



# ACE7352Z

## 1A, 2MHz, Synchronous Step-Down Converter

### Description

ACE7352Z is a wide input range, high-efficiency synchronous step-down switching regulator, capable of delivering up to 1A 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, ACE7352Z 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. 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 ACE7352Z must be used to minimize thermal dissipation.

### Features

- High Efficiency PFM mode at light load
- Wide Input Operating Range from 4V to 36V
- Input Standoff Voltage: 38V
- Capable of Delivering 1A
- 2MHz Switching Frequency
- 0.1% Output Voltage Ripple
- No External Compensation Needed
- Adaptive COT Control
- Logic Control Shutdown
- Thermal shutdown and UVLO
- Available in SOT-23-6 Package

### Applications

- Industrial Applications
- Automotive Applications
- Smart Meters



# ACE7352Z

## 1A, 2MHz, Synchronous Step-Down Converter

### Absolute Maximum Ratings

Parameter		Value
IN Voltage		-0.3V to 38V
SW, EN Voltage		-0.3V to VIN+0.3V
BST Voltage		-0.3V to SW+6V
FB Voltage		-0.3V to 6V
SW to Ground Current		Internally limited
Junction Temperature		150°C
Storage Temperature Range		-55°C to 150°C
Thermal Resistance	$\theta_{JA}$	220°C/W
	$\theta_{JC}$	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

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

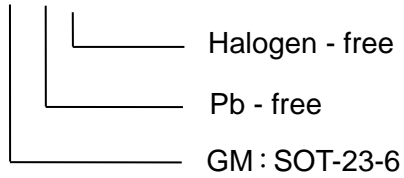


# ACE7352Z

1A, 2MHz, Synchronous Step-Down Converter

## Ordering information

ACE7352Z XX + H





# ACE7352Z

## 1A, 2MHz, Synchronous Step-Down Converter

### 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.  
<http://www.ace-ele.com/>