KTS1900

Ideal Diode and Load Switch Controller with Reverse Input Protection

New Product Introduction
December 2023

Presentation Outline

- Product Description
- Features & Benefits
- Typical Application Diagram
- Target Applications
- Functional Block Diagram

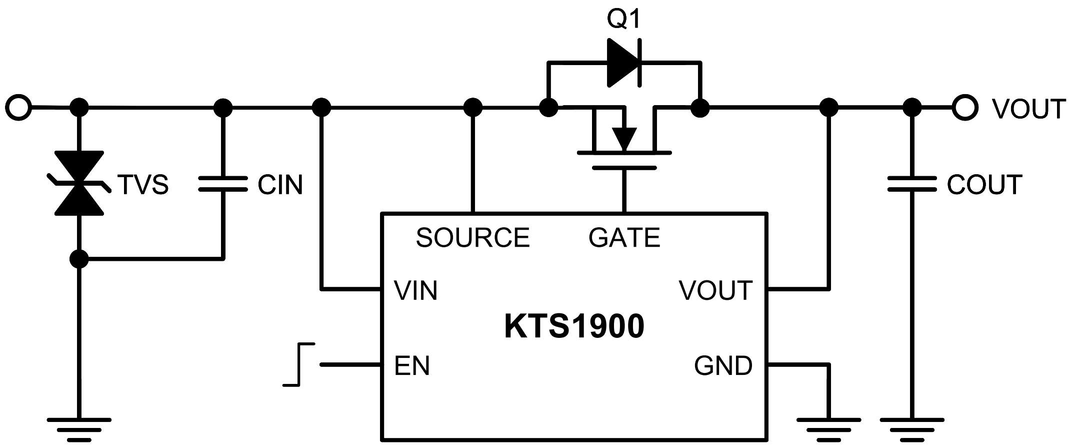
Product Description

- The KTS1900 is an ideal diode and load switch controller with reverse input protection. It has an internal charge pump to enable the use of an N-channel MOSFET with low on-resistance to replace a Schottky diode or a P-channel MOSFET based solution. It also can be used with two Back-to-Back MOSFETs for Load switching and Inrush Control. With low on-resistance N-Channel MOSFET, the lower forward voltage drops, less power dissipation, and heat dissipation can be achieved.
- The KTS1900 is packaged in a small fully green compliant 6-Pin SOT-23 Package (2.9mm x 1.6mm).

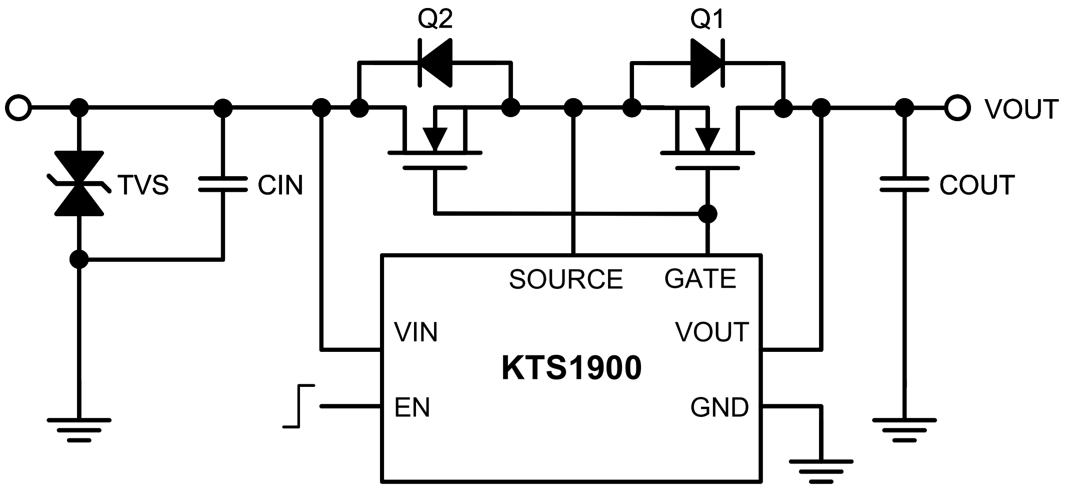
Features & Benefits

Feature	Benefit
4.2V to 60V Wide Input Operating Range with Reverse Voltage Protection to -60V	Wide Vin Range supports most popular industry/telecom/server/networking/PC/redundant power systems applications with 5V to 48V working voltage
Internal Charge Pump for External High-Side N-Channel MOSFET Driving	Provide lower power loss & lower BOM cost solution than P-MOSFET load switch solution
Controller and MOSFET Driver for Single N-MOSFET Reverse Protection	Easy design and suitable for redundant power OR-ing applications
Controller and MOSFET Driver for Two Back-to-Back N-MOSFETs, one for Reverse Protection and the other for Load Switching and Inrush Control	Easy design and suitable for reverse blocking load switch applications

Typical Application Diagram



Ideal Diode Controller Application



Load Switch Controller Application

Target Applications

- Reverse Power Supply Protection
- Telecom/Server/Networking Systems
- USB-C PD 3.1 EPR 36~48V Port(Notebook/PC)
- Battery and System Protection
- Redundant Power Systems
- Industrial and Medical Systems

Functional Block Diagram