For full datasheet, click **HERE**.

3A, 2.4MHz, Low-Voltage, I²C Programmable Buck Regulator

Features

- 2.7 to 5.5V Input Voltage Range
- 0.6 to 3.345V Programmable Output Voltage
  - ▸ 6.25mV steps below 1.39375V
  - ▸ 15mV steps above 1.44V
- 3.0A Output Current
- ±1% Accuracy at T_A = +25°C
  - ▸ ±2.5% over line/load/temp/setting
- Fast Transient Response
- Dynamic Voltage Scaling (DVS) with 8 ramp rates
- Soft-Start with 10 ramp rates
- 89% Peak Efficiency at Vout = 1.15625V
- 2.4MHz with Auto-Skip at light loads
  - ▸ Programmable forced-PWM mode
- 48uA typ. No-Load Supply Current in Skip Mode
- Tiny External Components
  - ▸ L = 330 or 470nH (2012 or 2016 metric size)
  - ▸ Cin = 10µF (0402), Cout = 2x22µF (2x0402)
- Over-Current, Short-Circuit, Under/Over-V_{IN}, and Thermal Shutdown Protections
- 1MHz I²C Interface
- Open-Drain $\overline{IRQ}$ Output Flag
- -40°C to 85°C Operating Temperature Range
- 15-bump Pb-free WLCSP (0.4mm pitch)
  - ▸ 1.340 x 2.045mm (0.6mm height)
 - ▸ Pin/Register Compatible with FAN53526

Brief Description

The KTB8331 is a precision adaptive-on-time (AOT) buck switching regulator with class-leading accuracy, transient response, efficiency, and solution size optimized for mobile and non-mobile application. It is I²C programmable for output voltages in the 0.6V to 3.345V range. It features soft-start and DVS with multiple programmable ramp rates. Versions with various default settings can be ordered. The features and performance make the KTB8331 suitable for a variety of applications including CPU/GPU core, DSP and baseband, DDR memory, VIO, and sensor/analog power.

The KTB8331 is available in RoHS and Green compliant 15-bump 1.340mm x 2.045mm x 0.6mm wafer-level chip-scale package (WLCSP).

Applications

- CPU, GPU, AP, DSP, FPGA, I/O, XCVR Power
- HDD, LPDDR3, LPDDR4 Memory Power
- Tablets, Netbooks, Ultra-Books
- Smartphones, Mobile Internet Devices, IoT
- DSC, Drones, Gaming Consoles, Accessories

Typical Application Schematic
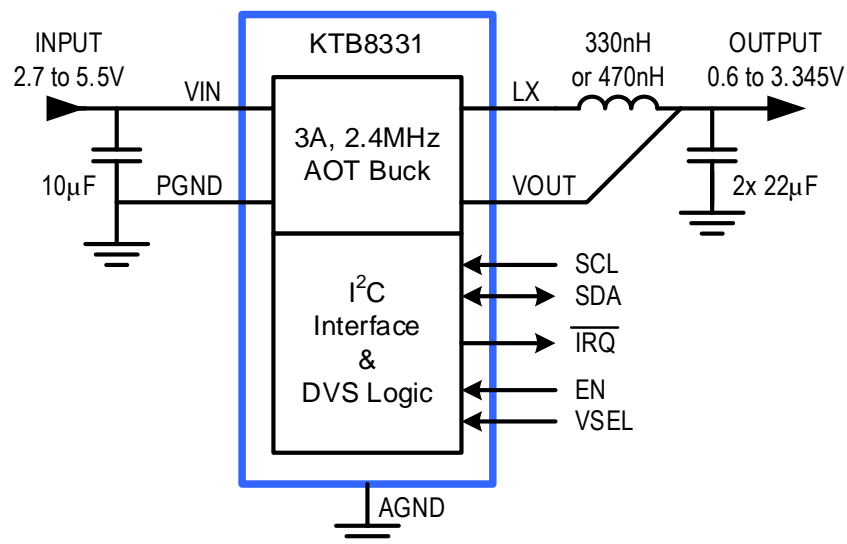
Ordering Information

Part Number	Marking[1]	Default Output Voltage & Mode[2]		7-bit I²C Slave Address	Package
		(VSEL = 1)	(VSEL = 0)		
KTB8331AEDAA-TR	QKXXYYZZZZ	1.15625V Forced-PWM	1.15625V Auto-Skip	1100 000=0x60h	WLCSP15

1. "WW" is the device ID, "XX" is the date code, "YY" is the assembly code, and "ZZZZ" is the serial number.

2. Contact a Kinetic Technologies representative regarding versions with other default settings.

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SCY1751FCCT1G NCP81109JMNTXG AP3409ADNTR-G1 NCP81241MNTXG LTM8064IY LT8315EFE#TRPBF LTM4668AIY#PBF
NCV1077CSTBT3G XCL207A123CR-G MPM54304GMN-0002 MPM54304GMN-0004 MPM54304GMN-0003
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