



# ACE7260T

## 1.0MHz, 2A Synchronous Step-Down DC/DC Converter

### Description

The ACE7260T is a 1.0MHz constant frequency, current mode step-down converter. It is ideal for portable equipment requiring very high current up to 2A from single-cell Lithium-ion batteries while still achieving over 90% efficiency during peak load conditions. The ACE7260T also can run at 100% duty cycle for low dropout operation, extending battery life in portable systems while light load operation provides very low output ripple for noise sensitive applications. The ACE7260T can supply up to 2A output load current at 5V input voltage and the output voltage can be regulated as low as 0.6V. The high switching frequency minimizes the size of external components while keeping switching losses low. The internal slope compensation setting allows the device to operate with smaller inductor values to optimize size and provide efficient operation. The ACE7260T is offered in SOT-23-5 package, and is available in an adjustable version.

This device offers two operation modes, PWM control and PFM Mode switching control, which allows a high efficiency over the wider range of the load.

### Features

- High Efficiency: Up to 95% (@3.3V)
- 1.0MHz Constant Frequency Operation
- 2A Output Current
- No Schottky Diode Required
- 2.3V to 6.0V Input Voltage Range
- Output Voltage as Low as 0.6V
- PFM Mode for High Efficiency in Light Load
- 100% Duty Cycle in Dropout Operation
- Low Quiescent Current: 40 $\mu$ A
- Short Circuit Protection
- Thermal Fault Protection
- Inrush Current Limit and Soft Start
- Input Over Voltage Protection (OVP)
- <1 $\mu$ A Shutdown Current
- SOT23-5 Package

### Application

- Cellular and Smart Phones
- Wireless and DSL Modems
- PDAs
- Portable Instruments
- Digital Still and Video Cameras
- PC Cards



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### Absolute Maximum Ratings

Parameter	Value
VIN Pin Voltage	-0.3 V to 6.5V
LX Pin Voltage	-0.3 V to 6.5V
EN Pin and FB Pin Voltage	-0.3 V to 6.5V
Operating Ambient Temperature Range T <sub>A</sub>	-40°C to 85°C
Operating Maximum Junction Temperature (Note) T <sub>J</sub>	160°C
Storage Temperature Range T <sub>STG</sub>	-65°C to 150°C
Lead Temperature (Soldering 10 Sec.)	260°C
Power Dissipation	600mW

(Assume no Ambient Airflow, no Heat sink)

Absolute Maximum Ratings are those values beyond which the life of a device may be impaired.

Note: T<sub>J</sub> is calculated from the ambient temperature T<sub>A</sub> and power dissipation P<sub>D</sub> according to the following formula:

$$T_J = T_A + (P_D) \times (250^\circ\text{C/W}).$$



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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.

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