



New Product Announcement

DZDH0401DW

Ideal Diode Controller Drives P-Channel MOSFET for Superior Power Efficiency and Reverse Discharge Protection

The DZDH0401DW is an ideal diode controller for system protection against reverse discharge. The device drives a P-channel MOSFET and provides the high-side rail isolation necessary for reverse current blocking in systems up to 40V.

Applications include cordless power tools and autonomous household/garden appliances, along with OR-ing rectifiers used in the hot-swappable and N+1 redundancy power supplies found in data center servers.

By combining the DZDH0401DW with a low on-state resistance MOSFET, designers will benefit from vastly reduced power dissipation compared to Schottky diode solutions, particularly in high-power applications.

This improved efficiency means lower thermal management costs and increased system reliability. In this configuration, the DZDH0401DW detects when input power disconnects, then drives the MOSFET into an OFF state—thereby isolating any return current path and maintaining system stability.

The complete reverse discharge protection solution consists of the controller, a MOSFET, and just two resistors. This simple and compact arrangement minimizes design effort and provides a solution that is suitable for deployment in space-constrained designs.

The DZDH0401DW is available in the compact SOT363 package (2.1mm x 2.15mm x 1mm).

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The Diodes Advantage

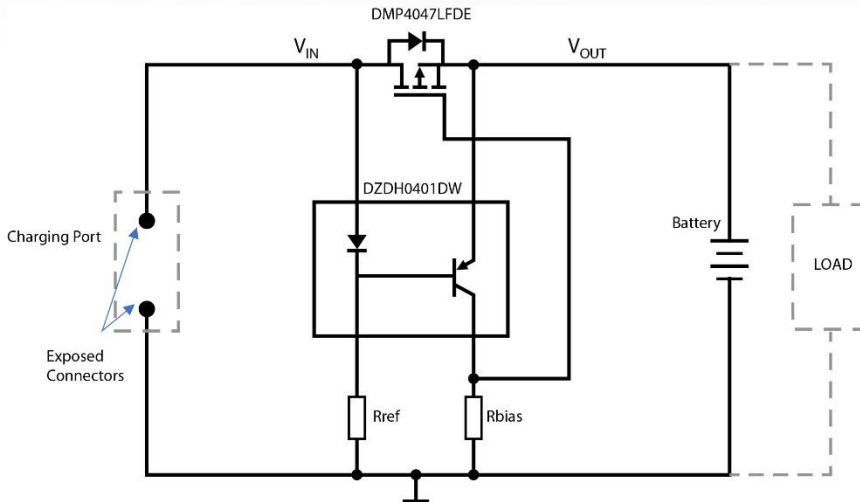
The DZDH0401DW simplifies ideal diode designs to provide high system efficiency and reliability.

- **High-Isolation Reverse Discharge Protection**
Improves system stability and reliability
- **Low Forward Power Losses**
Improves energy efficiency and reduces heat management costs
- **Small Solution Footprint**
Optimizes board space

Applications

- High-side disconnect switches
- Battery discharge protections
- N+1 redundant power supplies
- Hot-swappable power supplies
- Emergency lighting systems

Typical Application



$V_{IN} > V_{OUT}$ minimizes forward losses.

$V_{IN} < V_{OUT}$ high isolation, blocks battery discharge path protecting charging port.

Product Portfolio

Part Number	Disconnect Time typ. (ns)	V_{IN} max. (V)	V_{OUT} max. (V)	$V_{SOURCE} - V_{DRAIN}$ typ. Blocking (V)	I_{BIAS} max. (mA)	I_{DRAIN} max. (mA)	I_{REF} max. (mA)	I_{SOURCE} max. (mA)
DZDH0401DW	200	40	40	84	-300	300	-300	300

Ordering Information

Orderable Part Number	Package	Size (Typ.) (mm)	Packing	
			Quantity	Carrier
DZDH0401DW-7	SOT363	2.15 x 2.1 x 1.0	3000	7" Reel (8mm tape)