ACE370A

Current Limited Load Switch

Description

The ACE370A is a current limited P-channel MOSFET power switch designed for high-side load switching applications. This switch operates with inputs ranging from 2.5V to 5.5V, making it ideal for both 3V and 5V systems. An integrated current-limiting circuit protects the input supply against large currents which may cause the supply to fall out of regulation. The ACE370A is also protected from thermal overload which limits power dissipation and junction temperatures. It can be used to control loads that require up to 1A.Current limit threshold is programmed with a resistor from SET to ground.

Features

- Low quiescent current: 9μA(Typ.)
- Shutdown Current: <1μA
- Programmable Over-Current Threshold
- Fast Transient Response: 400ns Response to Short Circuit
- Input Voltage: 2.5V~5.5V
- Low $R_{DS(ON)}$ Internal Switches: 145mΩ
- Only 2.5V Needed for ON/OFF Control
- Under-Voltage Lockout
- Thermal Fault Protection
- 4kV ESD Rating
- Temperature Range: -40°C to +85°C

Application

- Hot-Plug Power Supplies
- Battery-Charger Circuits
- Motherboard USB Power Switch
- Notebook Computers
- Personal Communication Devices
- USB Device Power Switch

Absolute Maximum Rating

Parameter	Symbol	Ratings	Units
Input Voltage	V_{IN}	-0.3~ 6	V
CE, SET, OUT Voltage	V_{CE},V_{SET},V_{OUT}	-0.3~V_{IN}+0.3	V
Maximum Continuous Switch Current	I_{MAX}	2	A
Power Dissipation	Pd	400	mW
Operating Temperature Range	T_{opr}	-40~+85	℃
Junction Temperature	T_j	125	℃
Storage Temperature	T_{stg}	-40~+125	℃
ESD Rating2 - HBM 4000 V	V_{ESD}	4000	V
Soldering Temperature & Time	T_{solder}	260℃, 10s	

Ordering information

ACE370A X XX + H

- H: Halogen - free
- Pb - free
- BN: SOT-23-5
- H: High Active
  L: Low Active

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 Electronics 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.