ACE7563ZA

High Efficiency Synchronous Step-Down Converter

Description

ACE7563ZA is a wide input range, high-efficiency and high frequency DC-to-DC step-down switching regulator, capable of delivering up to 3A 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. The adaptive COT control also maintains a constant switching frequency across line and load. The IC can stand off input voltage as high as 18V, making it an ideal solution for industrial applications such as LCD TV, Set Top Box, Portable TV, etc.

Features

- High Efficiency PFM mode at light load (ACE7563ZATF and ACE7563ZADF)
- Forced PWM Mode (ACE7563ZATW)
- Capable of Delivering 3A
- Wide Input Range: 4V~18V
- Adaptive COT Control
- Thermal Shutdown and UVLO
- Ultra-fast load transient response
- Low Rdson Internal power FETs
- No External Compensation Needed
- Available in SOT-563 Package

Application

- Set Top Box
- xDSL Modem
- LCD TV

Absolute Maximum Ratings

Parameter		Value
IN, EN Voltage		–0.3V to 18V
SW Voltage		-0.3V(-5V for <10nS) to 18V
BST Voltage		–0.3V to SW+6V
FB Voltage		–0.3V to 6V
Junction Temperature		150°C
Storage Temperature Range		–55°C to 150°C
Thermal Resistance	θJA	68°C/W
	θJC	25°C/W
Lead Temperature (Soldering 10sec)		260°C
ESD HBM (Human Body Mode)		2 KV
ESD CDM (Charged Device Mode)		1 KV

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

Ordering Information

ACE7563ZA XX XX + H

- Halogen - free
- Pb - free
- KG: SOT-563
- V_{FB}:
  TF: 0.6V (PFM Mode at Light Load)
  TW: 0.6V (Forced PWM Mode)
  DF: 0.806V (PFM Mode at Light Load)

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 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.