



ACE73655Y

5.5V, 6A, 1.2MHz, High-Efficiency Buck Converter

Description

The ACE73655Y is a monolithic, step down, switch mode converter with internal power MOSFETs. It can provide continuous output current up to 6A from 2.8V to 5.5V input voltage, and has good load and line regulation capability. The output voltage can be adjusted below 0.6V.

Constant on time control provides a fast-transient response and simplifies loop stability. Fault state protections include cycle-by-cycle current limiting and thermal shutdown.

The ACE73655Y is housed in a small QFN2*3-12 package and requires only a minimal number of readily available, standard, external components.

Features

- Operating Input Range: 2.8V to 5.5V
- Quiescent Current: 40 μ A
- Up to 6A Output Current
- Fixed Switching Frequency: 1.2MHz
- Adjustable Output from 0.6V
- 1.5ms Internal SS Time with Pre-Bias Startup
- 20m Ω and 12m Ω Internal Power MOSFETs
- 100% Duty Cycle in Dropout
- 1% Feedback Accuracy
- External Mode Control
- External VCON Control
- Cycle-by-Cycle Over Current Protection
- Short Circuit Protection with Hiccup Mode
- Stable with Low-ESR Output Ceramic Capacitors
- Thermal Shutdown
- Output Discharge Function
- Package: QFN2*3-12

Application

- Battery-Powered Devices
- Storage (SSD, HDD)
- Portable Instruments



ACE73655Y

5.5V, 6A, 1.2MHz, High-Efficiency Buck Converter

Recommended Work Conditions

Parameter		Rating	Unit
Supply Voltage	V_{IN}	2.8 to 5.5	V
Output Voltage	V_{OUT}	0.6 to 5.5	V
Operating Junction Temperature Range		-40 to 125	°C
Package Thermal Resistance	Θ_{JA}	70	°C/W
	Θ_{JC}	15	

The Recommended Operating Conditions table defines the conditions for actual device operation. Recommended Operating conditions are specified to ensure optimal performance to the datasheet specifications.

Absolute Maximum Ratings

Parameter		Rating	Unit
Supply Voltage	V_{IN}	6.0	V
	V_{SW}	-0.3 (-3V for <10ns) to 6.0 (8V for <10ns)	V
All Other Pins		-0.3 to 6.0	V
Junction Temperature Range		150	°C
Lead Temperature Range		260	°C
Continuous Power Dissipation ($T_A = 25^\circ\text{C}$)		1.78	W

Stresses beyond those listed under “Absolute Maximum Rating” may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other condition beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

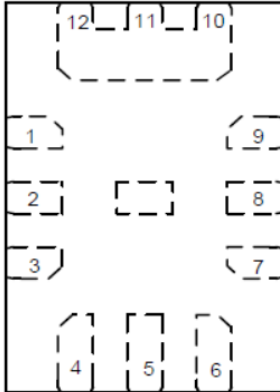


ACE73655Y

5.5V, 6A, 1.2MHz, High-Efficiency Buck Converter

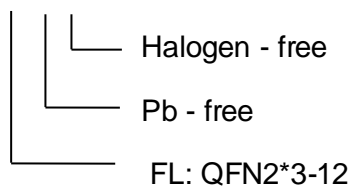
Packaging Type

QFN2*3-12



Ordering information

ACE7355Y XX+ H





ACE73655Y

5.5V, 6A, 1.2MHz, High-Efficiency Buck Converter

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.
<http://www.ace-ele.com/>