ACE7266N

High Efficiency, 500kHz, 3A, 18V Input Synchronous Step Down Regulator

Description

The ACE7266N is a fully integrated, high-efficiency 3A synchronous rectified step-down converter. The ACE7266N operates at high efficiency over a wide output current load range.

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 ACE7266N requires a minimum number of readily available standard external components and is available in a 6-pin TSOT23 ROHS compliant package.

Features

- low $R_{DS(ON)}$ for internal switches (top/bottom): 80mΩ/40mΩ
- 4.5-18V input voltage range
- 3A output current capability
- 500 kHz switching frequency
- Instant PWM architecture to achieve fast transient responses.
- Cycle-by-cycle peak current limitation
- Internal soft start limits the inrush current
- ±2% 0.6V reference
- TSOT23-6 package

Application

- Set Top Box
- Portable TV
- Access Point Router
- DSL Modem
- LCD TV

Absolute Maximum Ratings (Note 1)

Parameter		Value
Supply Input Voltage		18V
Enable Voltage		VIN+0.3V
FB Voltage		4V
Power Dissipation, PD @ TA = 25°C		1W
Package Thermal Resistance (Note 2)	θ_{JA}	100°C /W
	θ_{JC}	11.2°C /W
Junction Temperature Range		150°C
Lead Temperature (Soldering, 10 sec.)		260°C
Storage Temperature Range		-55°C to 150°C

Note 1: Stresses beyond the “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only. Functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

Note 2: θ_{JA} is measured in the natural convection at TA = 25°C on a low effective 4-layer thermal conductivity test board of JEDEC 51-3 thermal measurement standard. Pin2 of TSOT23-6 packages is the case position for θ JC measurement.

Recommended Operating Conditions (Note 3)

Parameter	Value
Supply Input Voltage	4.5V to 18V
Junction Temperature Range	-40°C to 125°C
Ambient Temperature Range	-40°C to 85°C

Note 3: The device is not guaranteed to function outside its operating conditions

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.