

4.7V to 17V Input, 5A Synchronous Buck Regulators with AOT Control

Features

- Wide VIN Range: 4.7V to 17V
- Maximum Continuous Output Current: 5A
- Factory fixed Options for Output Voltage from 0.64V to 5.5V with 40mV step, available by request
- Integrated High / Low-Side FETs (65mΩ / 35mΩ)
- Advanced Adaptive On-Time Control
- Fast Transient Response
- Open Drain Power Good Indicator
- $\pm 0.5\%$ Feedback Voltage Reference
- Zero Shutdown Supply Current
- 50μA Non-Switching Operating Quiescent Current
- 80μA No Load Operating Quiescent Current
- High Efficiency in Light Load and Heavy Load.
- Factory 300kHz, 500kHz, 800kHz, and 1MHz Switching Frequency options available by request
- Internal Soft-Start
- Factory Forced CCM (FCCM) or automatic CCM/PFM (Auto-Skip) Options
- Active discharge Mode option
- Built-in Cycle-by-Cycle Current Limit, Short Circuit Protection, Input UVLO, Output Under-Voltage Protection, Output Over-Voltage Protection, and Thermal Shutdown Protection
- Small 20-bump WLCSP (1.7mm x 2.0mm) Package

Description

KTB8370 is 5A, 17V synchronous buck regulators with integrated high-side and low-side power FETs. The device operates over a wide input voltage range to support a variety of applications with input voltage from regulated 5V and 12V power rails and multicell batteries.

KTB8370 employs Kinetics' proprietary advanced adaptive on-time (AOT) control for fast transient response and high output voltage accuracy. This control technique eliminates external loop compensation network and allows the use of ceramic output capacitors without ripple-generating circuitry. These features enable very small total solution size and make KTB8370 easy to use.

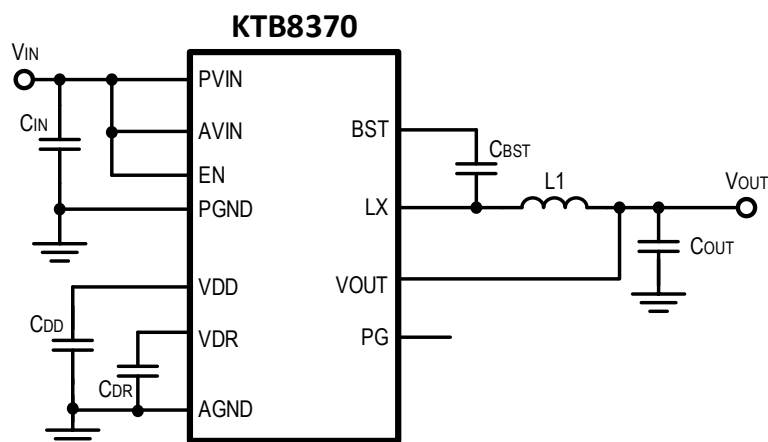
The device features an internal soft-start function to limit inrush current during start-up. The device has comprehensive built-in protection features including input voltage UVLO, high-side cycle-by-cycle peak current limit, low-side valley current limit, reverse current protection, short-circuit protection, output over-voltage protection, and thermal shutdown.

KTB8370 are available in RoHS and Green compliant 20-bump 1.7mm x 2.0mm x 0.6mm wafer-level chip-scale WLCSP20 package.

Applications

- CPU, GPU, AP, DSP, FPGA, VIO, VSYS
- HDD, LPDDR3, LPDDR4 Memory Power
- Tablets, Netbooks, Ultra-Books, Mobile Internet Devices, IoT, and Server.
- DSC, Drones, Gaming Consoles, TV Set Box

Typical Application Schematic



Ordering Information

Part Number ¹	Marking ²	Default Settings ³				Package
		V _{OUT}	F _{sw}	FCCM or Auto-Skip Mode	Active Discharged	
KTB8370AEIB-5C-TR	OLXXYYZZZZ	5.0V	500kHz	Auto-Skip	Disabled	WLCSP20
KTB8370BEIB-5C-TR	OPXXYYZZZZ	3.3V	500kHz	Auto-Skip	Disabled	WLCSP20
KTB8370CEIB-5C-TR	OTXXYYZZZZ	1.8V	500kHz	Auto-Skip	Disabled	WLCSP20

1. For part numbers in italics or alternative default combinations, please contact your local sales representative
2. XX = Date Code, YY = Assembly Code, ZZZZ = Serial Number.
3. Contact a Kinetic Technologies representative regarding versions with other default settings.

Kinetic Technologies cannot assume responsibility for use of any circuitry other than circuitry entirely embodied in a Kinetic Technologies product. No intellectual property or circuit patent licenses are implied. Kinetic Technologies reserves the right to change the circuitry and specifications without notice at any time.

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