GLF2310, GLF2311, GLF2313, GLF2321
High Precision Programmable Current Limit Power Switch

DESCRIPTION

The GLF2310, GLF2311, GLF2313 and GLF2321 are an advanced technology fully integrated power switch for applications required for precision output current limiting. The GLF2310, GLF2311, GLF2313 and GLF2321 feature also various protection functions such as under voltage lockout, true reverse current blocking (TRCB), short circuit protection, and thermal shutdown.

The GLF2310, GLF2311, GLF2313 and GLF2321 provide a built-in output voltage slew rate control to limit the inrush current and voltage surges. The FLGB output pin can be used to send a signal of fault events to the system controller. The integrated thermal shutdown (TSD) insures complete protection for the switch during output current limit and short circuit conditions. The GLF2310, GLF2311, GLF2313 and GLF2321 are an ideal switch for USB power supply.

FEATURES

- Input Range: 2.5 V to 5.5 V
- Programmable Input Constant Limit Current (GLF2310A, GLF2311A)
  - Range: 40 mA - 2.1 A
- Fixed Output Constant Limit Current:
  - GLF2311B, GLF2313: 2.1 A
  - GLF2321B: 1.8 A
- Low R_{ON}: 56 mΩ Typ. at 5.0 V_{IN}
- Ultra-Low I_Q: 20 uA Typ. at 5.0 V_{IN}
- Ultra-Low I_{SD}: 50 nA Typ. at 5.0 V_{IN}
- Under Voltage Lockout Protection
- Output Voltage Slew Rate Controlled
- True Reverse Current Blocking Protection
- Short Circuit Protection
- Deglitched Fault Flag Indication at Over Current
  - Integrated Output Discharge Switch: GLF2311, GLF2313, GLF2321
- Thermal Shutdown Protection
- SOT23 package
- IEC 62368-1:2018 CB Certification No. FI-52066

PRODUCT TABLE

Part Number	Top Mark	Current Limit ILIM	Output Discharge	Fault Flag FLGB	EN Activity	Package
GLF2310A-T1G7	FA	Programmable Output Current Limit Up to 2.1 A	NA	NA	High	SOT23-5L
GLF2311A-T1G7	FB		85 Ω	NA		SOT23-5L
GLF2310A-T2G7	HA		NA	Yes		SOT23-6L
GLF2311A-T2G7	HB		85 Ω	Yes		SOT23-6L
GLF2311B-T1G7	GB	Fixed Output Current Limit 2.1 A	85 Ω	Yes		SOT23-5L
GLF2313B-T1G7	KD	Fixed 2.1 A	85 Ω	Yes	Low	SOT23-5L
GLF2321B-T1G7	KB	Fixed Output Current Limit 1.8 A	85 Ω	Yes	High	SOT23-5L

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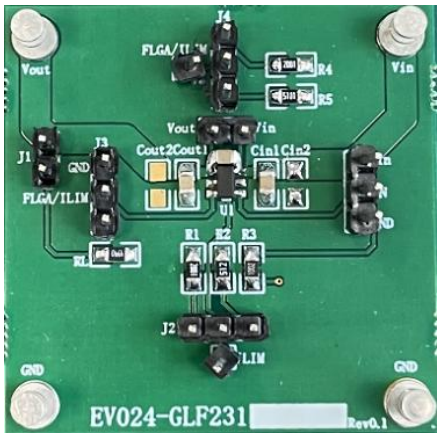
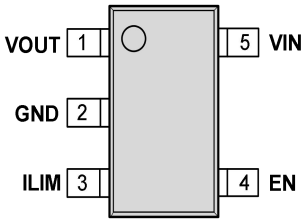
EVALUATION BOARD, DEVICE PACKAGE, AND PINOUT



PIN CONFIGURATION

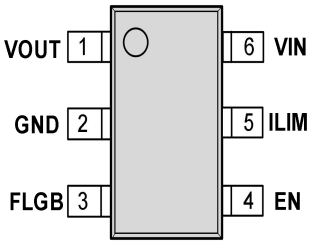
GLF2310A-T1G7, GLF2311A-T1G7



PIN DEFINITION

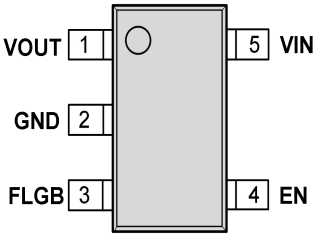
Pin #	Name	Description
1	VOUT	Switch output
2	GND	Ground
3	ILIM	Programmable current limit. Do not leave this pin floating.
4	EN	Active high switch output enables to control the switch
5	VIN	Switch Input. Supply voltage for IC

GLF2310A-T2G7, GLF2311A-T2G7



Pin #	Name	Description
1	VOUT	Switch output
2	GND	Ground
3	FLGB	Flag pin goes low to indicate OCP, SC, RCB, and TSD fault conditions
4	EN	Active high switch output enables to control the switch
5	ILIM	Programmable current limit Do not leave this pin floating.
6	VIN	Switch Input. Supply voltage for IC

GLF2311B-T1G7, GLF2313B-T1G7, GLF2321B-T1G7



Pin #	Name	Description
1	VOUT	Switch Output
2	GND	Ground
3	FLGB	Flag pin goes low to indicate OCP, SC, RCB, and TSD fault conditions
4	EN	Active high switch output enables to control the switch Active low: GLF2313B
5	VIN	Switch Input. Supply voltage for IC

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QUICK START GUIDE

1. The evaluation board EV024 is easy to set up to evaluate the performance of GLF2310 / GLF2311 / GLF2313 / GLF2321. Preset the input power supply to the desired voltage between 2.5 V to 5.5 V.

2. The load resistor RL=499 Ω, has been populated on the top of the PCB board. Short the J1 to use the RL. To increase the output current, connect an electronic load to VOUT and GND. The GLF2310 / GLF2311 / GLF2313 is rated for 2.1 A maximum continuous output current and GLF2321 is rated for 1.8 A maximum continuous output current. Please ensure the absolute maximum is not exceeded.

3. 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.

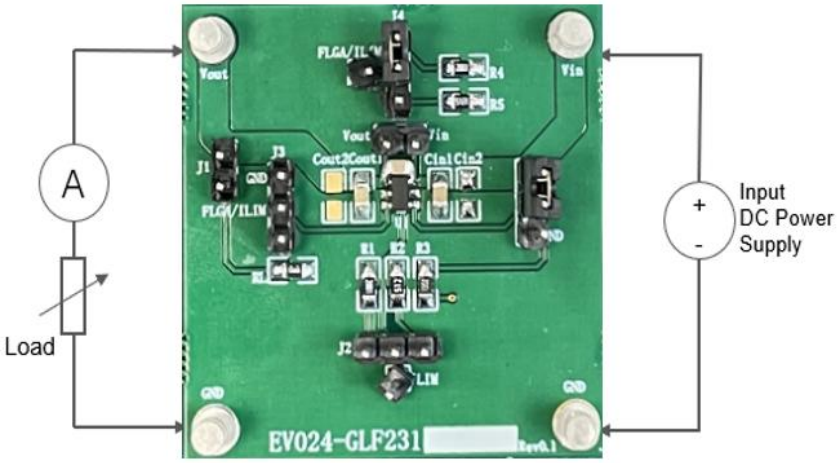
4. When using GLF2310A-T1G7 and GLF2311A-T1G7, you can use J4 program the OCP: Short pin3 (J4) to pin2 (J4) will use R4 (2 KΩ), Short pin1 (J4) to pin2 (J4) will use R5 (5.1 KΩ), or Connect between pin2 (J4) and GND with an external resistor.

5. When using GLF2311B-T1G7, GLF2313B-T1G7 and GLF2321B-T1G7, you can Short pin1 (J3) to pin2 (J3), then use a multimeter or oscilloscope to observe the FLGB signal of pin2 (J3) or pin2 (J4).

6. When using GLF2310A-T2G7 and GLF2311A-T2G7, you can use J2 program the OCP: Short pin3 (J2) to pin2 (J2) will use R1 (2 KΩ), Short pin1 (J2) to pin2 (J2) will use R2 (5.1 KΩ), or Connect between pin2 (J2) and GND with an external resistor.

7. Turn on the input power supply. Connect EN to VIN (to GND for GLF2313) with a jumper, and VOUT will be turned on.

TEST SETUP



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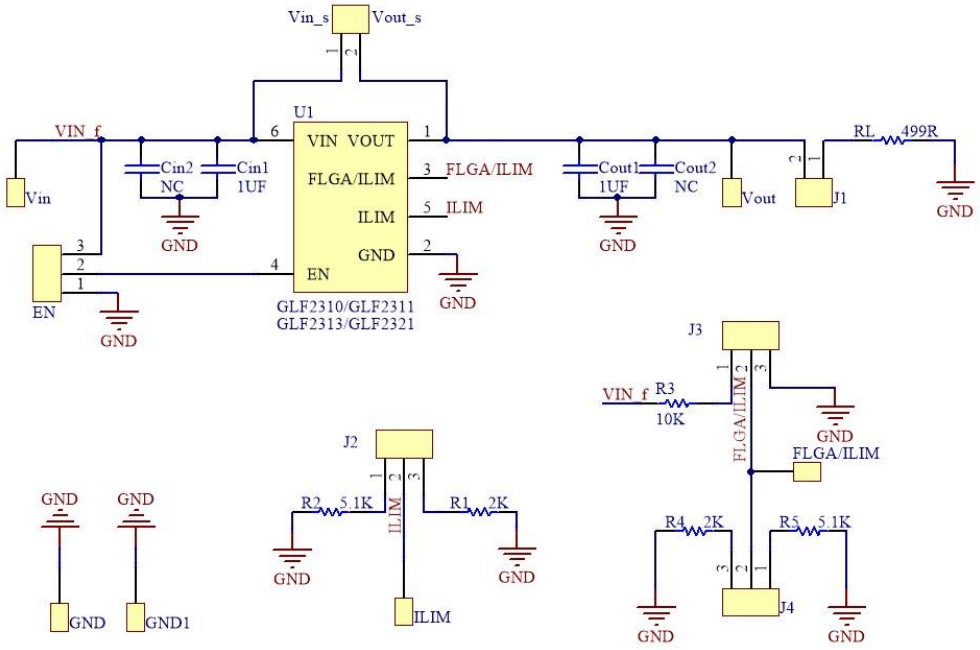
SCHEMATIC



BILL OF MATERIALS

Qty	Reference	Value	Part Description	Manufacturer/ Part Number
1	U1	GLF2310/ GLF2311/ GLF2313/ GLF2321	Current Limit Power Switch	GLF Integrated Power
3	Cin1, Cout1, C_F	1 μF	Cap., X7R, 1 μF, 16 V, ±5%, 0805	YAGEO/CC0805JKX7R 7BB105
2	R1, R4	2 KΩ	Res., 2 KΩ, 1/8 W, ±1%, 0805	YAGEO/RC0805FR-072KL
2	R2, R5	5.1 KΩ	Res., 5.1 KΩ, 1/8 W, ±1%, 0805	YAGEO/RC0805FR-075K1L
1	R3	10 KΩ	Res.,10 KΩ, 1/8 W, ±1%, 0805	YAGEO/RC0805JR-0710KL
1	RL	499 Ω	Res.,499 Ω, 1/8 W, ±1%, 0805	YAGEO/RC0805FR-07499RL
4	J2, J3, J4, J_{EN}	Jumper	Jumper, 2.54 mm, 3 pin	-
1	J1	Jumper	Jumper, 2.54 mm, 2 pin	-
4	VIN, VOUT, GND	-	1514-2	-

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PRINTED CIRCUIT BOARD LAYOUT

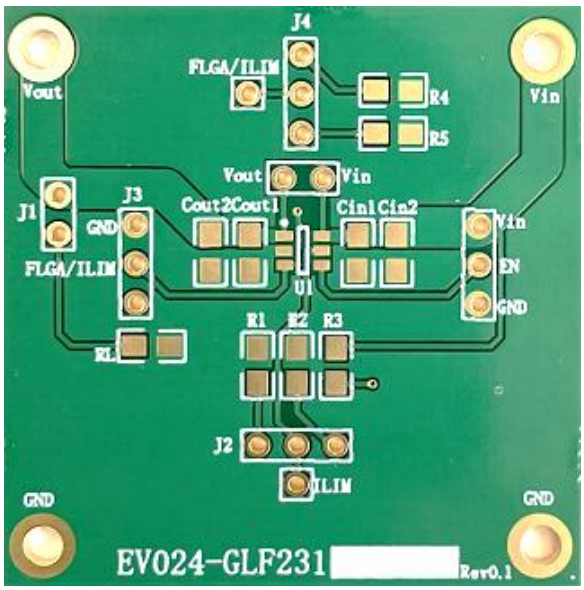

Fig 1. Top Layer

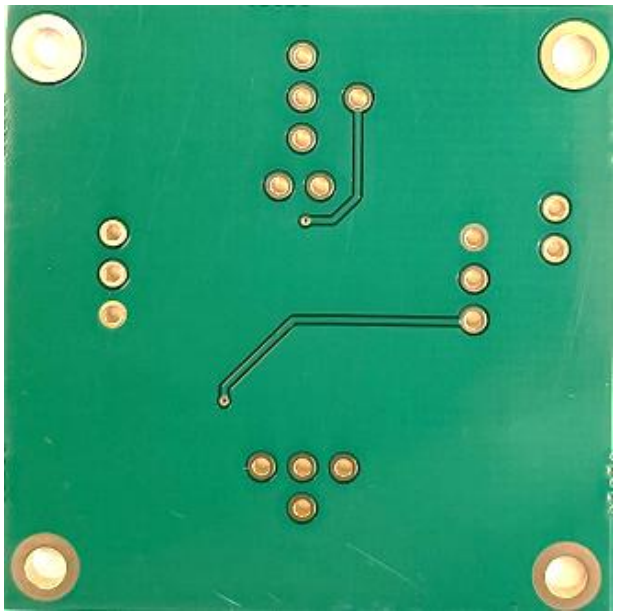

Fig 2. Bottom Layer

NOTICE: The evaluation board provided by GLF Integrated Power is intended for use for ENGINEERING DEVELOPMENT, OR EVALUATION PURPOSES ONLY and is not for any commercial use. The user assumes all responsibility and liability for proper and safe handling of the goods.

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