

PI2001 Features

- Fast dynamic response to power source failures, with 160 ns reverse current turn-off delay time
- 4 A gate discharge current
- Accurate MOSFET drain-to-source voltage sensing to indicate system level fault conditions
- Programmable under and overvoltage detection
- Overtemperature fault detection
- Adjustable reverse current blanking timer
- Withstands 100 V transients in low-side applications
- Master/Slave I/O for paralleling (TDFN package only)
- Active low-fault flag output

PI2001



Product Description

The PI2001 *Cool-ORing™* solution is a universal high-speed Active ORing controller IC designed for use with N-channel MOSFETs in redundant power system architectures. The PI2001 *Cool-ORing* controller enables an extremely low power loss solution with fast dynamic response to fault conditions, critical for high availability systems. The PI2001 controls single or parallel MOSFETs to address Active ORing applications protecting against power source failures. The PI2001 can be used in either high-side or low-side Active ORing applications and a master/slave feature allows the paralleling of IC/MOSFET chipsets for high current Active ORing.

The gate drive output turns the MOSFET on in normal steady state operation, while achieving high-speed turn-off during input power source fault conditions, that cause reverse current flow, with auto-reset once the fault clears. The MOSFET drain-to-source voltage is

monitored to detect normal forward, excessive forward, light load and reverse current flow. The PI2001 provides an active low-fault flag output to the system during excessive forward current, reverse current, light load, overvoltage, undervoltage and overtemperature fault conditions. There is an internal shunt regulator at the VC input for high voltage applications and the undervoltage and overvoltage thresholds are programmable via external resistor dividers.

Applications

- N+1 redundant power systems
- Servers & high-end computing
- Telecom systems
- Low & high-side Active ORing
- High-current Active ORing

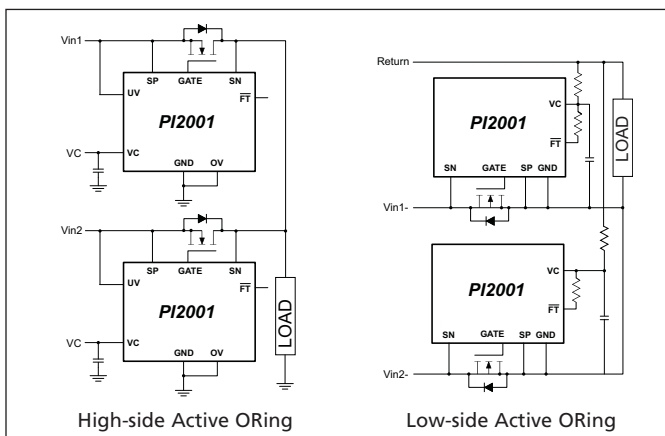
Part Numbering

Part Number	Package	Target Application	Bias Supply	MOSFET Gate Drive Voltage	MOSFET Gate Discharge Current	Turn-off Delay Time	Shipment Packaging
PI2001-00-QEIG	3mm x 3mm 10 Lead TDFN	Universal Low Voltage	4.5 V – 13.2 V	8.5 V – 10.5 V	4 A (typ)	160 ns (typ.)	Tape and Reel
PI2001-00-SOIG	8 Lead SOIC	Up to 100 V (low side)					

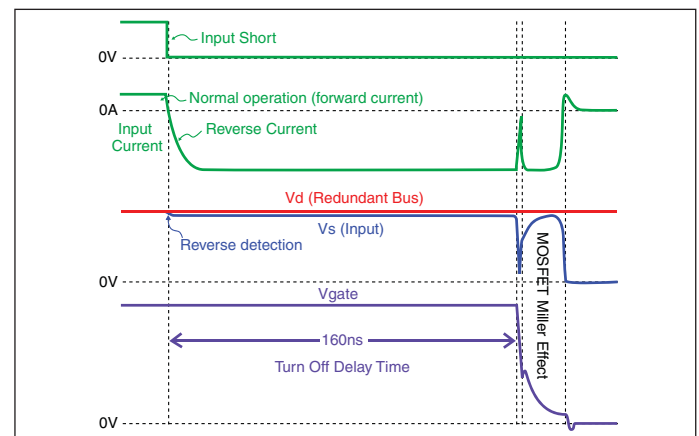
Evaluation Boards

PI2001-EVAL1	PI2001 Evaluation Board using 3 mm x 3 mm TDFN package and SO-8 MOSFET in high-side configuration.
--------------	--

Typical Application



PI2001 Performance



Typical dynamic response of the PI2001 to an input power source short circuit fault condition.