



ACE72664N

High Efficiency, Fast Response, 4.0A, 18V Input Synchronous Step Down Regulator

Description

The ACE72664N is a high efficiency 500kHz synchronous step-down DC/DC regulator, which is capable of delivering up to 4A load current. It can operate over a wide input voltage range from 4.2V to 18V and integrate main switch and synchronous switch with very low $R_{DS(ON)}$ to minimize the conduction loss. The ACE72664N adopts the instant PWM architecture to achieve fast transient responses for high step down applications and high efficiency at light loads. In addition, it operates at pseudo-constant frequency of 500kHz to minimize the size of inductor and capacitor.

Features

- Low $R_{DS(ON)}$ for Internal Switches (Top/Bottom): 55m Ω /36m Ω
- 4.2-18V Input Voltage Range
- 4A Output Current Capability
- 500kHz Switching Frequency Minimize the External Components
- Stable with 22 μ F C_{OUT} and 0.68 μ H Inductor
- Instant PWM Architecture to Achieve Fast Transient Responses
- Internal Soft-Start Limits the Inrush Current
- Cycle-by-cycle Peak/Valley Current Limitation
- Hic-cup Mode Output Short Circuit Protection
- Thermal Shutdown with Auto Recovery
- Output Auto Discharge Function
- Compact Package: TSOT-23-6

Applications

- Set Top Box
- Portable TV
- DSL Modem
- LCD TV
- IP CAM
- Networking



ACE72664N

High Efficiency, Fast Response, 4.0A, 18V Input Synchronous Step Down Regulator

Absolute Maximum Ratings (Note 1)

Parameter		Value
Supply Input Voltage		-0.3 to 19V
LX, EN Voltage		-0.3V to $V_{IN} + 0.3V$
FB, BS-LX Voltage		-0.3 to 4V
Power Dissipation, P_D @ $T_A = 25^\circ C$	TSOT-23-6	2.0 W
Package Thermal Resistance <small>(Note 2)</small>	θ_{JA}	50°C/W
	θ_{JC}	6.3°C/W
Junction Temperature Range		-40 to 150°C
Lead Temperature (Soldering, 10 sec.)		260°C
Storage Temperature Range		-65 to 150°C
Dynamic LX Voltage in 10ns Duration <small>(Note3)</small>		IN+3V to GND-5V

Recommended Operating Conditions (Note 3)

Parameter	Value
Supply Input Voltage	4.2 to 18V
Junction Temperature Range	-40 to 125°C
Ambient Temperature Range	-40 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.

2: θ_{JA} is measured in the natural convection at $T_A = 25^\circ C$ on a 2OZ four-layer Silergy evaluation board. Paddle of TSOT-23-6 package is the case position for ACE72664N θ_{JC} measurement.

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

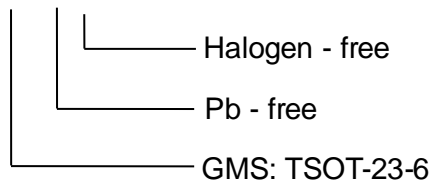


ACE72664N

High Efficiency, Fast Response, 4.0A, 18V Input Synchronous Step Down Regulator

Ordering Information

ACE72664N XXX + H





ACE72664N

High Efficiency, Fast Response, 4.0A, 18V 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 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.
<http://www.ace-ele.com/>