

GLF1401

6 A Dual Channel Programmable Slew Rate Power Switch

DESCRIPTION

The GLF1401 is a dual channel integrated load switch with the VariRise™ technology which provides the programmable slew rate of variable output voltage rising times.

Each channel of the GLF1401 operates independently over an input range from 0.6 V to 5.5V and supports 6A maximum continuous output current per channel. The GLF1401 feature supports some of the lowest R_{ON} , quiescent currents (I_Q) and shutdown currents (I_{SD}) in the industry. Low R_{ON} reduces conduction losses, while low I_Q and I_{SD} solutions help designers to improve system efficiency.

The SR input pin allows the user to add an external capacitor to set the slew rate of the switch output voltage to a specific value for a given output capacitance. It limits inrush currents during turn-on, helping to minimize voltage drop.

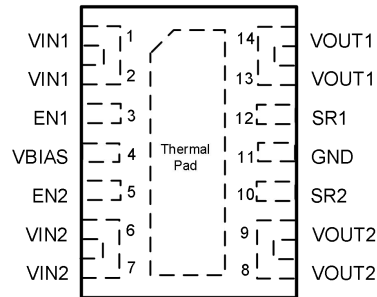
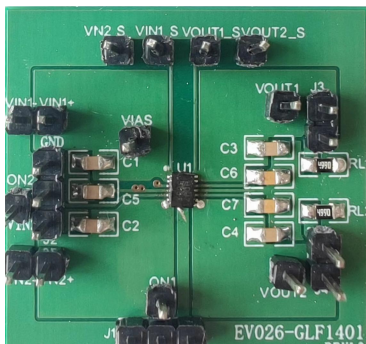
FEATURES

- Input Voltage Range: 0.6 V to 5.5 V
- VBIAS Voltage Range: 2.5 V to 5.5 V
- 6 A Continuous Output Current Per Channel
- Low R_{ON} : 19 m Ω Typ. at $V_{IN} = V_{BIAS} = 5 V$
- Low Quiescent Current, I_{Q_BIAS}
- 15 μA Typ. at $V_{IN1 \text{ or } 2} = V_{BIAS} = 5 V$, Single Channel
- 18 μA Typ. at $V_{IN1\&2} = V_{BIAS} = 5 V$, Both Channel
- Low Shutdown Current of V_{IN} , I_{SD_VIN}
- 8 nA Typ. at $V_{IN} = 5.5 V$, Per Channel
- Programmable V_{OUT} Rising Time
- Output Discharge Switch When
- Disabled
- Thermal Shutdown Protection

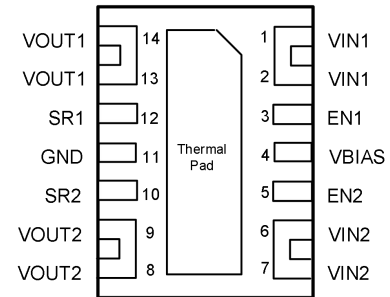
PRODUCT TABLE

Eval Board Ordering Info	Part Number	Top Mark	R_{ON} (Typ.) @ 5.0 V	Output Discharge	V_{OUT} Rise Time t_r (Typ) at 5.0 V	EN Activity
EV026-GLF1401	GLF1401-D3G7	HD	19 m Ω	200 Ω	1970 μs	High

EVALUATION BOARD & DEVICE PACKAGE



TOP VIEW



BOTTOM VIEW

Pin No.	Name	Description
1,2	VIN1	Switch 1 input
3	EN1	Active high signal to enable the switch 1
4	VBIAS	Supply voltage for IC
5	EN2	Active high signal to enable the switch 2
6,7	VIN2	Switch 2 input
8,9	VOUT2	Switch 2 output
10	SR2	Switch 2 slew rate control, connect external capacitor
11	GND	Ground
12	SR1	Switch 1 slew rate control, connect external capacitor
13,14	VOUT1	Switch 1 output
	Thermal pad	Tie to GND

QUICK START GUIDE

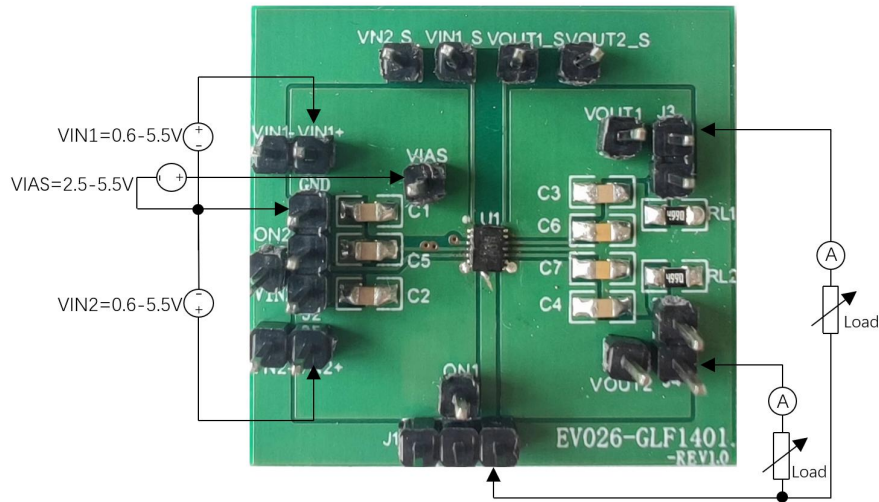
The evaluation board EV026 is easy to set up to evaluate the performance of GLF1401.

1. Preset the input power supply to the desired voltage between 0.6 V to 5.5 V. Preset the IC's supply voltage to the desired voltage between 2.5V and 5.5V.
2. The load resistors, $RL1=RL2=499 \Omega$, has been populated on the top of the PC board. Short the J3 to use the $RL1=499 \Omega$ and short the J4 to use the $RL2=499 \Omega$. To increase the output current, connect an electronic load to V_{OUTx} and GND or V_{INx-} . The output current for the GLF1401 is rated for 6A maximum output continuous current each channel. Please ensure this

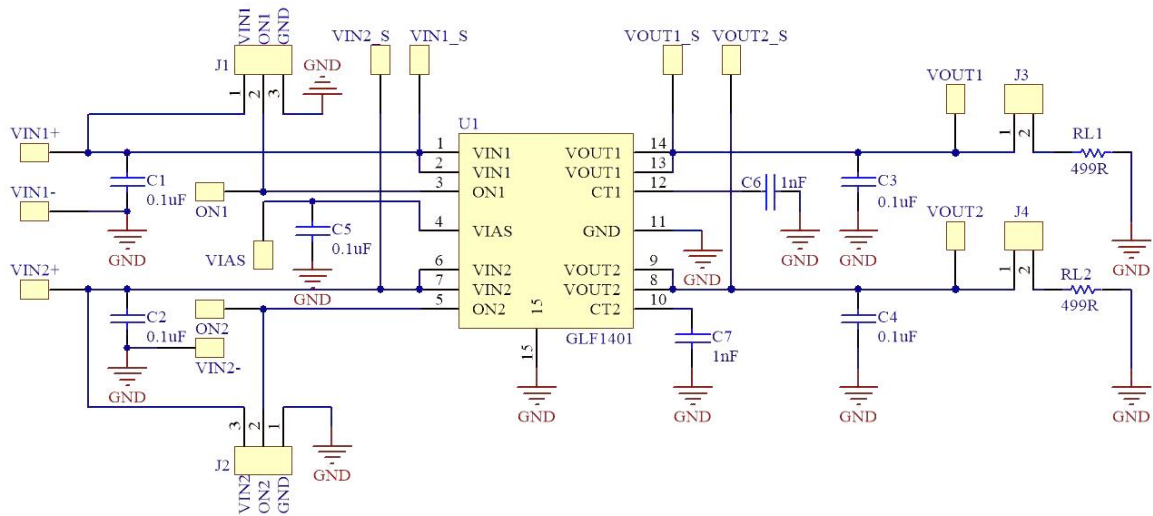
absolute maximum is not exceeded.

3. Connect the positive and negative terminals of the input power supply to V_{INx+} and GND or V_{INx-} terminals respectively. V_{INx_Sense} and V_{OUTx_Sense} can be used for measurement points.
4. Capacitance $C6=C7=1 \text{ nF}$ is soldered to the top of the board, the output time can be adjusted by changing the capacitance of C6 or C7.
5. Turn on the input power supply.
6. Configure ONx and C6 and C7 as required.

TEST SETUP



SCHEMATIC



BILL OF MATERIALS

Qty	Reference	Value	Part Description	Manufacturer/Part Number
1	U1	GLF1401	GLF1401	GLF Integrated Power
2	C1, C2, C3, C4, C5	0.1 µF	Cap., X7R, 50V, 10% 0805	YAGEO CC0805KRX7R9BB104
2	C6, C7	1 nF	Cap., X7R, 50V, 10% 0805	YAGEO CC0805JRN09BN102
2	RL1, RL2	499 Ω	Output Resistor	YAGEO RC0805FR-07499RL

PRINTED CIRCUIT BOARD LAYOUT

Fig 1. Top Layer

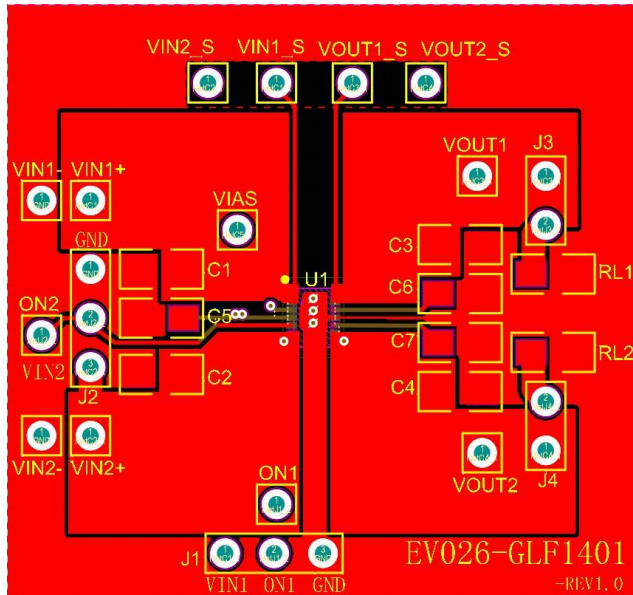
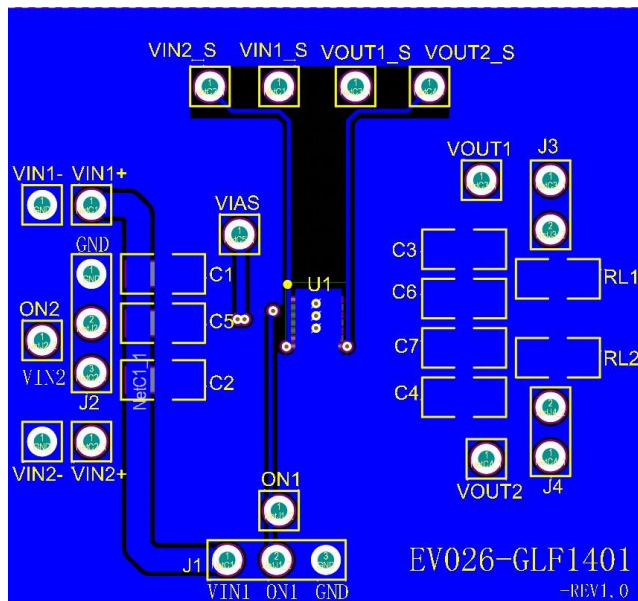


Fig 2. Bottom Layer



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.