



ACE7351Z

42V Input Voltage, 0.6A, 2MHz Synchronous Step-Down Converter

Description

ACE7351Z is a wide input range, high-efficiency synchronous step-down switching regulator, capable of delivering up to 0.6A of output current. It adopts an adaptive COT control scheme that enables very fast transient response and provides a very smooth transition when the output varies from light load to heavy load. During light load, ACE7351Z goes into a PFM mode that saves switching loss achieving high efficiency. The adaptive COT control also maintains a constant switching frequency across line and load. An OVP function protects the IC itself and its downstream system against input voltage surges. With this OVP function, 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 42V, 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 ACE7351Z must be used to minimize thermal dissipation. ACE7351Z is available in SOT23-6 Packages.

Features

- 0.1% Output Voltage Ripple
- Wide Input Operating Range from 4V to 42V
- High Efficiency at 24V In 12V Out: Up to 87%
- High Efficiency PFM mode at light load
- Capable of Delivering 0.6A
- 2MHz Fixed Switching Frequency
- No External Compensation Needed
- Adaptive COT Control
- Logic Control Shutdown
- Thermal shutdown and UVLO
- Pb Free, RoHS and REACH Compliant
- Halogen Free and “Green” Device

Application

- Smart Meters
- Industrial Applications
- Automotive Applications



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Absolute Maximum Rating

Parameter		Value
IN Voltage		-0.3V to 42V
SW, EN Voltage		-0.3V to VIN+0.3
BST Voltage		-0.3V to SW+6V
FB Voltage		-0.3V to 6V
SW to ground current		Internally limited
Junction Temperature Range		150°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.

Recommended Operating Conditions

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

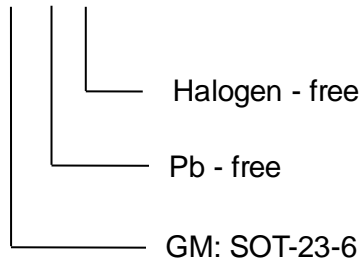


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Ordering information

ACE7351Z 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 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.

ACE Technology Co., LTD.
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