71M6513

71M6513H

TDK Semiconductor's Power Meter ICs

The TDK 71M6513 is a highly integrated SOC with an MCU core, RTC, FLASH and LCD driver. TDK's Single Converter Technology™ with a 21bit 2nd order delta-sigma ADC, 6 analog inputs, digital temperature compensation, precision voltage reference and 32 bit computation engine supports a wide range of polyphase metering applications with very few low cost external components. A 32kHz crystal timebase for the entire system and internal battery backup support for RAM and RTC further reduce system cost.

Maximum design flexibility is supported with multiple UARTs, I2C, power fail comparator, 5V LCD charge pump, up to 22 DIO pins and in-system programmable FLASH which can be updated with data or application code in operation. Easy conversion to ROM offers unprecedented cost structure for high volume applications. The device is offered in high (0.1%) and low (0.5%) accuracy versions for multifunction residential/commercial meter applications requiring multiple voltage/current inputs, larger LCD or DIO features.

A complete array of ICE and development tools, programming libraries and reference designs enable rapid development and certification of meters that meet most demanding worldwide electricity metering standards.

Applications

- *Industrial Meters*
- *Commercial Meters*
- *Residential Meters*

Features

- < 0.1% WH accuracy over 2000:1 range (71M6513H version)
- Exceeds IEC61036 / IEC62053 / ANSIC12.20
- Voltage reference < 10ppm/°C spec (71M6513H version)
- Six sensor inputs-VDD referenced
- Four quadrant metering
- Voltage angles-phase sequence
- Digital temperature compensation
- 21bit 2nd-order delta-sigma ADC
- Independent 32bit compute engine
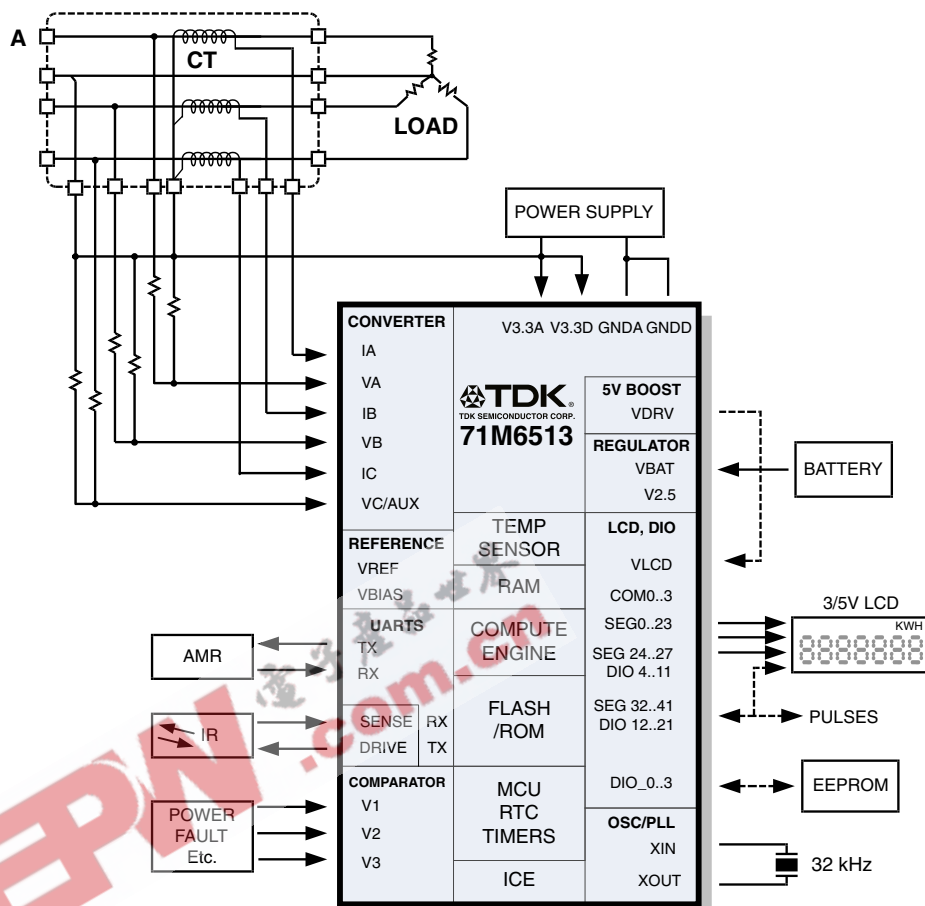- Low jitter pulse outputs
- 40-70Hz line frequency range

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TDK SEMICONDUCTOR CORP.

Features (continued)

- Phase compensation (±7°)
- Battery Backup for RAM and RTC
- < 30mW @3.3V, 13.2mW back up
- Flash memory option with security
- 8-bit microcontroller (8051)
- Integrated ICE for MPU debug
- LCD driver (<168 pixels)
- High speed SSI serial output
- RTC for time of use functions
- Two Event counter/timers
- Watchdog timer
- Power fail monitor
- Up to 22 general purpose I/O pins
- 64kB Flash/ROM
- 7kB RAM
- Two UARTs for IR and AMR
- Third software UART via DIO pins
- 100-lead Exposed Pad LQFP package (epLQFP)

71M6513 / 71M6513H Block Diagram

Ordering Information

PART DESCRIPTION	ORDERING NUMBER	PACKAGE MARKING
71M6513 100-pin epLQFP, 0.5% accuracy	**71M6513-IEL**	**71M6513-IEL**
71M6513 100-pin Lead-Free epLQFP, 0.5% accuracy	**71M6513-IEL/F**	**71M6513-IEL**
71M6513H 100-pin epLQFP, 0.1% accuracy	**71M6513H-IEL**	**71M6513H-IEL**
71M6513H 100-pin Lead-Free epLQFP, 0.1% accuracy	**71M6513H-IEL/F**	**71M6513H-IEL**

For immediate technical information and the name of a local representative or distributor,
visit www.tdksemiconductor.com, send an e-mail to support@tdksemiconductor.com
or call (714) 508-8800.