



ACE7353N

High Efficiency, 3A 40V Input Synchronous Step-Down Regulator

Description

ACE7353N develops a high efficiency synchronous step-down DC-DC converter capable of delivering 3A load current. The ACE7353N operate over a wide input voltage range from 4.5V to 40V and integrate main switch and synchronous switch with low $R_{DS(ON)}$ to minimize the conduction loss.

The ACE7353N 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.

Features

- Low RDS(ON) for Internal Switches
(Top/Bottom):110mΩ/70mΩ
- 4.5-40V 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 Limitation
- Short Circuit Protection
- Thermal Shutdown and Auto Recovery
- RoHS Compliant and Halogen Free
- Compact Package: TSOT23-8

Applications

- LCD-TV
- Set Top Box
- Notebook
- Storage
- High Power AP Router
- Networking



ACE7353N

High Efficiency, 3A 40V Input Synchronous Step-Down Regulator

Absolute Maximum Ratings (Note1)

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

Recommended Operating Conditions (Note 3)

Parameter	Value
Supply Input Voltage	4.5V to 40V

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



ACE7353N

High Efficiency, 3A 40V Input Synchronous Step-Down Regulator

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 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.