EVAL Kit Manual

KTS1900Q (Load Switch)

Ideal Diode and Load Switch Controller with Reverse Input Protection

EVAL Kit Physical Contents

Item #	Description	Quantity
1	KTS1900Q load switch Evaluation board fully assembled PCB	1
2	Anti-static bag	1
3	KTS1900Q load switch Quick Start Guide, printed 1 page (A4 or US Letter)	1
4	EVAL Kit box	1

QR Links for Documents

IC Datasheet	EVAL Kit Landing Page
https://www.kinet-ic.com/kts1900q/	https://www.kinet-ic.com/kts1900qgxaa-zr-mmev01/

User-Supplied Equipment

Required Equipment

1. DC Power Supply Equipment that can source at least 12V voltage and 5A current.
2. Digital Multimeters, two required – used to measure input/output voltages.
3. Load – any of the following may be used:
    a. Electronic load capable of sinking 12V at 5A (60W).
    b. Power Resistor – 2.4Ω /12V/60W or greater value is required.
4. Test leads:
    a. One pair of banana-to-clip test leads connect a voltmeter to the VIN and GND test points.
    b. One pair of banana-to-clip test leads connect a voltmeter to the VIN and VOUT test points.
    c. One pair of banana-jack test leads connect VOUT/GND to an electronic load.

Optional Equipment

1. Oscilloscope with 4x probes to monitor waveforms

Recommended Operating Conditions

Symbol	Description	Conditions	Min	Typ	Max	Units
VIN	DC Input	VIN to GND	4.2	12	30	V
IO	Loaded Output Current	VOUT to GND	0	5	15	A
VOUT	Output Voltage	VIN = 12V, VOUT to GND, IO = 5A	11.93	11.955	11.975	V

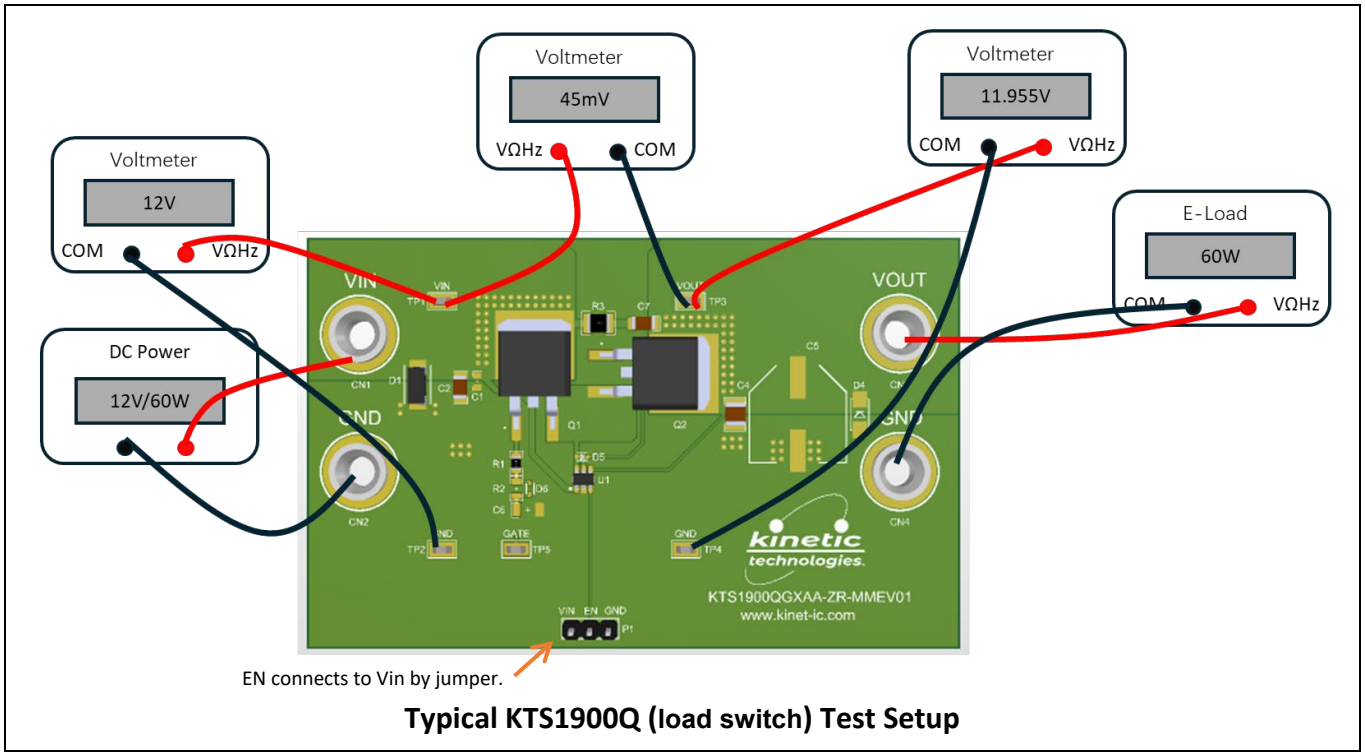
Quick Start Procedures

The typical input voltage of this board is set to 12V. The voltage drop from VIN to VOUT is regulated to around 45mV by Kinetic Technologies KTS1900Q.

1. Connect one pair of power cables to the VIN connectors (VIN and GND) of EVAL Kit.
2. Before connecting the EVAL Kit to the DC power supply, turn on the supply and adjust the voltage as close to 0V as possible. Then disable the power supply output or turn the supply off. While disabled or off, connect the VIN power cables' ends to the power supply.
3. Connect one voltage meter to the VIN and GND test pins, one voltage meter to the VOUT and GND test pins.
4. Connect the load to the output connectors (VOUT and GND). Set the load to 5A.
5. Turn on the DC Power Supply and very slowly ramp its voltage to an appropriate voltage, such as 12V. While ramping VIN slowly, use the power supply's output current indication (or a digital multimeter) to monitor the VIN current. If the current becomes high, reduce the VIN voltage quickly to prevent damage. Then inspect the setup for any wiring errors.
6. Verify VOUT and the voltage drop from the VIN to VOUT.
   VOUT is regulated to a typical 11.955V at 12V Input, the typical voltage drop is 45mV (the range is 25mV to 70mV).

Typical Test Setup Input condition.

The figure below shows a typical setup for KTS1900Q load switch EVB. Input voltage can be applied in the connectors of VIN and GND.



Typical KTS1900Q (load switch) Test Setup