PowerPath Controllers, Ideal Diodes

PowerPath™ controllers simplify power source selection in portable and high availability electronics employing multiple, disparate inputs such as wall adapters and batteries. Selection is either by highest voltage, as in a diode-OR, or by highest priority. Linear Technology’s PowerPath controllers utilize P-channel MOSFETs as switches and ideal diodes. By dropping significantly less forward voltage than a regular diode, an ideal diode MOSFET conserves power and voltage headroom, critical for low voltage, battery-equipped systems. The lower drop leads to cooler operation, eliminating bulky heat sinks.

- Connects Highest Priority Valid Supply to Output
- 256ms Long, 1.5% Precise Overvoltage and Undervoltage Validation
- <1μA Draw from Supplies Below VOUT
- ~42V Reversed Input Protection
- Blocks Reverse and Cross Conduction While Minimizing Output Droop

LTC®4417 Triple Supply Prioritized PowerPath Controller

LTC4415 Dual Monolithic Ideal Diodes with Adjustable 4A Limit

- 15mV Forward Turn-On Voltage
- Smooth Oscillation-Free Diode-OR Switchover
- Load Current Monitor
- Precision Enable Thresholds for Prioritized Switchover
- Current/Thermal Limit Warnings, Status Outputs

www.BDTIC.com/Linear
LTC4414 3V to 36V Ideal Diode Controller for Large PFETs

- Low Loss Replacement for Power Schottky Diode
- MOSFET Gate Protection Clamp
- –14V Reversed Input Protection
- Off Control Input
- Status Output Drives Auxiliary PFET

LTC2952 Pushbutton and Dual Ideal Diode-OR Controller with System Supervisor

- Dual Input Ideal Diode-OR Control
- Pushbutton On/Off Control of Downstream DC/DC Converter
- Adjustable On/Off Debounce Timers
- Simple Interface for Graceful Microprocessor Shutdown
- ±8kV HBM ESD on Pushbutton Input

Linear Technology PowerPath Controllers

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<th>Part Number</th>
<th>V_{IN} Range (V)</th>
<th>Max Current (mA)</th>
<th>I_Q (μA)</th>
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<td>17mV Turn-On, 140mΩ Ideal Diode with 2.6A Limit</td>
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