FAIRCHILD SEMICONDUCTOR®

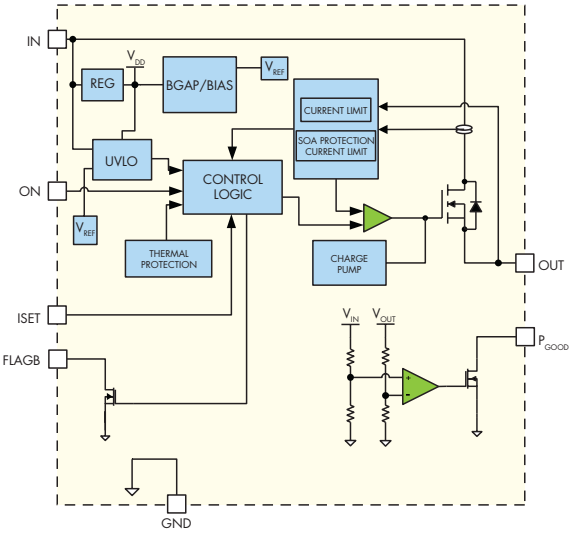
ACCUPOWER™ FPF270X:
2.8V-36V, 0.4A-2A Advanced Integrated Load Switches

Fairchild's Offering

Fairchild's FPF270x AccuPower™ family of integrated load switches supports the latest generations of industrial, telecom, computing and consumer devices. FPF270x is the first advanced integrated load switch to operate up to $36V_{IN}$, where traditional load switches typically operate up to $20V_{IN}$. The AccuPower family combines conventional MOSFET performance with a unique combination of protection, control and fault monitoring features to enhance and allow a faster time-to-market for end applications. The level of integration provides accurate, efficient and reliable protection while minimizing the amount of board space requirements.

Features & Benefits

- 2.8V to 36V wide input range
- Low R_{ON}: 88mΩ
- 0.4A~2A adjustable current limit
- Fixed slew rate control
- UVLO
- Power good
- 3mm x 3mm MLP & SO8 package options
- 2000V ESD protection



Functional Block Diagram

Applications

- Set-top boxes and consumer electronics
- Digital still cameras
- Hard disk drive raid arrays
- Industrial, telecom and medical Equipment
- Notebook computing
- Servers
- Inventory management terminals

Key Terminology

Blanking Time: The blanking time is a set period of time where faults are ignored to avoid unnecessary shutdown (i.e. due to transient events).

Fault Flag: The fault flag provides information as to the fault state of the device.

Over-Current Limit Protection (OCP): The over-current protection feature prevents excessive current and triggers one of three conditions:

- Auto Restart: the part will automatically shut down and attempt to restart at the defined "auto restart time" interval until the fault is cleared.
- Shutdown: the part will automatically shut down after the blanking time and requires a power cycle on the "ON" pin to clear the fault.
- Constant Current: the part will limit the current to the fixed or user-defined value.

Power Good (P_{GOOD}): The power good feature is an open-drain pin that provides a signal to indicate when V_{OUT} exceeds 90% of the input voltage.

Slew Rate Control, Soft Start: The slew rate control feature turns the switch on over a defined period of time, which limits the current through the device and into the load. When balanced with the load capacitance, this feature helps to prevent current spikes on the load and minimize voltage sags on the input.

Thermal Shutdown Protection: The thermal shutdown protection protects the part from the damage due to thermal events. The threshold is 140°C, with 30°C hysteresis.

UVLO (Under-Voltage Lock Out): The under-voltage lock out function will turn the switch off if the input voltage drops below a threshold, ensuring stable operation of the device.

Product Number	R_{ON} Typical (mΩ)	V_{IN} Min.	V_{IN} Max.	Slew Rate	Under-voltage Lockout	Thermal Shut-down	Fault Flag	Over-current Protection	Current Blanking	Fault Behavior			$P_{(GOOD)}$	On-Pin Behavior	Package
								Current Limit		Auto Restart	Shut-down	Constant Current			
FPF2700MX	88	2.8	36	X	X	X	X	0.4-2A	X	X			X	Low	SO-8
FPF2701MX	88	2.8	36	X	X	X	X	0.4-2A	X		X		X	Low	SO-8
FPF2702MX	88	2.8	36	X	X	X	X	0.4-2A				X	X	Low	SO-8
FPF2700MPX	88	2.8	36	X	X	X	X	0.4-2A	X	X			X	Low	MLP3x3
FPF2701MPX	88	2.8	36	X	X	X	X	0.4-2A	X		X		X	Low	MLP3x3
FPF2702MPX	88	2.8	36	X	X	X	X	0.4-2A				X	X	Low	MLP3x3