# ACE7203D

**800mA, 2V-6.5V Input,1.5MHz Synchronous Step-Down Converter**

## Description

The ACE7203D is a constant frequency, current mode step-down converter. The device integrates a main switch and a synchronous rectifier for high efficiency without an external Scotty diode. It is ideal for powering portable equipment that runs from a single cell Lithium-Ion (Li+) battery. The output voltage can be regulated as low as 0.6V. The ACE7203D can also run at 100% duty cycle for low dropout operation, extending battery life in portable system. 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.

The ACE7203D is offered in a low profile 5-pin, SOT package, and is available in an adjustable version.

## Features

- High efficiency :Up to 96%
- 1.5MHz Constant Frequency Operation
- 800mA Output Current
- No Scotty Diode Required
- 2V to 6.5V 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: 20uA
- Slope Compensated Current Mode Control for Excellent Line and Load Transient Response
- Short Circuit Protection
- Thermal Fault Protection
- Inrush Current Limit and Soft Start
- <1μA Shutdown Current
- SOT23-5 package

## Application

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

## Absolute Maximum Ratings(1)

| Parameter | | Symbol | Ratings | Units |
|---|---|---|---|---|
| Input Voltage | | $V_{IN}$ | $V_{SS}$-0.3~VSS+7.5 | V |
| CE,SW,FB/VOUT Voltage | | | $V_{SS}$-0.3~VIN+0.3 | V |
| Power Dissipation | SOT23-5 | $P_D$ | 400 | mV |
| Operating Temperature | | $T_{opr}$ | -40~+85 | ℃ |
| Junction Temperature | | $T_j$ | 150 | ℃ |
| Storage Temperature | | $T_{stg}$ | -40~+125 | ℃ |
| Soldering Temperature & Time | | $T_{stg}$ | 260℃, 10s | |
| ESD HBM(Human Body Mode) | | $T_{solder}$ | 2 | kV |
| ESD MM(Machine Mode) | | | 200 | V |

## Ordering information

ACE7203D XX+ H

- Halogen - free
- Pb - free
- BNA：SOT-23-5A
  BNB：SOT-23-5B

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.