

SMALL-PACKAGE PWM/PFM CONTROL STEP-UP SWITCHING REGULATOR

S-8324/8328 Series

Consisting of a reference voltage source, an oscillation circuit, a power MOSFET and an error amplifier, this series of devices offer high efficiency over a wide range because the control circuit has the ability to change the control scheme according to the load.

A step-up switching regulator can be constructed by externally connecting only a coil, a capacitor and a diode to the S-8324 Series. These features, along with its small package and low current consumption, make the S-8324 Series ideal as a power supply for portable equipment needed high efficiency. For applications requiring a high output current, the S-8328 Series is also available with an external transistor. For making an external coil smaller, high frequency type (250kHz) is also available.

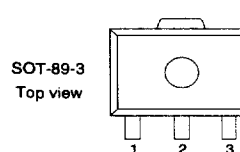
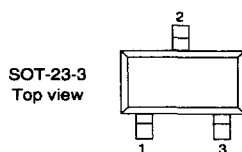
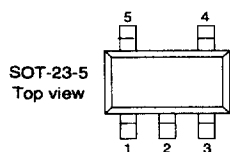
■ FEATURES

- Low voltage operation : 0.9V (I_{out}=1mA)
: 1.4V (H,J Series)
- Low current consumption
Operation : 17.2μA typ. (V_{out}=3V 50kHz)
: 59.4μA typ.(S-8328H33)
Shutdown : 0.5μA max.
- Low input current : 10.4μA typ. (V_{out}=3V 50kHz, no load)
- Duty ratio : Auto-switching PFM/PWM control circuit
During PWM control : 15 to 83% typ. (15 to 73% : H,J Series)
During PFM control : 15% typ.
- External components : Coil, Diode, Capacitors
- Output voltage : accurate to ±2.4%
- Oscillation frequency : 30kHz, 50kHz, 100kHz, 250kHz,
- Built-in soft start function
- Shutdown function
- Large output currents can be obtained with an external transistor (S-8328 Series)
- Small package : SOT-23-5, SOT-23-3, SOT-89-3
- Step-down and inverting type can be also made.

■ APPLICATIONS

- Power supplies for portable equipment such as pagers, handy calculators, and remote controllers
- Constant voltage power supplies for cameras, video equipment, and communications equipment
- Power supply for microcomputers

■ PIN CONFIGURATIONS



S-8324AXXMC/S-8328BXXMC/S-8324HXXMC/S-8328HXXMC
SOT-23-5

Pin No.	Pin Name	Functions
1	ON / OFF	Shutdown pin "H" : normal operation (stepping up operation) "L" : stop stepping up (whole circuit stop)
2	V _{OUT}	Output voltage pin and power supply pin
3	-	N. C. (Non Connection)
4	V _{SS}	GND pin
5	CONT	External inductor connection pin (for S-8324 Series)
	EXT	External transistor connection pin (for S-8328 Series)

S-8324DXXMC/S-8328EXXMC/S-8324JXXMC/S-8328JXXMC
SOT-23-5

Pin No.	Pin Name	Functions
1	V _{OUT}	Output voltage pin
2	V _{SS}	Power supply pin
3	-	N. C. (Non Connection)
4	V _{SS}	GND pin
5	CONT	External inductor connection pin (for S-8324 Series)
	EXT	External transistor connection pin (for S-8328 Series)

S-8324AXXMA/S-8324AXXUA/S-8324CXXMA

S-8328BXXMA/S-8328BXXUA

SOT-23-3, SOT-89-3

Pin No.	Pin Name	Functions
1	V _{SS}	GND pin
2	V _{OUT}	Output voltage pin and power supply pin
3	CONT	External inductor connection pin (for S-8324 Series)
	EXT	External transistor connection pin (for S-8328 Series)

■ SELECTION GUIDE

Product Name	Built in Power transistor	with external power transistor	Switching frequency(kHz)	Shutdown function	V _{SS} /V _{OUT} separate type	Package	Application
S-8324AXXMC	○	-	50	○	-	SOT-23-5	With a shutdown function
S-8324AXXMA	○	-	50	-	-	SOT-23-3	Without shutdown function
S-8324AXXUA	○	-	50	-	-	SOT-89-3	Without shutdown function
S-8324DXXMC	○	-	50	-	○	SOT-23-5	For variable output voltage by step-up DC/DC converter and step-down, inverted output DC/DC converter with an external resistor
S-8324CXXMA	○	-	30	-	-	SOT-23-3	For pagers
S-8328BXXMC	-	○	100	○	-	SOT-23-5	For large load current with shutdown function
S-8328BXXMA	-	○	100	-	-	SOT-23-3	For large load current without shutdown function
S-8328BXXUA	-	○	100	-	-	SOT-89-3	For large load current without shutdown function
S-8328EXXMC	-	○	100	-	○	SOT-23-5	For variable output voltage by step-up DC/DC converter with an external resistor
S-8324HXXMC	○	-	250	○	-	SOT-23-5	For making external parts smaller with a shutdown function
S-8324JXXMC	○	-	250	-	○	SOT-23-5	For variable output voltage by step-up DC/DC converter and step-down, inverted output DC/DC converter with an external resistor
S-8328HXXMC	-	○	250	○	-	SOT-23-5	For large load current without shutdown function
S-8326JXXMC	-	○	250	-	○	SOT-23-5	For variable output voltage by step-up DC/DC converter with an external resistor

PRODUCT LIST

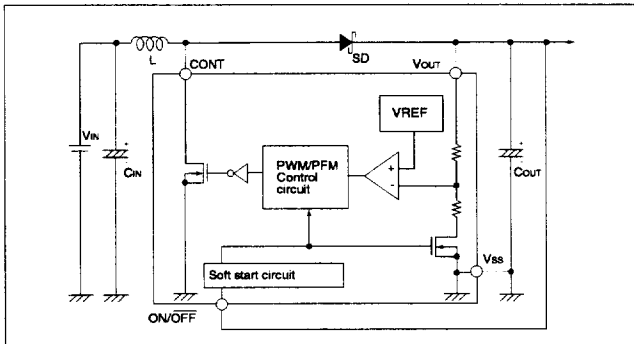
Item Output Voltage (V)	S-8324AXXMC Series	S-8324AXXMA Series	S-8324AXXUA Series	S-8324CXXMA Series	S-8324DXXMC Series	S-8324HXXMC Series	S-8324JXXMC Series
2.0	-	-	-	-	S-8324D20MC-E2A-T2	-	S-8324J20MC-EUA-T2
2.5	S-8324A25MC-EOF-T2	S-8324A25MA-EOF-T2	S-8324A25UA-EOF-T2	S-8324C25MA-EQF-T2	-	-	-
2.7	S-8324A27MC-EOH-T2	S-8324A27MA-EOH-T2	S-8324A27UA-EOH-T2	S-8324C27MA-EQH-T2	-	-	-
2.8	S-8324A28MC-EOI-T2	-	-	-	-	-	-
3.0	S-8324A30MC-EOK-T2	S-8324A30MA-EOK-T2	S-8324A30UA-EOK-T2	S-8324C30MA-EQK-T2	S-8324D30MC-E2K-T2	-	-
3.3	S-8324A33MC-EON-T2	S-8324A33MA-EON-T2	S-8324A33UA-EON-T2	-	-	-	-
5.0	S-8324A50MC-EPE-T2	S-8324A50MA-EPE-T2	S-8324A50UA-EPE-T2	-	S-8324D50MC-E4E-T2	-	S-8324J50MC-FVE-T2

Item Output Voltage (V)	S-8328BXXMC Series	S-8328BXXMA Series	S-8328BXXUA Series	S-8328EXXMC Series	S-8328HXXMC Series	S-8328JXXMC Series
2.0	-	-	-	S-8328E20MC-EYA-T2	-	-
2.5	S-8328B25MC-EWF-T2	S-8328B25MA-EWF-T2	S-8328B25UA-EWF-T2	-	-	-
2.7	S-8328B27MC-EWH-T2	S-8328B27MA-EWH-T2	S-8328B27UA-EWH-T2	-	-	-
3.0	S-8328B30MC-EWK-T2	S-8328B30MA-EWK-T2	S-8328B30UA-EWK-T2	-	-	-
3.3	S-8328B33MC-EWN-T2	S-8328B33MA-EWN-T2	S-8328B33UA-EWN-T2	-	-	-
3.6	S-8328B36MC-EWQ-T2	-	-	-	-	-
3.8	S-8328B38MC-EWS-T2	-	-	-	-	-
5.0	S-8328B50MC-EXE-T2	S-8328B50MA-EXE-T2	S-8328B50UA-EXE-T2	S-8328E50MC-E9E-T2	-	S-8328J50MC-F3E-T2
5.2	S-8328B52MC-EXG-T2	-	-	-	-	-

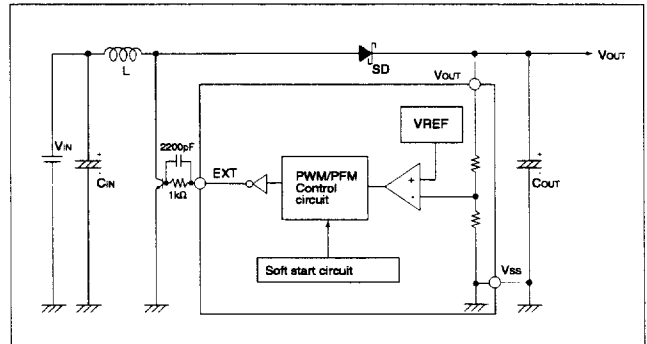
Please ask an SII representative if you need another output voltage product.

BLOCK DIAGRAM

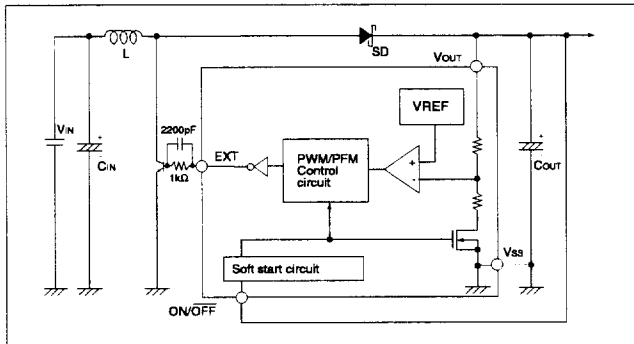
(1) S-8324AXXMC, S-8324HXXMC



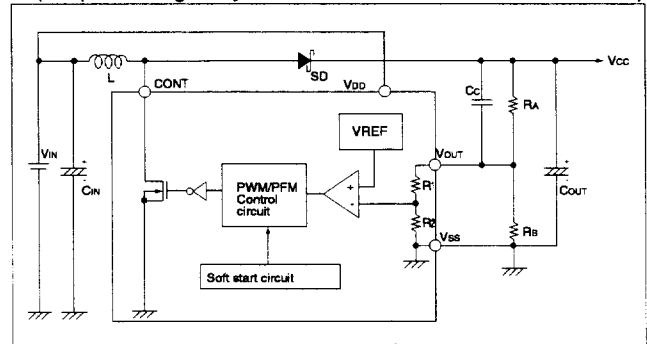
(4) S-8328BXXMA, S-8328BXXUA



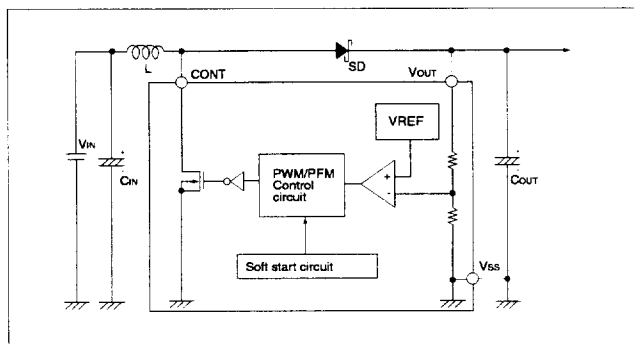
(2) S-8328BXXMC, S-8328HXXMC



(5) S-8324DXXMC, S-8324JXXMC
(Output voltage adjustment circuit with external resistors)



(3) S-8324AXXMA, S-8324AXXUA, S-8324CXXMA



(6) S-8328EXXMC, S-8328JXXMC
(Output voltage adjustment circuit with external resistors)

