# ACE72318Z

**18V, 3A, High Efficiency Synchronous Step-Down Converter**

## Description

ACE72318Z 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. An OVP function protects the IC itself and its downstream system against input voltage surges. With this OVP function, the IC can stand off input voltage as high as 24V, making it an ideal solution for industrial applications such as LCD TV, Set Top Box, Portable TV, etc.

## Features

- Wide Input Range: 4V-18V
- Adaptive COT Control
- Ultra-Fast Load Transient Response
- Forced PWM Mode
- 1MHz Switching Frequency
- Low $R_{DSON}$ Internal Power FETs
- Capable of Delivering 3A
- No External Compensation Needed
- Thermal Shutdown and UVLO
- Available in SOT23-6 Package
- Pb Free, RoHS and REACH Compliant
- Halogen Free and “Green” Device

## Application

- LCD TV
- Set Top Box
- xDSL Modem

## Absolute Maximum Ratings

| Parameter | | Value |
|---|---|---|
| IN, EN Voltage | | –0.3V to 24V |
| SW Voltage | | -0.3V (1) to 24V (2) |
| 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 |
| JESD51-3(3) | $\theta_{JA}$ | 180°C/W |
| | $\theta_{JC}$ | 90°C/W |
| EVB (4) | $\theta_{JA}$ | 80°C/W |
| | $\theta_{JC}$ | 30°C/W |
| Power Dissipation (5) | | 1.5W |
| Lead Temperature (Soldering 10ssec) | | 260°C |
| ESD HBM (Human Body Mode) | | 2KV |
| ESD CDM (Charged Device Mode) | | 1KV |

Note:

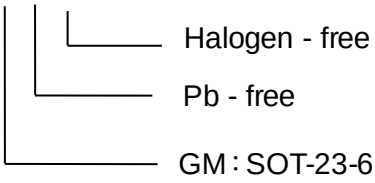
1. -5V for <10nS.
2. 23V for <10nS.
3. These values are calculated in accordance with JESD51-3 and simulated on a JEDEC board, they are only valid for comparison between different packages, cannot be used for thermal design.
4. Measured on 1OZ two-layer ETA evaluation board ,$T_A$=25°C ; the top of SOT23-6 package is the position where $\theta_{JC}$ measured.
5. Power Dissipation is calculated by PD=(Tjmax-Ta)/ $\theta_{JA}$.

## Recommended Operating Conditions

| Parameter | Value |
|---|---|
| Ambient Temperature Range | -40°C to 85°C |
| Junction Temperature Range | -40°C to 125°C |

## Ordering information

ACE72318ZXX+ H



Notes

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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.