



ACE7330N

High Efficiency Fast Response, 3A, 30V Input Synchronous Step-Down Regulator

Description

The ACE7330N develops a high efficiency synchronous step-down DC/DC converter capable of delivering 3A load current. The ACE7330N operates over a wide input voltage range from 4.5V to 30V and integrates main switch and synchronous switch with very low $R_{DS(ON)}$ to minimize the conduction loss. The ACE7330N adopts peak current control scheme. The switching frequency is adjustable from 500kHz to 2.5MHz using an external resistor. The device also features ultra-low quiescent operating to achieve high efficiency under light load. And the internal soft-start limits inrush current during power on. ACE7330N is available in TSOT23-8 package.

Features

- Low $R_{DS(ON)}$ for Internal Switches (Top/Bottom): 110/70 m Ω
- 4.5-30V Input Voltage Range
- Internal Compensation
- Internal 1ms Soft-start Limits the Inrush Current
- Adjustable Switching Frequency Range: 500kHz to 2.5MHz
- 3A Output Current Capability
- 1.5% 0.6V Reference
- Low Quiescent Current
- Cycle-by-cycle Peak Current Limit
- Short Circuit Protection
- Thermal Shutdown and Auto Recovery
- RoHS Compliant and Halogen Free
- Compact Package: TSOT23-8

Application

- LCD-TV
- SetTop Box
- Notebook
- Storage
- High Power AP Router
- Networking



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Absolute Maximum Ratings (Note 1)

Parameter	Value	
IN to GND	-0.3V to 40V	
LX, FB, EN, FS to GND	-0.3V to 40V	
BS-LX	-0.3V to 4V	
Power Dissipation, P_D @ $T_A = 25^\circ\text{C}$	2W	
Package Thermal Resistance (Note 2)	θ_{JA}	60.2°C/W
	θ_{JC}	11.2°C/W
Junction Temperature Range	-40°C to 150°C	
Ambient Temperature Range	-40°C to 105°C	
Lead Temperature (Soldering, 10 sec.)	260°C	
Storage Temperature Range	-65°C to 150°C	

Recommended Operating Conditions (Note 3)

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

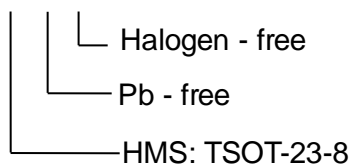
Note 1: Stresses beyond the “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only. Functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specification is not implied. Exposure to absolute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

Note 2: θ_{JA} is measured in the natural convection at $T_A = 25^\circ\text{C}$ on a low effective 4-layer thermal conductivity test board of JEDEC 51-3 thermal measurement standard. Pin 2 of TSOT-23-8 packages is the case position for θ_{JC} measurement.

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

Ordering Information

ACE7330N XX + H





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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 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 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.
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