

# Fujitsu semiconductor launches power management IC MB39C326 for mobile devices

July 23 2012

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Fujitsu Semiconductor today announced the release of MB39C326, a DC-DC converter for mobile devices. By automatic step-up/down switching mode, its range of power supply voltage can be expanded. MB39C326 contains an oscillation FET and adopts a small package with 2.15mm x 1.94mm, hence it forms a power supply system with small mounting area and low BOM (bill of materials) cost. This product controls the output voltage by DAC signal supporting APT and ET function.

Due to rapid expansion of mobile device market, customers demand more efficiency in product performance and function. Many suppliers have been making efforts to provide products which achieve outstanding performance and plentiful functions, and at the same time reduce the [power consumption](#), size and costs, so as to extend the battery life and attract more customers.

MB39C326 is a synchronous step-up/down DC/DC converter with [high efficiency](#) and [low noise](#). It is mainly designed for [mobile devices](#) that use a single cell Li-ion battery. This product supports APT and ET function, hence the PA operating efficiency can be greatly enhanced in 3G/4G application, and system power can be saved up to 40% or above. The [oscillation frequency](#) of MB39C326 is 6MHz, and a smaller inductor (0.47uH) can be applied when comparing with traditional converter with 2-3MHz, thereby the total space of PCB can be reduced

by half. In addition, step-up/down operation can be automatically switched by inputting [voltage](#) through the unique voltage step-up/down circuit. When the voltage of Li-ion batteries change, MB39C326 delivers a stable voltage and effectively extends the life of Li-ion batteries.

MB39C326 can be applied to a wide range of mobile devices including mobile phones, [smart phones](#), e-book terminal and PDA, etc. It can also be used in products with Li-ion batteries, RF power amplifiers (PA) and RF-PC card.

MB39C326 adopts WL-CSP small package (2.15mm x 1.94mm x 0.625mm), 20 pins with up to 93% of efficiency. Its input voltage range is 2.5V~5.5V, while the output voltage range is 0.4V~5.0V. (Output voltage can be changed arbitrarily by adding a resistor to the feedback resistor of DAC signal input). The maximum output current can be reached to 1200mA (for voltage step-down).

## **Features of MB39C326**

**Achieving high efficiency by automatic PFM/PWM switching mode**  
DC/DC circuit adopts automatic PFM/PWM switching (power-saving) mode, it can improve efficiency at light load current. PWM fixed mode can be selected by setting XPS pin to high level.

### **Rich protection function**

Over current protection (OCP), over temperature protections (OCP), under voltage lock out protection (UVLO) and soft start, etc.

### **Output voltage setting function**

- Sets output voltage by FB separate resistor (the output is fixed value)
- Sets output voltage by VSELSW pin (output can be selected among 2 values)

- Voltage can be switched between 2 values by setting I/O signal of VSEL pin
- Sets output voltage by signal input (output value can be set arbitrarily)
- Sets [output voltage](#) by DAC signal, and it can be changed arbitrarily

Coping with the market demand and miniaturizing the system, Fujitsu Semiconductor will develop DC/DC converter with high oscillation frequency. Fujitsu also promotes integrated RF system including transponder and PA, so that the power efficiency of RF-PA part will be improved.

Source: Fujitsu

Citation: Fujitsu semiconductor launches power management IC MB39C326 for mobile devices (2012, July 23) retrieved 24 April 2024 from <https://phys.org/news/2012-07-fujitsu-semiconductor-power-ic-mb39c326.html>

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