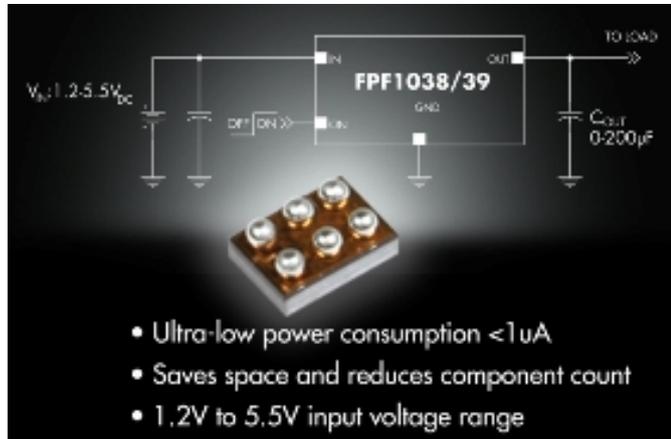


# Load Switches Simplify Complex Power Designs



Designers of higher-complexity consumer applications like set-top boxes, ultra-mobile PCs, mobile internet devices and eBooks need a power switch solution that can handle the battery management and green energy challenges associated with the higher load currents, lower supply voltages, larger batteries and more dynamic operating conditions found in these applications.

Fairchild Semiconductor's FPF1038 / FPF1039 advanced load management switches provide a monolithic, one-chip solution to the designers' challenge of reducing in-rush current, or high  $di/dt$ , when a switch is used to disconnect loads with high ( $>100\mu\text{F}$ ) output capacitances. If the load is connected directly to a battery or power supply using a conventional MOSFET/discrete solution, the tolerances of discrete components can create conditions where excessive droop can cause voltage rails to go out of regulation as the switch turns on and draws large currents. The FPF1038 / FPF1039 prevents this from occurring by integrating the necessary functionality into one chip, requiring less board space, reducing part counts, eliminating tolerance matching issues and additional design time to compensate the circuitry.

The FPF1038 / FPF1039 integrates a slew-rate controlled low-impedance MOSFET switch (21m $\Omega$  typical) and other features useful in embedded applications: ultra-low power consumption ( $<1\mu\text{A}$ ), load discharge path, ESD protection, GPIO/CMOS compatible-enable circuitry. The devices also features a 1.2V to 5.5V input voltage operating range which aligns with supply rails for the latest embedded processors, custom ASICs, and FPGAs used in these applications. The optimized slew-rate controlled turn-on characteristics with  $TR=2.7\text{mS}$  prevent voltage droop on supply rails with bulk capacitances as large as 200 $\mu\text{F}$ .

The FPF1038 / FPF1039 expands Fairchild's IntelliMAX™ portfolio to address the more dynamic power challenges of light industrial applications. The devices integrate functionality normally achieved through multi-chip solutions thereby providing designers off-the-shelf capability for their design needs, while reducing component count and increasing efficiency. Demonstration boards are available, by

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request only, from local Fairchild Semiconductor Sales Representatives.

Price: US \$.60 in 1,000 quantity pieces

Availability: samples available now - Delivery: 8-10 weeks ARO

For a datasheet in PDF format, please go to:

<http://www.fairchildsemi.com/ds/FP/FPF1038.pdf> [1]

To contact Fairchild Semiconductor about this product, please go to:

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For information on other products, design tools and sales contacts, please visit:

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