ACE3U216Z

Programmable Current-Limited Load Switch

Description

The ACE3U216Z is a load switch which provides full protection to systems and loads which may encounter large current conditions. ACE3U216Z offers a 70mΩ current-limited switch which can operate over an input voltage range of 2.1-6V. The current limit can be externally programmed by a precision resistor, ranges from 75mA to 2.2A. Switch control is executed by a logic input (EN) capable of interfacing directly with low voltage control signals. Current is prevented from flowing when the switch is off or the output voltage is higher than the input voltage. ACE3U216Z also features thermal shutdown protection which shuts off the switch to prevent damage to the part when a continuous over-current condition causes excessive heating. When the switch current reaches the current limit, the part operates in a constant-current mode to prohibit excessive currents from causing damage. The ACE3U216Z will not turn off after a current limit fault but will rather remain in the constant current mode indefinitely. The nFAULT output asserts low during over-current and reverse-voltage conditions.

Features

- Up to 2.2A Max Load current
- Accurate Current-Limit Threshold at 1.7A: +/-5%
- Input Operating Voltage Range: 2.1V ~ 6V
- 7.5V Input Standoff Voltage
- 6.1V OVP
- Programmable Current-Limit: 75mA to 2200mA
- Fault Flag Output: nFAULT Pin
- Thermal Shutdown, UVLO protection
- Reversed Input-Output Current blocking
- Fast Over-Current Response
- Tiny Package: SOT23-5, SOT23-6, DFN2*2-6L

Application

- USB Ports and Hubs
- VOIP Phones
- Digital TVs
- Set-Top Boxes

Absolute Maximum Rating

Parameter			Value
IN, OUT Voltage to GND			-0.3V to 7.5V
All other Pin Voltage to GND			-0.3V to 7.5V
OUT to ground current			Internally limited
Junction Temperature			150°C
Storage Temperature Range			-55°C to 150°C
Thermal Resistance	θ_{JC}	SOT23-5	90°C /W
		SOT23-6	90°C /W
		DFN2*2-6L	30°C /W
	θ_{JA}	SOT23-5	180°C /W
		SOT23-6	180°C /W
		DFN2*2-6L	80°C /W
Lead Temperature (Soldering, 10sec)			260°C

Note: Exceeding these limits may damage the device. Exposure to absolute maximum rating conditions for long periods may affect device reliability.

Recommended Operating Conditions

Parameter	Value
Ambient Temperature Range	-40°C to 85°C
Junction Temperature Range	-40°C to 125°C

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

Ordering information

ACE3U216Z XX + H

- Halogen - free
- Pb - free
- BN: SOT-23-5
  GM: SOT-23-6
  MN: DFN2*2-6L

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 sued 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 shoes 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.