

GLF74520, GLF74521

Ultra-low Current Consumption Power Multiplexer Switch with Auto & Manual Selection

DESCRIPTION

The GLF74520 and GLF74521 are integrated power multiplexer switch with dual independent power switches connected to a single output pin to enable seamless transition between two input sources. The EN and SEL pins provide manual and automatic input power source selection between two different power suppliers.

The GLF74520 and GLF74521 operate at the wide input range from 1.5 V to 5.5 V and delivers up to 2.5 A per each channel. They include inrush current control and the reverse current blocking protection to avoid unwanted reverse current to input power sources. GLF74521 has an output discharge function at off mode to quickly discharge the remaining output charges.

FEATURES

- Two-Input and Single-Output Power Multiplexer Switch
- Supply Voltage Range: 1.5 V to 5.5 V
6 Vabs Max
- R_{ON} : 35 m Ω Typ. at 5.5 VIN1 or VIN2
43 m Ω Typ. at 3.3 VIN1 or VIN2
- 2.5 A Continuous Output Current Capability Per Channel
- Ultra-Low Supply Current at Operation
 I_Q : 4 μ A Typ at 5.5 VIN
- Ultra-Low Stand-by Current
 I_{SD} : 20 nA Typ at 5.5 VIN
- No Cross Conduction Between Two Inputs
- Reverse Current Blocking when Disabled
- Operating Temperature Range: -40 to 85 °C
- HBM: 6 kV, CDM: 2 kV
- 0.97 mm x 1.47 mm x 0.55 mm, 6 Bumps Wafer Level Chip Scale Package

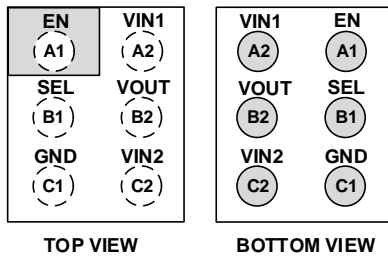
PRODUCT TABLE

Eval Board Ordering Info	Part Number	Top Mark	R_{ON} (Typ.) @ 5.5 Vin	Output Discharge	EN & SEL Activity
EV006-GLF74520	GLF74520	AR	35 m Ω	NA	High
EV006-GLF74521	GLF74521	SV		70 Ω	

EVALUATION BOARD & DEVICE PACKAGE



PIN CONFIGURATION AND DEFINITION



Pin #	Name	Description
A1	EN	Enable to control the switch. There is an internal pull-down resistor.
A2	VIN1	Switch Input 1
B1	SEL	Input Source Selection. . There is an internal pull-down resistor. See Table 1.
B2	VOUT	Switch Output
C1	GND	Ground
C2	VIN2	Switch Input 2

QUICK START GUIDE

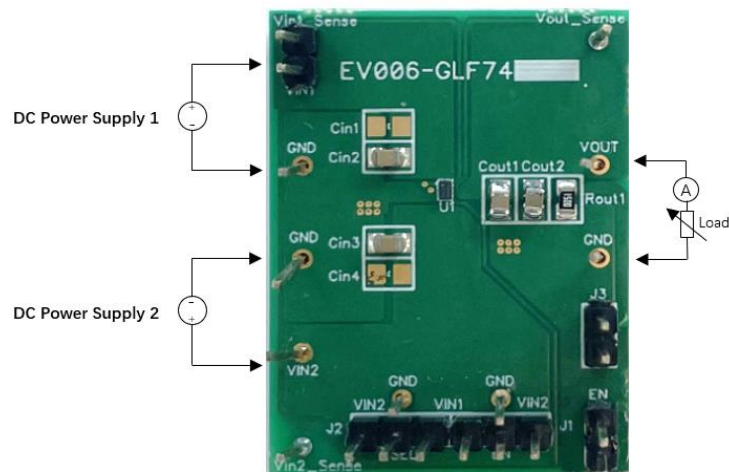
The evaluation board EV006 is easy to set up to evaluate the performance of GLF74520 and GLF74521.

1. Preset the input power supply to the desired voltage between 1.5 V to 5.5 V.
2. The load resistor, Rout1=150 Ω, has been populated. Short the J3 to use the 150 Ω or Rout2 which is not populated on the bottom side. To increase the output current, connect an electronic load to VOUT and GND. The output current of GLF74520 and GLF74521 is rated for 2.5 A maximum output continuous current per each channel. Please ensure this absolute maximum is not exceeded.
3. Connect the positive and negative terminals of the input power supply to VIN and GND respectively. VIN1_Sense, Vin2_Sense, and Vout_Sense can be used for measurement point.
4. The input source selection function is set by the combination of SEL and EN. See Table 1 below. The SEL pin and the EN pin are connected to one of Input sources by J2 and J1 respectively.
5. Turn on the input power supply.
6. Note : The GLF74520 has an internal EN and SEL pull-down resistor to ensure the part is in a defined state.

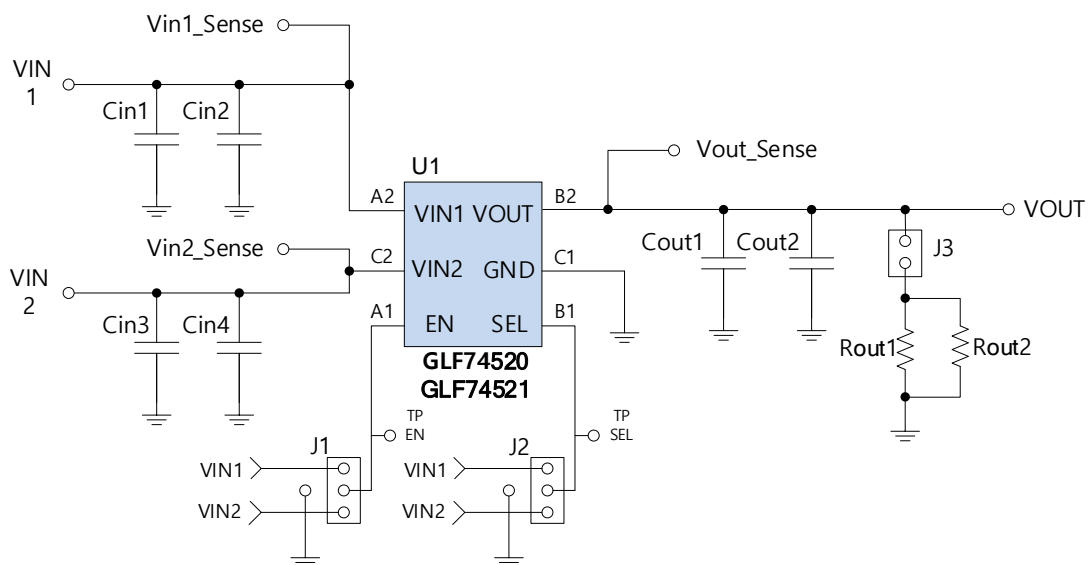
Table 1. Truth Table of Input Source Selection

SEL	EN	Function	VOUT
0	0	Both switches are off.	High-Z: GLF74520 GND: GLF74521
0	1	Auto-Input selection. Vout is connected to a higher input source automatically.	Higher Input between VIN1 and VIN2
1	0	Only VIN1 is selected.	VIN1
1	1	Only VIN2 is selected.	VIN2

TEST SETUP



SCHEMATIC



BILL OF MATERIALS

Qty	Reference	Value	Part Description	Manufacturer/Part Number
1	U1	GLF74520 / GLF74521		GLF Integrated Power
2	Cin2, Cin3	1uF	Cap., X7R, 50V, 10% 0805	YAGEO CC0805KKX7R9BB105
2	Cout1, Cout2	47uF	Cap., X5R, 10V, 20% 0805	TDK C2012X5R1A476M125AC
1	Rout1	499 Ω	Output Resistor	YAGEO RC0805FR-07499RL
2	Cin1, Cin4	-		Not populated on the top
1	Rout2	-	Load Resistor	Not populated on the bottom
3	JP1-3	Jumper	Jumper	

PRINTED CIRCUIT BOARD LAYOUT

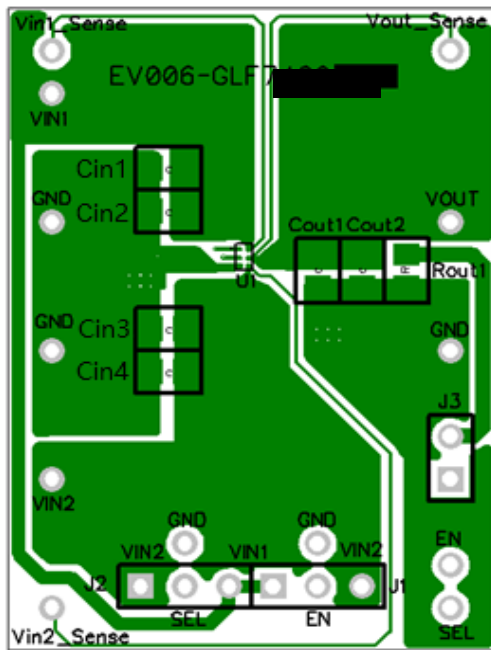


Fig 1. Top Layer

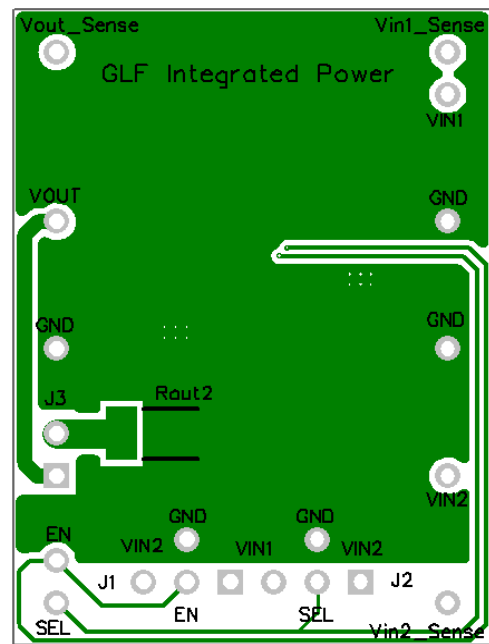


Fig 2. Bottom Layer

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.