6MHz Synchronous Rectification Buck-Boost DC/DC Converter IC Fact Sheet

MB39C326 was designed for the RF power amplifier of the mobile device that used 1-cell Li-ion battery. It is high-efficiency and low noise 6 MHz buck-boost DC/DC converter IC. The size of the inductor can be greatly reduced to 2-3MHz existing product by operating by the high frequency of 6MHz. Therefore, it becomes possible to reduce the substrate area of the power supply part by half. The range of the voltage that can be used can be expanded by automatic switching operation of the buck-boost circuit, and a steady power supply to the power amplifier can be supplied.

Features

- High efficiency: Up to 93%
- Input voltage range: 2.5 V to 5.5 V
- Adjustable output voltage range: 0.8 V to 5.0 V
- Over current limit value (Peak): 3.1A/1.3A/0.49A
- Output current:
  - 1200mA (Buck, output at 3.3V)
  - 800mA (Boost, output at 3.3V)
- 6MHz PWM operation allows 0.5 µH small form inductor
- Less than 20 µs step response for 3G
- Automatic Transition between buck mode and boost mode
- Selectable output voltage with external resistor
- Built-in Over temperature protection circuit
- Built-in Under voltage lockout protection circuit
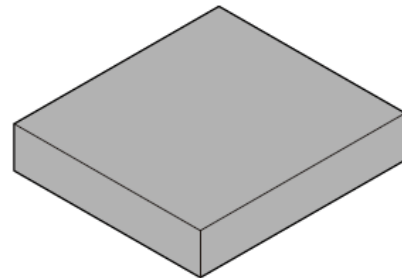- Package: 20-pin, WL-CSP(2.15mm ×1.94 mm× 0.625 mm**)**

Applications

- Products that use 1-cell lithium batteries for the power supply
- RF power amplifier
- Cell-phone
- RF-PC card, PDA

Ordering Information

Part number	Package
MB39C326PW	20-pin plastic WL-CSP (WLP-20P-M01) 0.4 mm-ball-pitch 2.15 mm ×1.94 mm

Package Example of Reference

20-pin plastic WL-CSP

Pin Assignments

TOP VIEW

	A	B	C	D	E
4	EN	ILIMSEL	VSEL	VSELSW	GND
3	VCC	XPS	GND	GND	FB
2	VDD	SWOUT	DGND	SWIN	VOUT
1	VDD	SWOUT	DGND	SWIN	VOUT

■ PIN DISCRIPTIONS

Pin No.	Pin Name	I/O	Description
A4	EN	I	IC Enable input pin (H: Enable, L: Shutdown)
E3	FB	I	Voltage feedback pin
C3,D3,E4	GND		Control / Logic ground pins
B4	ILIMSEL	I	Current limit mode pin
B1,B2	SWOUT	I	Connection pins for Inductor
D1,D2	SWIN	I	Connection pins for Inductor
C1,C2	DGND		Power ground pins
C4	VSEL	I	Output voltage select pin (H:Using R3 L:No using R3)
D4	VSELSW		Connection pin for output voltage setting resistor R3
A1,A2	VDD	I	Electric power input pin for DCDC converter output voltage
A3	VCC	I	Electric power input pin for IC control block
B3	XPS	I	Power save mode pin (H: Normal mode, L: Power save mode)
E1,E2	VOUT	O	Buck-boost converter output pins

Block Diagram

Document History

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**	—	TAOA	04/17//2012	Migrated to Cypress and assigned document number 002-08963. No change to document contents or format.
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