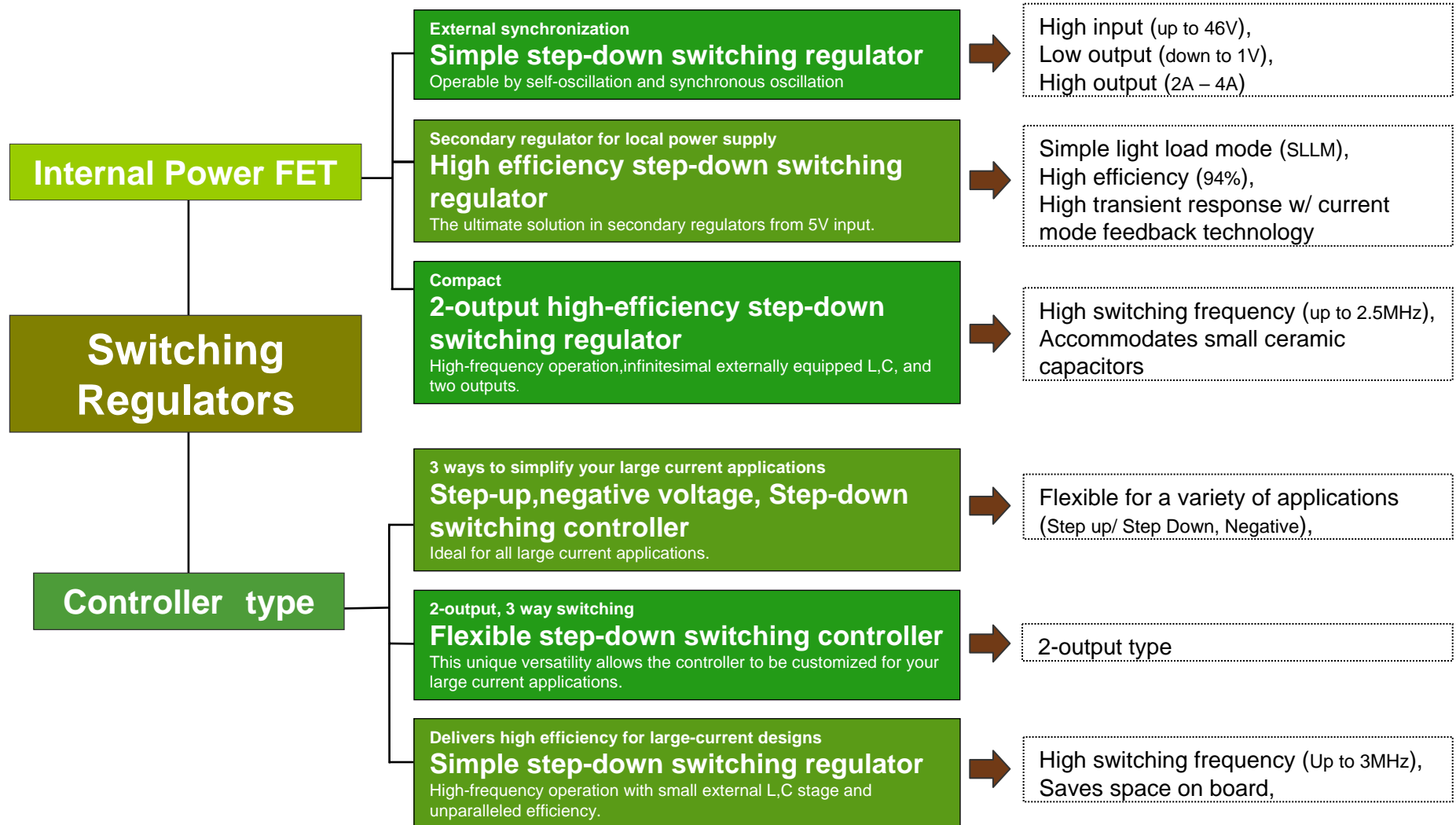


ROHM Switching Regulators



ROHM Switching Regulator Benefits

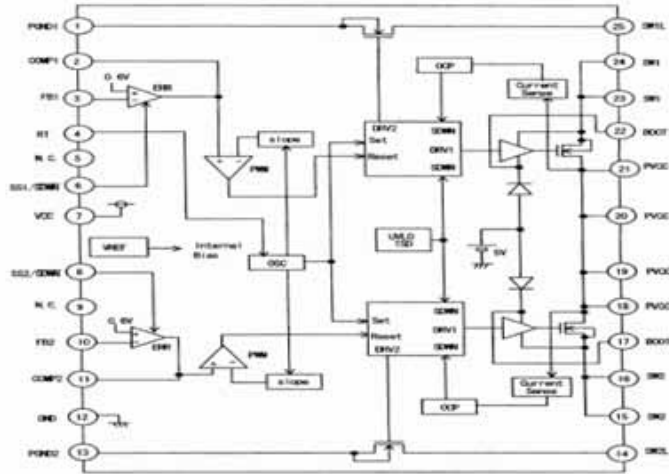


Wide Voltage 2.5MHz 2A Two Channel Buck Converter

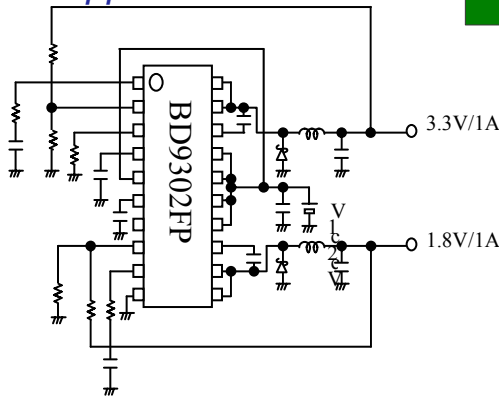
BD9302FP

I_{out}: 2.0A × 2ch

· Block Diagram



· Application Circuit



Target Applications

- CRT displays
- TFT-LCD bias
- Backlight
- LCD projector
- Plasma TV
- DVD Player
- Air conditioner
- Printer
- ADSL modem
- Other electronics

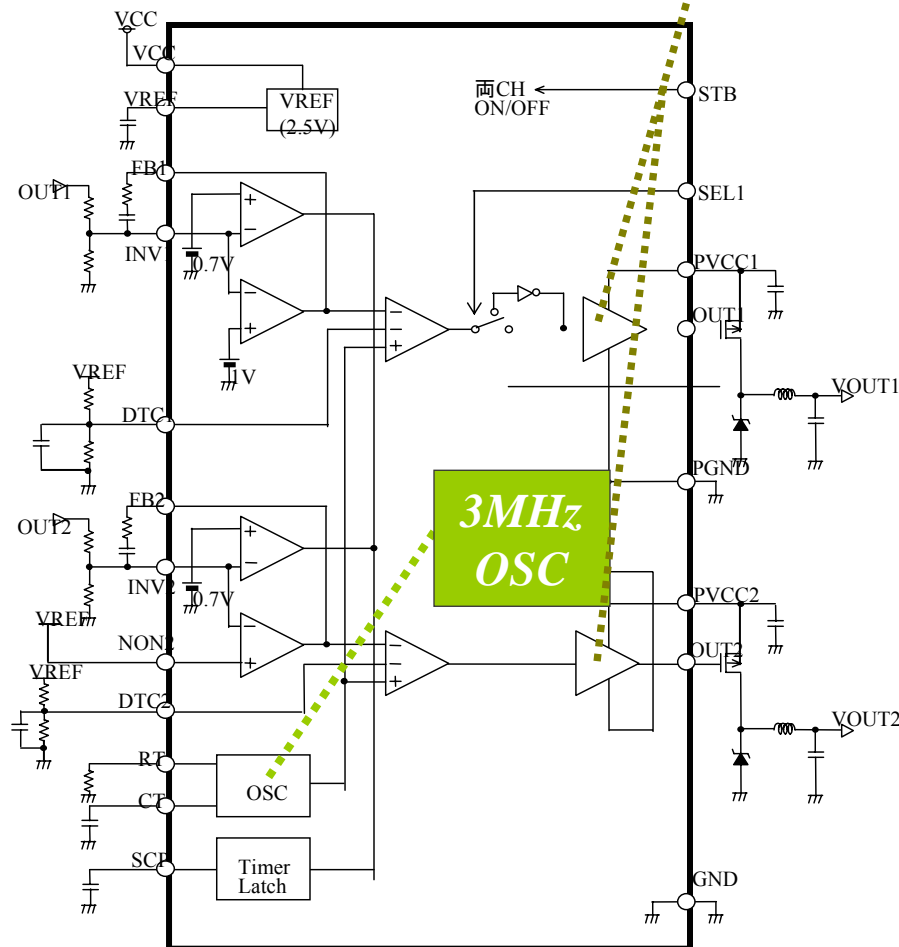
BD9302FP is a high speed, high power switching regulator. It includes 2A Nch FET x2. The switching frequency is 2MHz, so the application area is very small. The new PWM control technology can make the minimum pulse width less than 50nsec.

- 1 Wide Input Range: 6.0V to 18V**
BD9302FP is very useful for 12V due to its wide input range. It is the best solution for the stabilization of the AC/DC output.
- 2 Fast Switching Frequency: 200 to 2500kHz**
Switching frequency can be set from slow switching for high efficiency to fast switching for small application.
- 3 High Accuracy Reference Voltage: 0.6V ± 2%**
Its high accuracy reference voltage can increase the accuracy of the output voltage.
- 4 Internal Switch: 1A 0.4Ω NchFET x2**
The high power switch is 1A 0.4Ω and contributes to high efficiency.
- 5 Multiple Protection Circuits**
Under Voltage Lock Out (UVLO), Thermal Shut Down (TSD) and Over Current Protect (OCP) increase safety.
- 6 Thin, Power Package || : HSOP-25**
The heat sink allows for high output power.

2ch High Switching Controller

BD9851FV

High Drive Current Capability

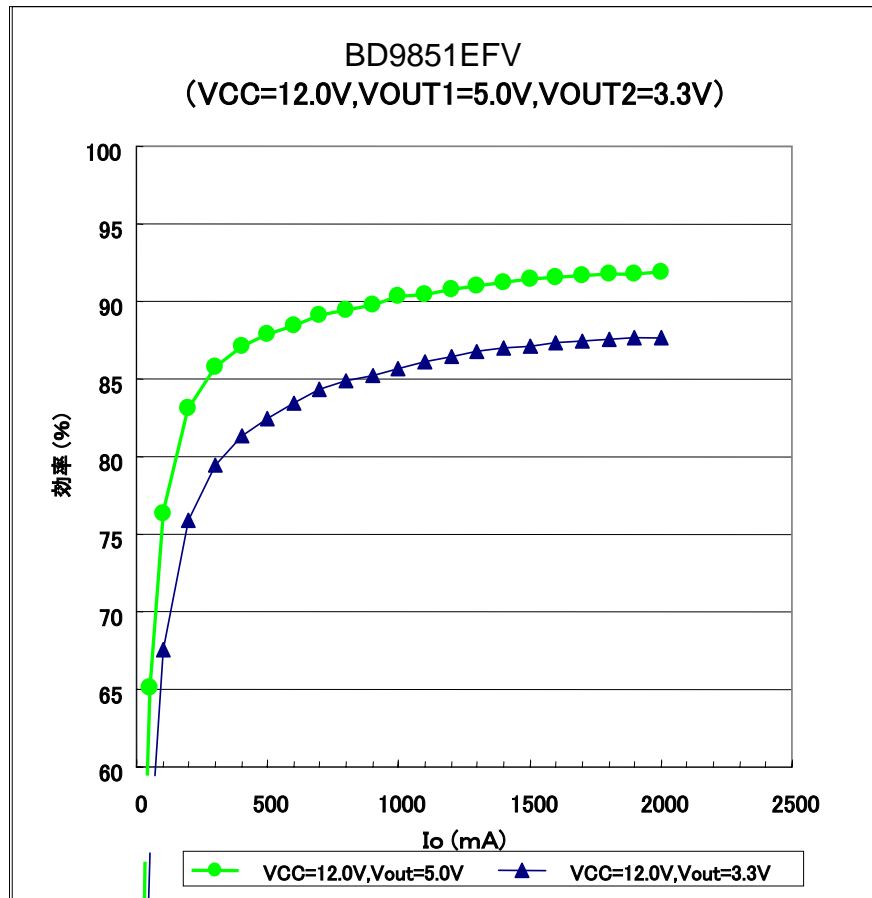


Features:

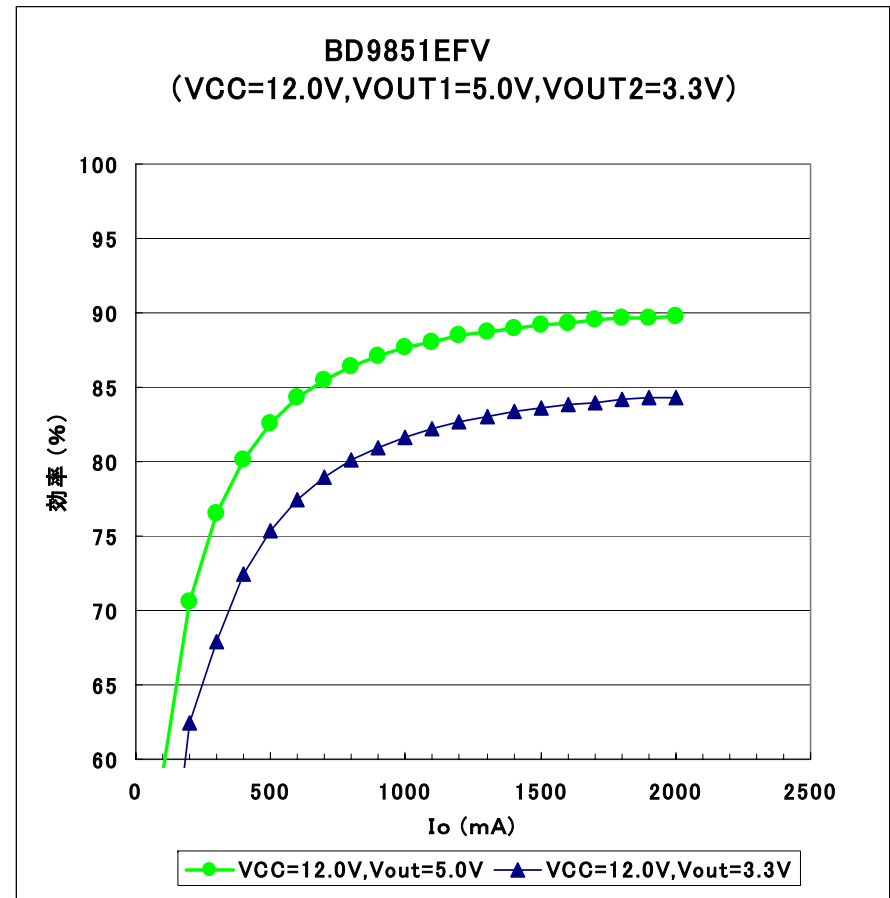
- Input Voltage 4~18V
- FET Driver 2ch
- Selectable Drive FET (N/P channel FET, CH1)
- Timer Latch SCP
- UVLO
- Standby Function
- Adjustable Fosc (10kHz~3MHz)
- Vref Accuracy $\pm 1.0\%$
- ESSOP-B20 Package

2ch High Frequency Switching Controller

BD9851FV Efficiency Data



300kHz



1MHz

1ch High Frequency Switching Controller

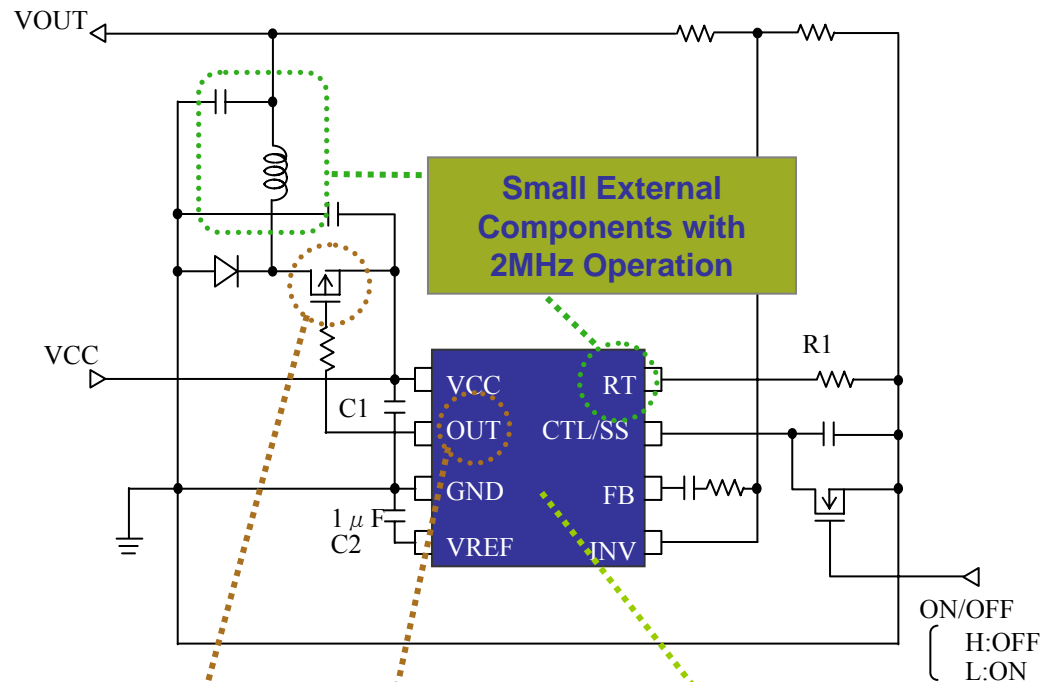
BD9850FVM

Evaluation Board



2cm
2cm

Ultra-small Real Estate



High Drive Current Ability

MSOP8 Small Package

Feature

- ❑ Vcc 4~9V (Absolute Ratings 10V)
- ❑ Adjustable Output(1.0V~Vin)
- ❑ External FET Controller
- ❑ UVLO
- ❑ Vref accuracy $\pm 1.0\%$
- ❑ Standby, Soft Start Function
- ❑ Adjustable High Frequency: 100~2MHz
- ❑ Operating Temp: $\pm -40\sim 85^{\circ}\text{C}$
Tjmax: 150°C

Features of 2MHz Operation of BD9850FVM

Small Inductor and Capacitor are available

Small inductor and output capacitor saves valuable board space.

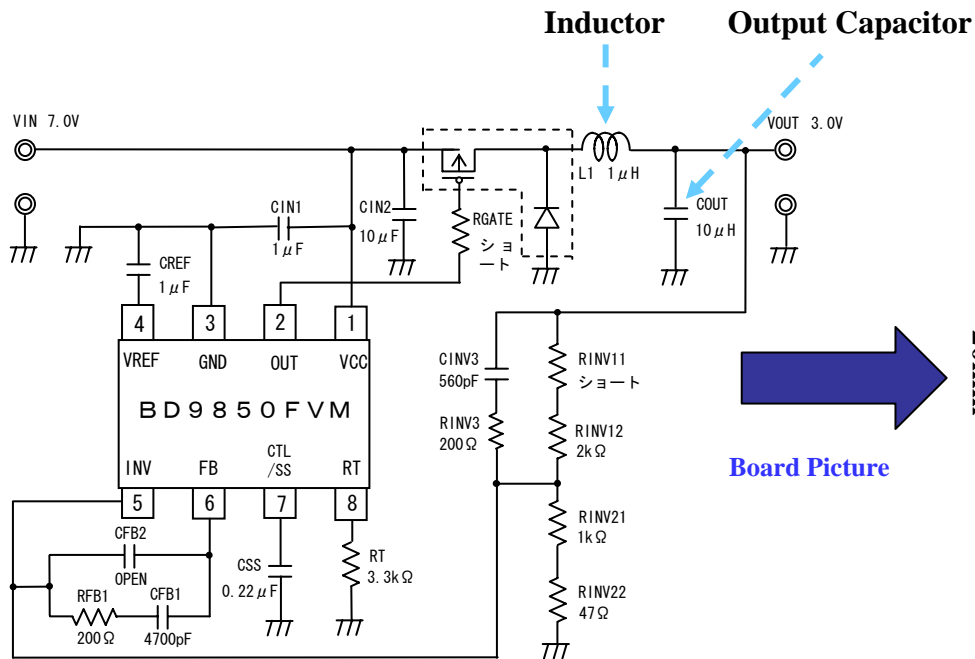


Fig1-1. Reference Application Circuit

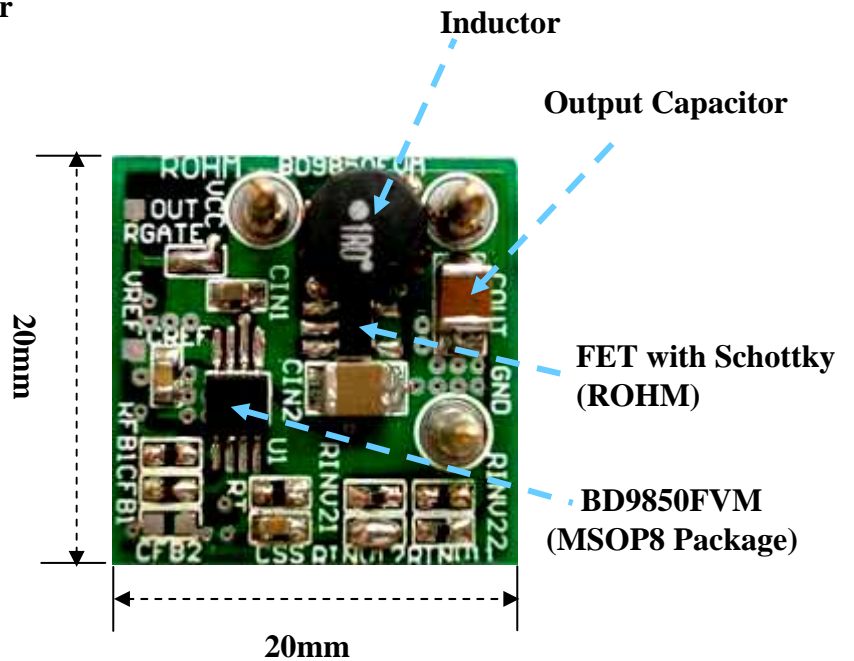


Fig1-2. Application Board

ROHM Switching Regulator Lineup -1

with Internal Power FET

MP NEW

PART NO.	POWER FET	Vin (V)	Io max (A)	Fosc (kHz)	Vout (V)	CH	Synchronous Rectifier	Efficiency (%)	OCP	STB SW	Soft Start	PKG
BD9701	Include	8 ~35	1.5	100	1 ~ 32	1	×	86	○	○	×	TO252-5 TO220-5
BD9702	Include	8 ~35	3	110	1 ~ 32	1	×	86	○	○	×	TO252-5 TO220-5
BD9707	Include	5 ~25	2	300	1.2 ~ 23	1	×	85	○	○	○	TO252-5 TO220-5
BD9778	Include	5 ~35	2	50 ~ 500	1 ~ 35	1	×	90	○	○	○	SOP8 HRP7
BD9002	Include	12 ~46	2.5	50 ~ 300	1 ~ 46	1	×	82	○	×	○	HRP7
BD9781	Include	5 ~35	4	50 ~ 500	1 ~ 35	1	×	88	○	○	○	HRP7
BD9302	Include	6 ~18	2	200~2500	0.6 ~ 16	2	×	88	○	○	○	HSOP25
BD9020	Include	4.5 ~30	2	200~1000	0.8~	1	×	90	○	○	○	SOP8
BD9030	Include	4.5 ~30	3	200~1000	0.8~	1	×	90	○	○	○	HSOP8 HTSSOP

ROHM Switching Regulator Lineup -2

with Internal Power FET and Synchronous Rectifier

MP NEW

PART NO.	POWER FET	Vin (V)	Io max (A)	Fosc (kHz)	Vout (V)	CH	Synchronous Rectifier	Efficiency (%)	OCP	SW	STB	Soft Start	PKG
BD9102	Include	4.0-5.5	0.8	1000	1.2	1	○	93	○	○	○	○	MSOP8
BD9104	Include	4.5-5.5	0.8	1000	3.3	1	○	90	○	○	○	○	MSOP8
BD9106	Include	4.0-5.5	0.8	1000	1.0-2.5	1	○	90	○	○	○	○	MSOP8
BD9107	Include	4.0-5.5	1.2	1000	1.0-1.5	1	○	90	○	○	○	○	MSOP8
BD9101	Include	4.0-5.5	1.2	1000	1.0-1.5	1	○	90	○	○	○	○	MSOP8
BD9109	Include	4.5-5.5	0.8	1000	3.3	1	○	90	○	○	○	○	MSOP8
BD9110	Include	4.5-5.5	2	1000	1~2.5	1	○	90	○	○	○	○	SOP8
BD9120	Include	2.7-5.5	0.8	1000	1~1.5	1	○	90	○	○	○	○	HSOP8



ROHM Switching Regulator Lineup -3

with Controller

MP NEW

PART NO.	POWER FET	Vin max (V)	Fosc (kHz)	Vout (V)	CH	Synchronous Rectifier	OCP	STB SW	Soft Start	PKG
BD9850	External	4 ~9	100 ~ 2000	Buck 1~9	1	×	×	○	○	MSOP8
BD9851	External	4 ~18	100 ~ 3000	— * 1	2	×	×	○	○	HTSSOP—B20
BD9300	External	3.6 ~35	20 ~ 800	— * 1	1	×	×	○	○	SSOP—B14 SOP14
BA9743	External	3.6 ~35	10 ~ 800	— * 1	2	×	×	×	○	SSOP—B16
BD9775	External	6 ~30	30 ~ 300	Buck 1~30	2	○(CH1)	○	○	○	SSOP-B28
BD9011	External	3.9 ~28	250 ~ 550	Buck 0.8 ~ Vcc X 0.9	2	○ (CH1,CH2)	○	○	○	HQFN36
BD9305	External	3.6 ~18	20 ~ 800	Buck 1.25 ~ Vcc	1	×	○ SCP	○	○	MSOP8
BD9306	External	3.6 ~18	20 ~ 800	Boost 1.25 ~	1	×	○ SCP	○	○	MSOP8

Switching Regulator Roadmap

