VBAT
- $I_{OUT}$  Max : 2 A
- Supply Voltage Range: 2.5 V to 5.5 V  
6 Vabs max
- Reset Delay Time (/SRO Hold Time)
  - GLF76121 : 6 s
  - GLF76121S : 2.95 s
  - GLF76121L : 12 s
- Reset Pulse Period
  - GLF76121 : 750 ms
  - GLF76121S : 360 ms
  - GLF76121L : 750ms
- Turn-Off Delay Time
  - GLF76121 : 6 s
  - GLF76121S : 2.95 s
  - GLF76121L : 12 s
- Controlled Output Rise Time: 1 ms at 3.6 VBAT
- Integrated Output Discharge Switch When Disabled
- Operating Temperature Range: -40 to 85 °C
- HBM: 6 kV, CDM: 2 kV
- Ultra-Small: 0.97 mm x 1.47 mm WLCSP

#### APPLICATIONS

- Wearables
- IoT Devices
- Medical Devices

#### PACKAGE



0.97 mm x 1.47 mm x 0.55 mm WLCSP

### DEVICE OPTIONS / PACKAGING INFORMATION

Part Number	Top Mark	/SRO Pin Hold Time	Output Discharge	Tape and Reel Packaging
GLF76121	BN	Reset after 6 sec	85 Ω	3000 Pieces on 7 inch reel
GLF76121S	RG	Reset after 2.95 sec		
GLF76121L	RS	Reset after 12 sec		

### APPLICATION DIAGRAM

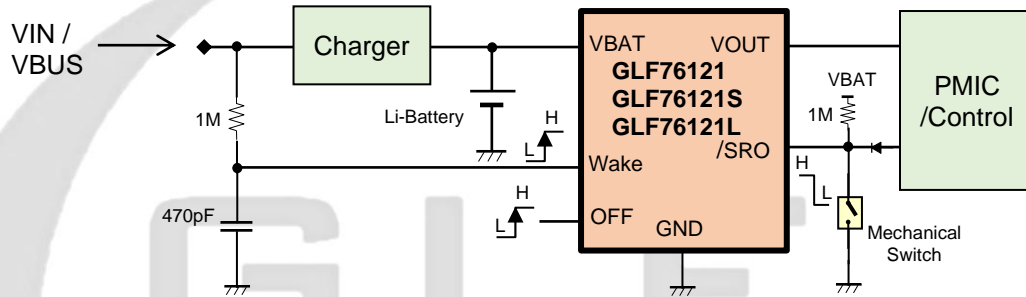


Figure 1. Typical Application with Standalone Charger IC

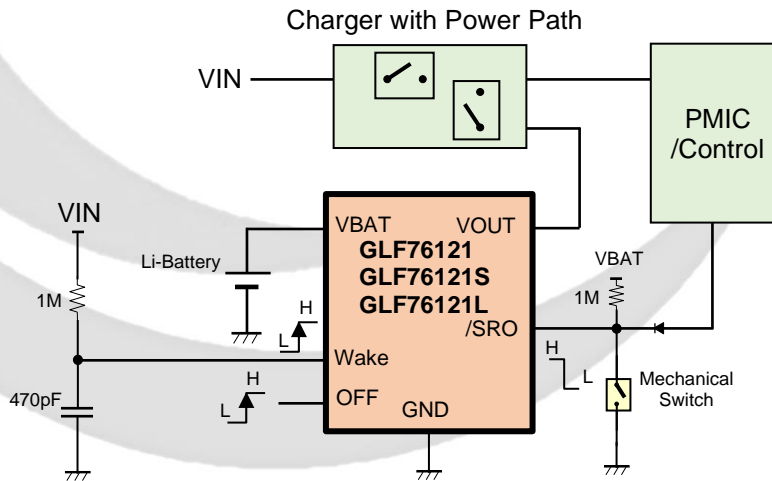


Figure 2. Typical Applications with Charger IC with Power Path and PMIC

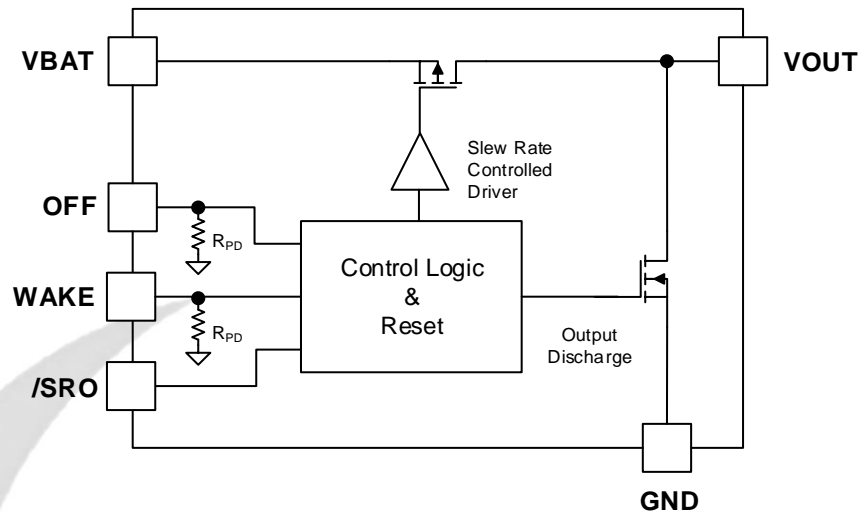
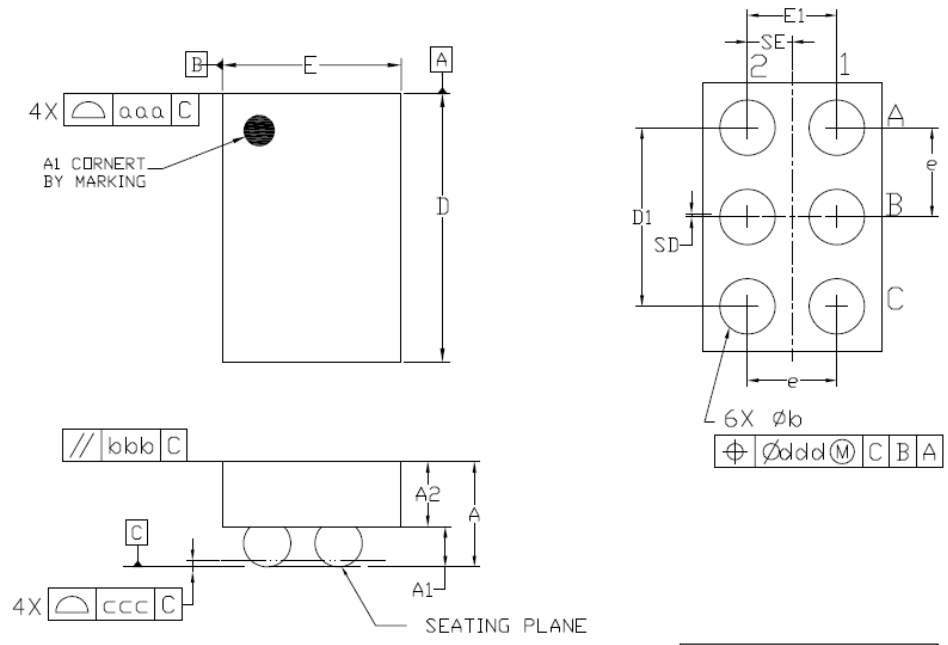
**FUNCTIONAL BLOCK DIAGRAM**

Figure 3. 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	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		

Notes

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

## SPECIFICATION DEFINITIONS

Document Type	Meaning	Product Status
Target Specification	This is a target specification intended to support exploration and discussion of critical needs for a proposed or target device. Spec limits including typical, minimum, and maximum values are desired, or target, limits. GLF reserves the right to change limits at any time without warning or notification. A target specification in no way guarantees future production or producability of the device in question.	Design / Development
Preliminary Specification	This is a draft version of a product specification. The specification is still under internal review and subject to change. GLF reserves the right to change the specification at any time without warning or notification. A preliminary specification in no way guarantees future production or producability of the device in question.	Qualification
Product Specification	This document represents the anticipated production performance characteristics of the device.	Production

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