## New! Switched Current Power Converter

**Provides** Significant **Power Savings** for Servers

Processors used for server applications often have a very low duty cycle.



Switched Current Power Converter (With Switched Charge Circuits)

The Switched Current Power Converter with Switched-Charge Circuit voltage control is a true break-through technology, providing:

- *Fastest possible* dv/dt: Up to 1500 mv/us
- *<u>Fastest possible</u>* transition times; 0 V, 0 A to VID and Full Load: 2 us! VID and Full Load to 0 V, 0 A: 2 us! Any VID, Any Load to Any Other VID, Any Load: 1 us!
- <u>Fastest possible</u> di/dt: Limited only by parasitic impedances.
- *Easily expandable* to multiple outputs.
- Very low standby power.



Circuit impedance adapted from Intel© VR10.2, with bulk capacitors deleted.

## **Present Technology:**

- The power used between periods of activity is *entirely wasted power!*
- Significant power would be saved if the processor could switch to a lower voltage and clock, or turn off entirely.
- The time to recover from a reduced power state makes this option unavailable for most server applications.
- The poor dynamic response of the power supply is the principle impediment.



## <u>Key Benefits</u>

- <u>Saves Power:</u> If the cache and the clock are kept active, the processor core can be <u>turned off entirely</u> when there is no activity!
- <u>Saves Board Area</u>: The bulk capacitors are *eliminated*.
- <u>Saves Cost:</u> Trades-off capacitors for silicon, Less heat sinking, Less board area.
- <u>Simplified Power Source:</u> The SCPC provides isolation; so the input current can be *non-isolated*.

Edward Herbert, January 20, 2006. For more information, see: <u>http://eherbert.com/</u> or <u>http://anagenesis-inc.com/</u>