



ACE73542E

42V Input Standoff Voltage, 1.5A Step-Down Converter

Description

The ACE73542E is a wide input range, high-efficiency, and high frequency DC-to-DC step-down switching regulator, capable of delivering up to 1.5A of output current. With a fixed switching frequency of 650KHz, this current mode PWM controlled converter allows the use of small external components, such as ceramic input and output caps, as well as small inductors.

ACE73542E also employs a proprietary control scheme that switches the device into a power save mode during light load, thereby extending the range of high efficiency operation. An OVP function protects the IC itself and its downstream system against input voltage surges. With this OVP function, the IC can stand off input voltage as high as 42V, making it an ideal solution for industrial applications such as smart meters as well as automotive applications. In automotive systems, power comes from the battery, with its voltage typically between 9V and 24V. Including cold crank and double battery jump-starts, the minimum input voltage may be as low as 4V and the maximum up to 36V, with even higher transient voltages. With these high input voltages, linear regulators cannot be used for high supply currents without overheating the regulator. Instead, high efficiency switching regulators such as ACE73542E must be used to minimize thermal dissipation. ACE73542E is available in a space-saving SOT-23-6 package.

Features

- Wide Input Operating Range from 4V to 38V
- Standoff Input Voltage: 42V
- High Efficiency at 12V In 5V Out: Up to 91%
- Capable of Delivering 1.5A
- High Efficiency PFM mode at light load
- Thermal shutdown and UVLO
- No External Compensation Needed
- Current Mode control
- Logic Control Shutdown

Application

- Smart Meters
- Automotive Applications
- Industrial Applications



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Absolute Maximum Rating

Parameter		Value
IN Voltage		−0.3V to 42V
SW, EN Voltage		−0.3V to VIN+0.3V
BST to SW Voltage		−0.3V to 6V
FB Voltage		−0.3V to 6V
SW to Ground Current		Internally limited
Junction Temperature		150°C
Operating Temperature Range		−40°C to 85°C
Storage Temperature Range		−55°C to 150°C
Thermal Resistance	θ_{JA}	220°C/W
	θ_{JC}	110°C/W

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

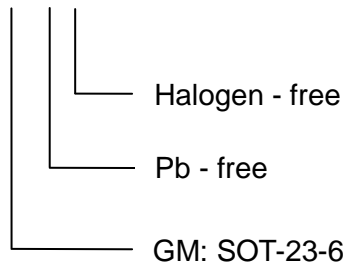


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Ordering Information

ACE73542E XX + H





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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 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 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.

ACE Technology Co., LTD.
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