



# ACE7356N

## High Efficiency, 85V Input 0.6A Asynchronous Step Down Regulator

### Description

ACE7356N develops a high efficiency, current mode adaptive constant off time controlled, and asynchronous step-down DC/DC converter capable of delivering 0.6A output current. The ACE7356N operates over a wide input voltage range from 4.5V to 85V and integrates main switch with very low  $R_{DS(ON)}$  to minimize the conduction loss.

### Features

- Low  $R_{DS(ON)}$  for internal N-channel Power FET: 1 $\Omega$
- 4.5-85V Input Voltage Range
- 0.6A Output Current Capability
- 200kHz Pseudo Constant Switching Frequency
- Internal Soft-start Limits the Inrush Current
- Hic-cup Mode Output Short Circuit Protection
- EN ON/OFF Control with Accurate Threshold
- Cycle by Cycle Peak Current Limit
- 0.6V $\pm$ 1 % Reference Voltage
- TSOT23-6 Package

### Applications

- Non-isolated Telecommunication Buck Regulator
- Secondary High Voltage Post Regulator
- Automotive Systems
- Electric Bicycle



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### Absolute Maximum Ratings (Note 1)

Parameter	Value	
Supply Input Voltage	85V	
BST to SW Voltage	6V	
All Other Pins	$V_{IN}+0.3V$	
Power Dissipation, $P_D@T_A=25^\circ C$	1W	
Package Thermal Resistance (Note 2)	$\theta_{JA}$	100°C/W
	$\theta_{JC}$	25°C/W
Junction Temperature	150°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:  $\theta_{JA}$  is measured in the natural convection at  $T_A=25^\circ C$  on a two-layer Silergy Evaluation Board.

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 85V
Junction Temperature Range	-40°C to 125°C
Ambient Temperature Range	-40°C to 85°C



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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 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.

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