



ACE7225D

2A, 4.5V~18V Input, 500KHz Synchronous Step-Down Converter

Description

The ACE7225D is a constant frequency, current mode step-down converter. The device integrates a main switch and a synchronous rectifier for high efficiency without an external Schottky diode. It is ideal for powering portable equipment that runs from a single cell Lithium-Ion (Li+) battery. The output voltage can be regulated as low as 0.6V. The ACE7225D can also run at 100% duty cycle for low dropout operation, extending battery life in portable system. This device offers two operation modes, PWM control and PFM Mode switching control, which allows a high efficiency over the wider range of the load.

The ACE7225D is offered in a low profile 6-pin, SOT package, and is available in an adjustable version.

Features

- High Efficiency: Up to 96%
- 500KHz Constant Frequency Operation
- 2A Output Current
- No Schottky Diode Required
- 4.5V to 18V Input Voltage Range
- Output Voltage as Low as 0.6V
- Slope Compensated Current Mode Control for Excellent Line and Load Transient Response
- Integrated internal compensation
- Stable with Low ESR Ceramic Output Capacitors
- Over Current Protection with Hiccup-Mode
- Thermal Fault Protection
- Inrush Current Limit and Soft Start
- SOT23-6 Package
- -40°C to +85°C Temperature Range

Application

- Distributed Power Systems
- Digital Set Top Boxes
- Flat Panel Television and Monitors
- Wireless and DSL Modems
- Notebook Computer



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Absolute Maximum Ratings

Parameter		Symbol	Ratings	Unit
Input Voltage		V_{IN}	-0.3~+20	V
EN Voltage		V_{EN}	-0.3~+20	V
FB Voltage			-0.3~+6	V
SW Voltage			-0.3~ $V_{IN}+0.5$	V
BS Voltage			$V_{SW}-0.3 \sim V_{SW}+5$	V
Power Dissipation	SOT-23-6	P_D	400	mW
Thermal Resistance				
Operating Temperature		T_{opr}	-40~+85	°C
Junction Temperature		T_j	150	°C
Storage Temperature		T_{stg}	-40~+125	°C
Soldering Temperature & Time(10 sec)		T_{solder}	260	°C
ESD	Human Body Model -(HBM)		2	kV
	Machine Model- (MM)		200	V



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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.

ACE Technology Co., LTD.
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