



ACE3677N

Precision Load Switch with Adjustable Current Limit

Description

ACE3677N is an ultra-low $R_{DS(ON)}$ power distribution switch with current limit to protect the power source from over current and short circuit conditions. It incorporates over temperature protection and reverse blocking function.

Features

- Input Voltage: 2.5V to 5.5V
- Extremely Low Power Path Resistance: 65m Ω (Typ.)
- Adjustable Current Limit Up to 2.0A
- Over Temperature Shutdown and Automatic Retry
- Reverse Blocking (No Body Diode)
- $\overline{\text{FAULT}}$ Output for Over Current and Fault Conditions
- Built-in Soft-start
- Compact Package Minimizes the Board Space: SOT-23-6/DFN2x2-6
- RoHS Compliant and Halogen Free

Applications

- USB 3.1 Application
- USB 3G Data Card
- USB Dongle
- Mini PCI Accessories
- USB Charger
- Public Place Multi-USB Charger
- PC Card Hot Swap Applications



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Absolute Maximum Ratings ^(Note1)

Parameter		Value
IN, OUT		7V
1SET, $\overline{\text{FAULT}}$, EN		7V
Power Dissipation, PD@TA=25°C	SOT23-6	0.94W
	DFN2*2-6	1.53W
Package Thermal Resistance ^(Note 2) SOT23-6	θ_{JA}	106.4°C/W
	θ_{JC}	41.7°C/W
Package Thermal Resistance ^(Note 2) DFN2*2-6	θ_{JA}	65.3°C/W
	θ_{JC}	16.2°C/W
Junction Temperature		150°C
Lead Temperature (Soldering, 10sec.)		260°C
Storage Temperature Range		-65°C to 150°C

Recommended Operating Conditions ^(Note 3)

Parameter	Value
IN,OUT	2.5V to 5.5V
All Other Pins	0V to 5.5V
Junction Temperature Range	-40°C to 125°C
Ambient Temperature Range	-40°C to 85°C

Note 1: Stresses beyond the “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only. Functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Note 2: θ_{JA} is measured in the natural convection at TA = 25°C on test board. Pin 2 of SOT23-6 packages is the case position for θ_{JC} measurement.

Note 3: The device is not guaranteed to function outside its operating conditions.



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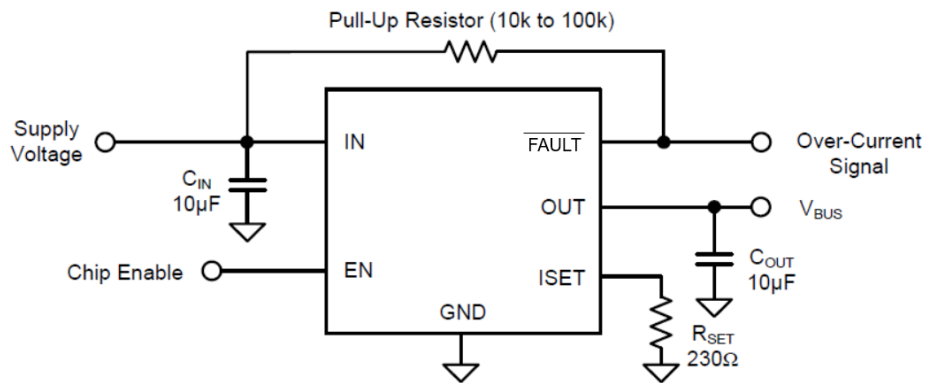
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Ordering information

ACE3677N XX + H

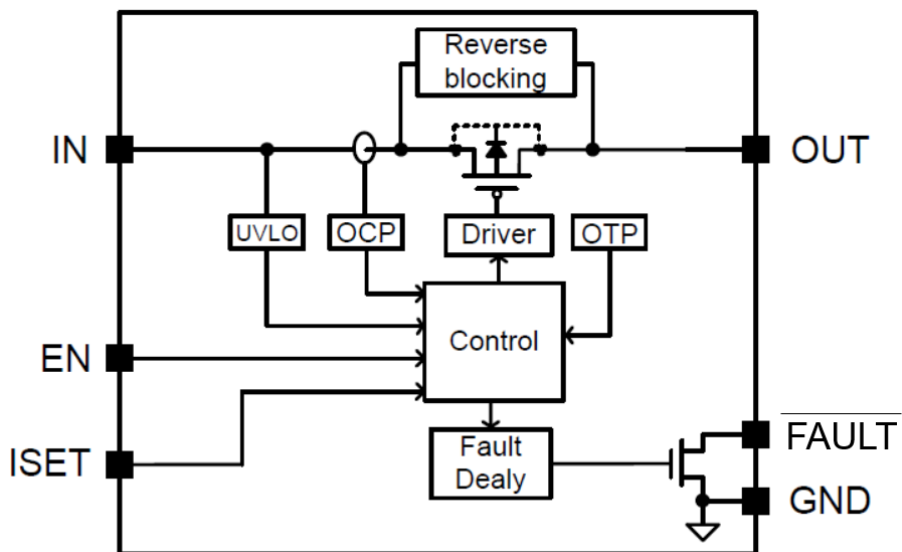
- └─ Halogen - free
- └─ Pb - free
- └─ GM: SOT-23-6
- └─ MN: DFN2*2-6L

Typical Applications



Note: If 1µF input cap will lead to large V_{in} voltage spike, it is strongly recommended to add additional 10 µF ceramic cap.

Block Diagram





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Notes

ACE does not assume any responsibility for use as critical components in life support devices or systems without the express written approval of the president and general counsel of ACE Technology Co., LTD. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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