GLF112x

Ultra-Small, I_QSmart™ Load Switch with Slew Rate Control

DESCRIPTION

The evaluation board EV028 features the GLF112x is an ultra-efficiency, 1.0 A rated, integrated load switch with the slew rate control. The best-in-class efficiency makes it an ideal choice for use in IoT, mobile, and wearable electronics.

The GLF112x features an ultra-efficient I_QSmart™ technology that supports the lowest quiescent current (I_Q) and shutdown current (I_{SD}) in the industry. Low I_Q and I_{SD} solutions help designers to reduce parasitic leakage current, improve system efficiency, and increase battery lifetime.

The 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 GLF112x slew rate control specifically limits inrush current during turn-on to minimize voltage droop.

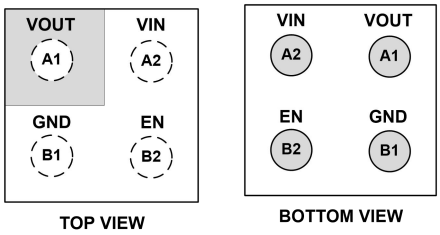
FEATURES

- Wide Input Range, V_{IN} = 1.1 V to 5.5 V
  6 V_{ABS} Max
- I_{OUT} Max = 1.0 A
- Low R_{ON} = 52 mΩ Typ. at 5.5 V_{IN}
- Ultra-Low I_Q:
  5.0 nA Typ at 5.5 V_{IN}: GLF112xH / HN
  550 nA Typ at 5.5 V_{IN}: GLF1121L
- Ultra-Low I_{SD}: 10 nA Typ at 5.5 V_{IN}
- Integrated Output Discharge Switch (Optional)
- Internal Pull-down Resistor on EN Pin: GLF112xH
- Internal Pull-up Resistor on EN Pin: GLF112xL
- 0.67 mm x 0.67 mm Wafer Level Chip Scale Package

PRODUCT TABLE

Eval Board Ordering Info	Part Number	Top Mark	R_{ON} (Typ) at V_{IN} (MAX)	V_{OUT} Rise Time at 3.3 V_{IN}	Output Discharge	EN Activity	Internal Pull up/ down
EV028-GLF1120H	GLF1120H	T	52 mΩ	380 µs	NA	High	Yes
EV028-GLF1121H	GLF1121H	U			85 Ω		Yes
EV028-GLF1121HN	GLF1121HN	V					NA
EV028-GLF1121L	GLF1121L	X				Low	Yes
EV028-GLF1123H	GLF1123H	W		4 µs		High	Yes

EVALUATION BOARD & DEVICE PACKAGE



Pin #	Name	Description
A1	VOUT	Switch Output
A2	VIN	Switch Input. Supply Voltage for IC
B1	GND	Ground
B2	EN	Enable to control the switch. The EN pin has an internal pull-down resistor for GLF1120H, GLF1121H, and GLF1123H and pull-up resistor for GLF1121L. Don't leave the EN pin of the GLF1121HN floating.

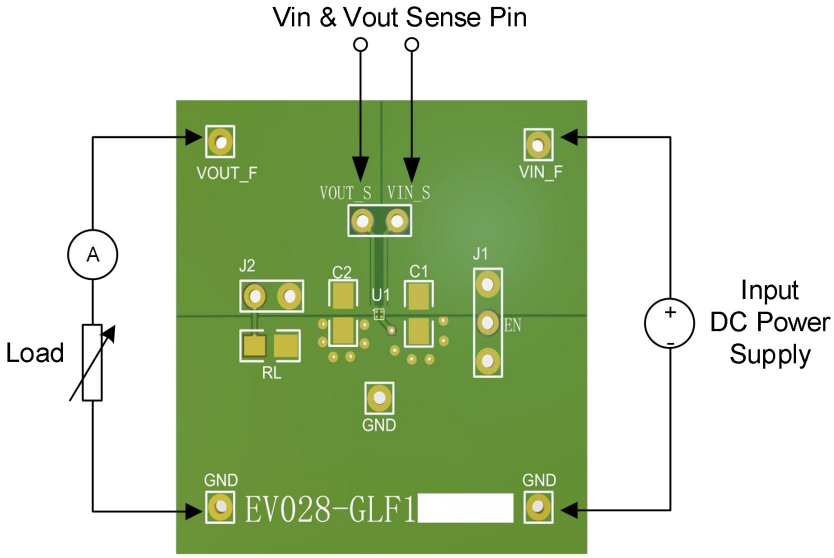
QUICK START GUIDE

The evaluation board EV028 is easy to set up to evaluate the performance of GLF112x.

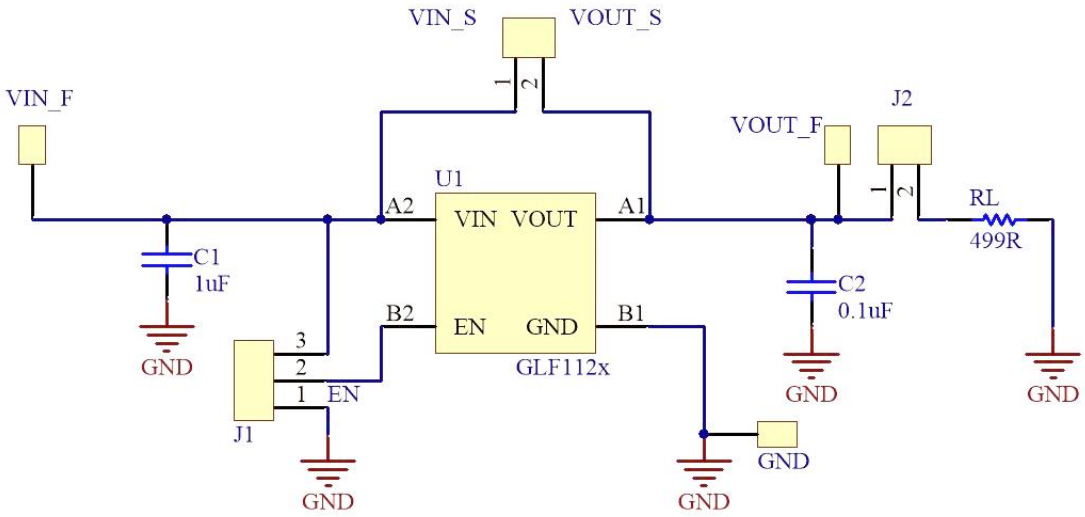
1. Preset the input power supply to the desired voltage between 1.1 V to 5.5 V. The load resistor, RL=499 Ω, has been populated on the top of the PCB board. Short the J2 to use the RL. To increase the output current, connect an electronic load to VOUT and GND. The output current for the GLF112x is rated for 1 A maximum output continuous current. Please ensure this absolute maximum is not exceeded.
2. Connect the positive and negative terminals of the input power supply to VIN and GND terminals respectively. VIN_Sense and VOUT_Sense can be used for measurement points.
3. Turn on the input power supply.
4. Configure the J1, EN jumper as required.

Part	EN activity
GLF1120H GLF1121H GLF1121HN GLF1123H	High
GLF1121L	Low

TEST SETUP



SCHEMATIC

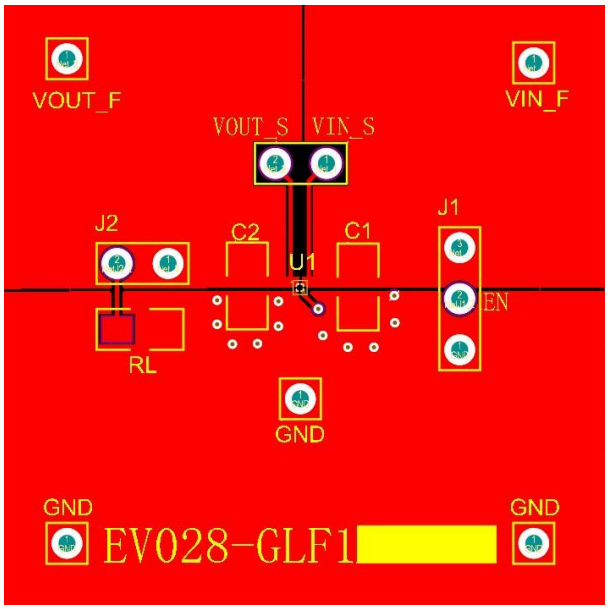


BILL OF MATERIALS

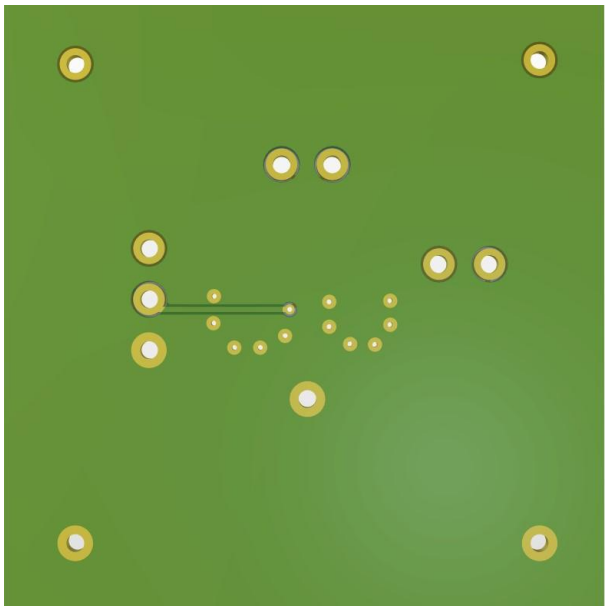
Qty	Reference	Value	Part Description	Manufacturer/Part Number
1	U1	GLF112x	GLF112x	GLF Integrated Power
1	C1	1 μF	Cap., X7R, 50V, 10% 0805	YAGEO CC0805KKX7R9BB105
1	C2	0.1 μF	Cap., X7R, 50V, 10% 0805	YAGEO CC0805KRX7R9BB104
1	RL	499 Ω	Output Resistor	YAGEO RC0805FR-07499RL
2	J1-2	Jumper	Jumper	

PRINTED CIRCUIT BOARD LAYOUT

Top Layer



Bottom Layer



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