THE POSSIBILITIES ARE INFINITE FUJITSU

Power Management ICs

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Specifications are subject to change without notice. For further information please contact each office.

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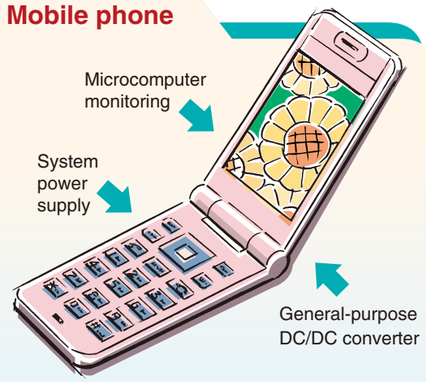
FUJITSU SEMICONDUCTOR

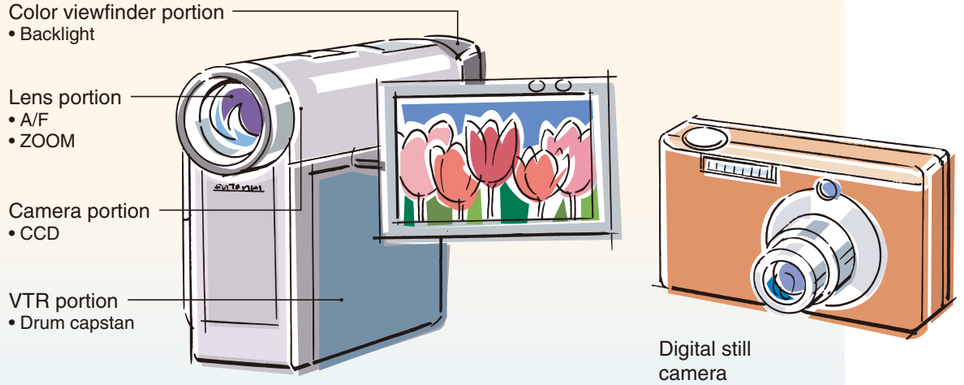
Fujitsu's power management ICs-providing refined high reliability and performance. Ready to meet a wide range of needs with our comprehensive lineup.

The requirements for today's electronic devices are ever smaller size, higher capabilities, and lower power consumption.
Fujitsu offers a wide range of power management ICs that feature low-power consumption, low-voltage operation, high precision, and multiple channels.
A wide range of products is available to meet your diverse needs, including low-voltage operation, multi-channel, high-efficiency, built-in FET regulator ICs, low-power consumption, high-precision voltage detection reset ICs, and low-temperature-resistant power-switching ICs.

Mobile phone



DSC/Camcorder



Power management ICs

AC/DC converter
- MB3759
- MB3769A

General-purpose DC/DC converter
- MB3800
- MB3789
- MB3817
- MB3885
- MB3775
- MB3778
- MB3821
- MB3882
- MB3889
- MB39A106
- MB39A104
- MB3782
- MB39A112
- MB39C011
- MB39C011A

DC/DC converter with SW FET
- MB39C014
- MB39C015

DC/DC converter for DSC/camcorders
- MB3785A
- MB39A102
- MB39A103
- MB39A110
- MB39A108
- MB3825A
- MB3883
- MB3881
- MB39A115
- MB39A123

For rechargeable batteries

For charging control
- MB3832A
- MB3874
- MB3875
- MB3876
- MB3877
- MB3878
- MB3887
- MB3888
- MB3879
- MB39A113
- MB39A114
- MB39A119
- MB39A125
- MB39A126
- MB39A129

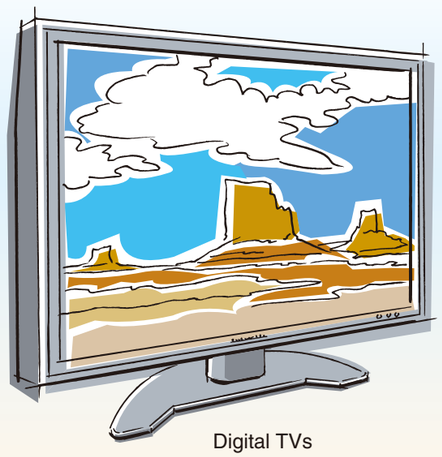
Monitoring of power supply voltage

Monitoring of power supply voltage
- MB3761
- MB3771

Monitoring of power supply voltage with watchdog timer
- MB3773
- MB3793

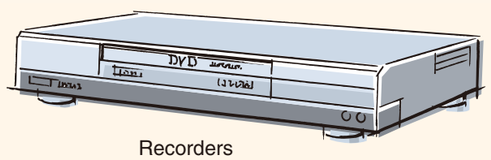
Power management switch
- MB3841
- MB3842
- MB3845

RoHS Compliance Information of Lead (Pb) Free version
The LSI products of Fujitsu with "E1" are compliant with RoHS Directive , and has observed the standard of lead, cadmium, mercury, Hexavalent chromium, polybrominated biphenyls (PBB), and polybrominated diphenyl ethers (PBDE).
The product that conforms to this standard is added "E1" at the end of the part number.



Digital TVs

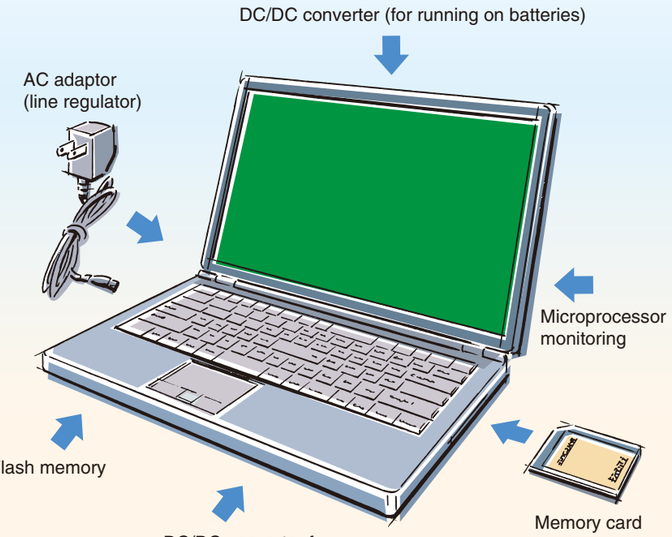
Printers



Recorders

IP telephones

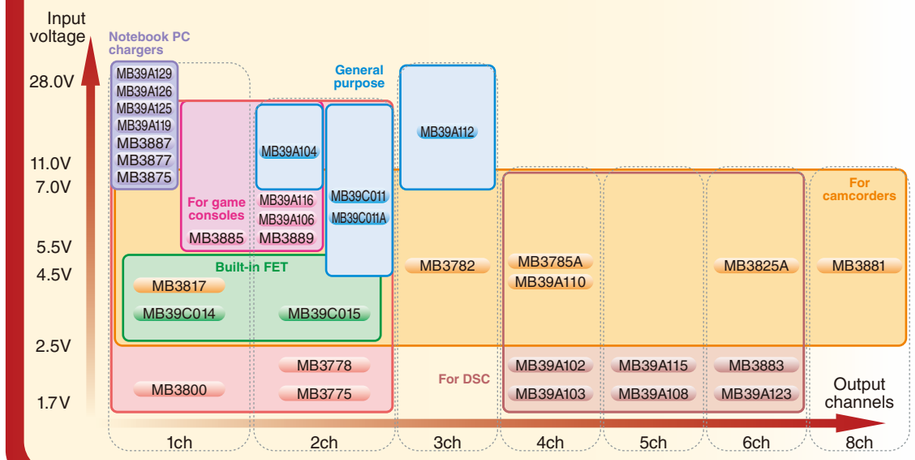
Digital TVs/Recorders/Printers/IP telephones



Notebook PC

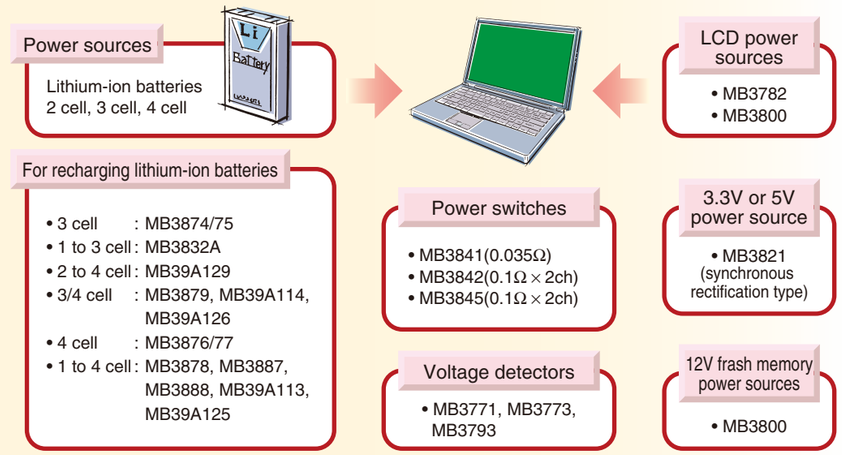
DC/DC converter

■ DC/DC converter IC line-up



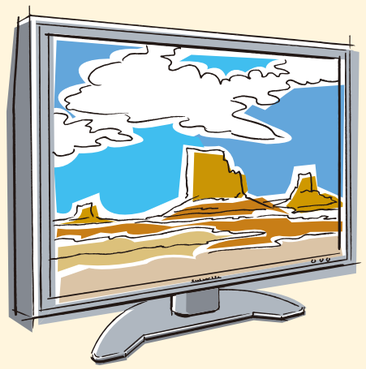
Notebook computers

■ Power source for notebook computers



Digital TV

■ Digital TV power supply IC



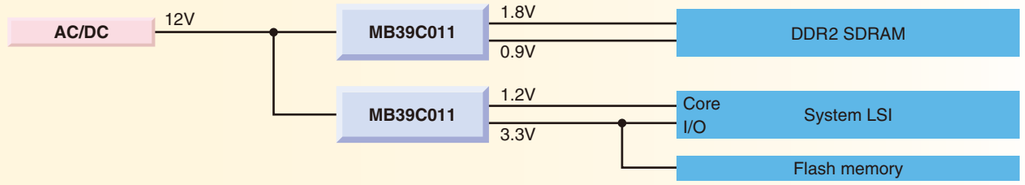
Power supply

1 channel
• MB3800

2 channel
• MB3775 • MB39A104
• MB3778 • MB3889
• MB3821 • MB39A106
• MB39C011 • MB39A116
• MB39C011A

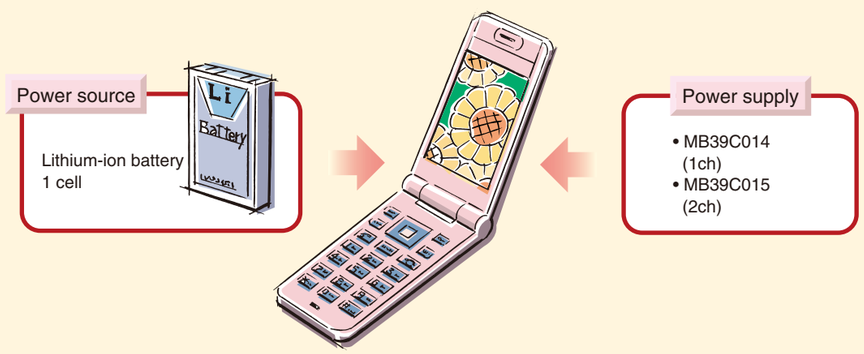
3 channel
• MB3782

■ Example of digital TV application

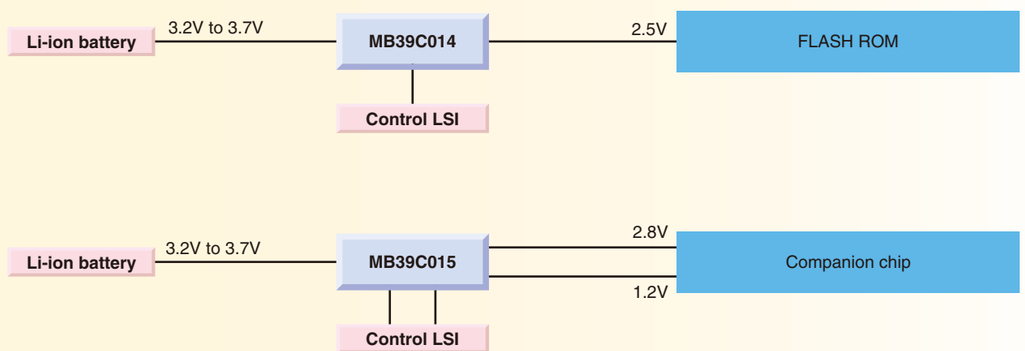


Mobile phones

■ Mobile phone power supply IC



■ Example of mobile phone application



IP telephone

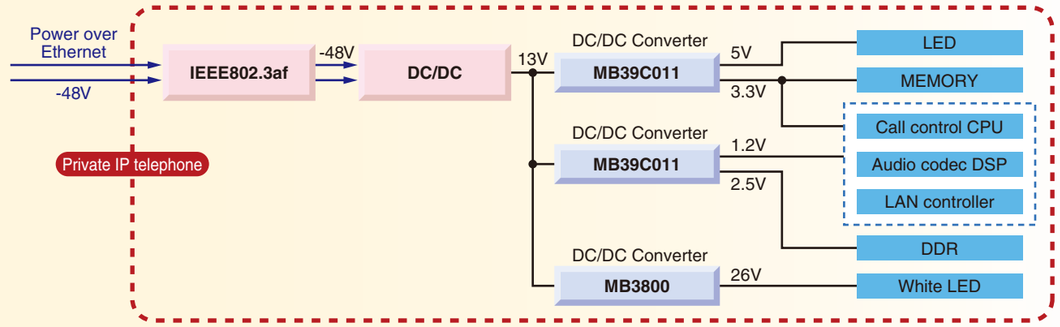
■ IP telephone power supply

Power supply

1 channel
- MB3800

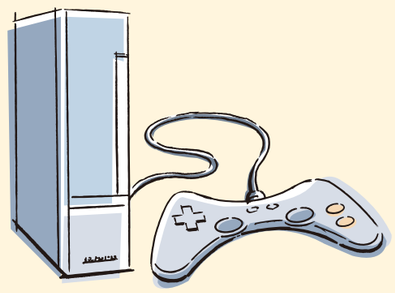
2 channel
- MB39A104
- MB39A106
- MB39A116
- MB39C011
- MB39C011A

■ Example of IP telephone application



Game machines

■ Power supply for game machines

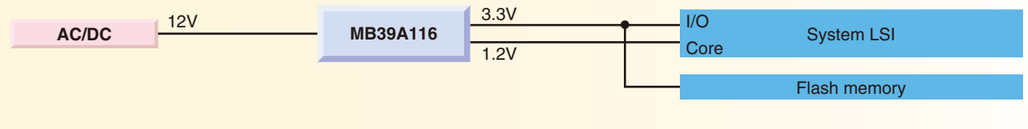


Power supply

1 channel
- MB3885

2 channel
- MB3882
- MB3889
- MB39A106
- MB39A116

■ Example of game console application



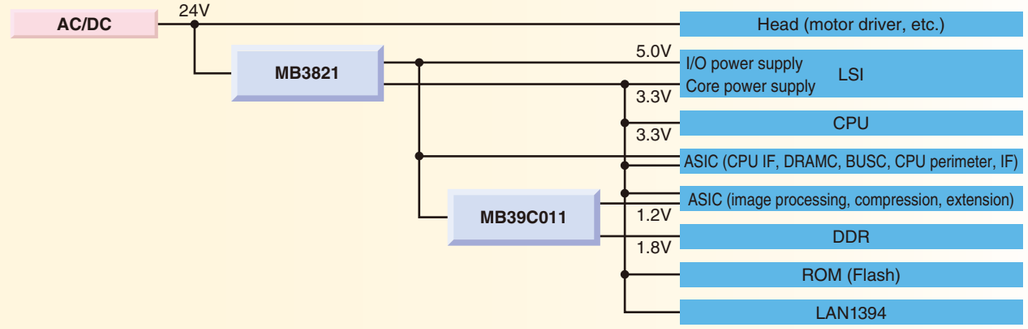
Printer

■ Printer power supply

Power supply

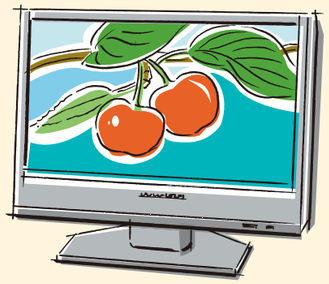
2 channel
- MB3821
- MB39A104
- MB39A106
- MB39A116
- MB39C011
- MB39C011A

■ Example of printer application



LCD panel

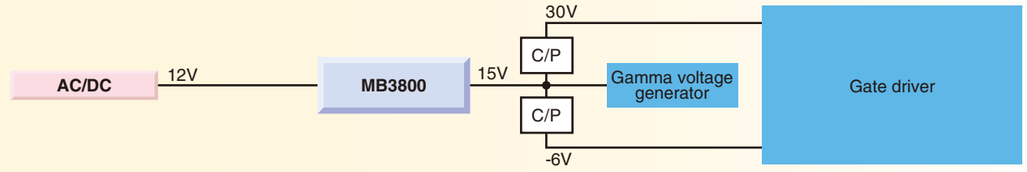
■ LCD panel power supply



Power supply

1 channel
- MB3800

■ Example of LCD panel application

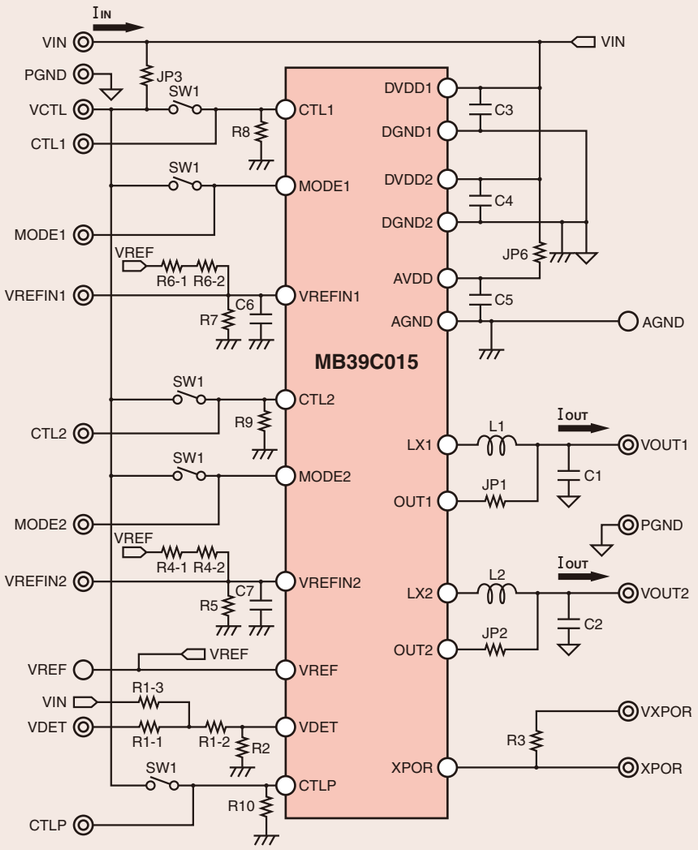


Evaluation board

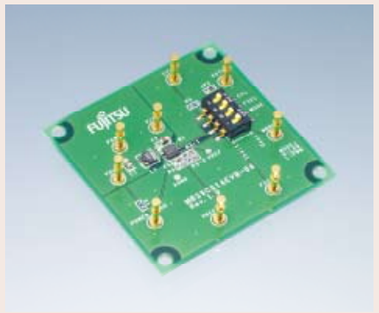
We provide evaluation boards to allow evaluation of devices.

■ Example: MB39C015 evaluation board (package: BCC-20)

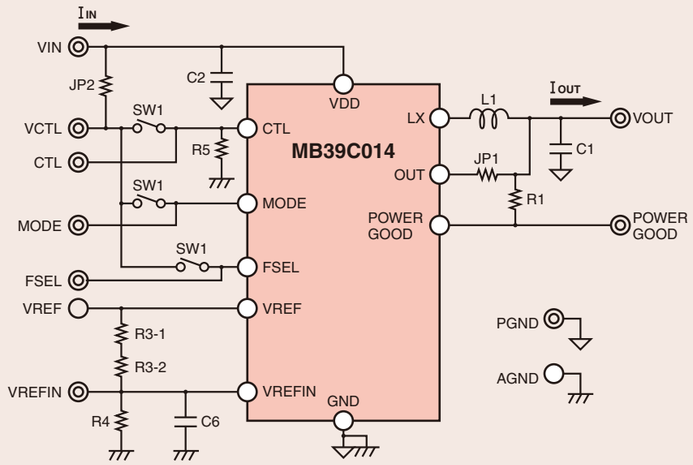
■ Example: MB39C015 connection diagram



■ Example: MB39C014 evaluation board (package: BCC-10)



■ Example: MB39C014 connection diagram



The details shown above may change without notice. Please contact our sales division for inquiries.

Lineup of power management ICs

■ AC/DC converter

Model	Oscillation frequency (maximum)	Power supply voltage	Maximum output current	Package	Remarks
MB3759	300kHz	7V to 32V	200mA	SOP16	TL494
MB3769A	700kHz	12V to 18V	100mA peak 600mA	SOP16	Power MOS FET

Used in a range of power supplies for products such as computers, printers, VCRs, and circuit boards for upright pinball machines (used in pachinko parlors).

■ General-porpose DC/DC converter

Model	Number of channels	Oscillation frequency (maximum)	Power supply voltage	Reference voltage accuracy	Package	Chopper method				FET compatible	Remarks
						Step up	Step down	Step up /down	Inverter		
MB3800	1ch	1MHz	1.8V to 15V	±4%	SOP8, SSOP8, TSSOP16	◎	○	–	–	Not available	Soft start function
MB3789	1ch	200kHz	3.0V to 18V	±4%	SSOP16	◎	○	–	–	Not available	–
MB3817	1ch	500kHz	2.5V to 18V	±2%	SSOP16	○	◎	◎	◎	Not available	–
MB3885	1ch	500kHz	5.5V to 18V	±1%	SSOP20	–	◎	–	–	Available	Synchronous rectification Overvoltage protection
MB3775	2ch	500kHz	3.6V to 18V	±1.5%	SOP16, SSOP16	○	◎	–	◎	Not available	Open corrector
MB3778	2ch	500kHz	3.6V to 18V	±2%	SOP16, SSOP16	○	◎	–	◎	Not available	Open corrector
MB3821	2ch	500kHz	4.5V to 30V	±2%	SSOP24	–	◎	–	–	Available	Synchronous rectification
MB3882	2ch	500kHz	5.5V to 18V	±1%	SSOP24	–	◎	–	–	Available	Synchronous rectification
MB3889	2ch	500kHz	5.5V to 18V	±1%	TSSOP30	–	◎	–	–	Available	Synchronous rectification. Built-in timer-latch over-voltage protection/ timer-latch over-current protection
MB39A106	2ch	500kHz	6.5V to 18V	±1%	TSSOP30	–	◎	–	–	Available	Synchronous rectification. Built-in boot-strap diode/ timer-latch over-voltage protection/timer-latch over-current protection
MB39A116	2ch	500kHz	6.5V to 18V	±1%	TSSOP30	–	◎	–	–	Available	Synchronous rectification. Built-in boot-strap diode/ over-voltage protection/ timer-latch over-current protection
MB39A104	2ch	1.5MHz	7V to 19V	±1%	SSOP24	–	◎	–	–	Available	Built-in overcurrent protection
MB39C011/ MB39C011A	2ch	2MHz	4.5V to 17V	±1%	TSSOP16	–	◎	–	–	Available	Timer latch short-circuit protection, soft start function
MB3782	3ch	500kHz	3.6V to 18V	±2%	SOP20	○	◎	–	◎	Not available	–
MB39A112	3ch	2.6MHz	7V to 25V	±1%	TSSOP20	–	◎	–	–	Available	Individual channel control, Soft start possible

Used in a wide range of power supplies, such as those for LCD backlights, car navigation systems, games, audio systems, portable devices, etc.
◎: Recommended ○: Possible with the addition of outside parts

■ DC/DC Converters with Built-in Switching FET

Model	Number of channels	Operating oscillation frequency (max)	Output voltage (V)		Power source voltage	Output current	Switching FET		Package	Chopper method				Remarks
			(standard)	Accuracy		(maximum)	Pch MOS (standard)	Nch MOS (standard)		Step up	Step down	Step up /down	Inverter	
MB39C014	1ch	2MHz/3.2MHz (fixed)	2.5V (output voltage)	±4%	+2.5V to +5.5V	800mA (for SON10) 500mA (for BCC10)	0.3Ω	0.2Ω	SON10 BCC10	–	◎	–	–	Current mode system, low current, synchronous rectification POWERGOOD function included
MB39C015	2ch	2MHz (fixed)	2.5V (output voltage)	±4%	+2.5V to +5.5V	800mA (for QFN24) 500mA (for BCC20 and SSOP20)	0.3Ω	0.2Ω	QFN24 BCC20 SSOP20	–	◎	–	–	Current mode system, low current, synchronous rectification voltage detection function included

Internal power supply suited to portable devices such as mobile phones, PDAs and DSCs, DVD players and hard disk drives.

Lineup of power management ICs

■ DC/DC converter for DSC/camcorders

Model	Number of channels	Oscillation frequency (maximum)	Power supply voltage	Reference voltage accuracy	Package	Chopper method				FET compatible	Remarks
						Step up	Step down	Step up /down	Inverter		
MB3785A	4ch	1MHz	4.5V to 18V	±1%	LQFP48	○	◎	◎	◎	Not available	–
MB39A102	4ch	1.5MHz	2.5V to 11V	±1%	TSSOP30, BCC32	◎	◎	◎	–	Available	Support for control and soft-start of each channel, Support for external input short-circuit detection
MB39A103	4ch	1.5MHz	1.7V to 11V	±1%	TSSOP30, BCC32	◎	◎	◎	–	Available	Low-voltage operation possible, Support for control and soft-start of each channel, Support for external input short-circuit detection
MB39A110	4ch	2MHz	2.5V to 11V	±1%	TSSOP38	◎	◎	◎	–	Available	Synchronous rectification, Support for control and soft-start of each channel, Support for external input short-circuit detection
MB39A108 MB39A115	5ch	2MHz	1.7V to 11V	±1%	TSSOP38, BCC40	◎	◎	◎	–	Available	Low-voltage operation possible, Synchronous rectification, Individual channel control, Soft start possible, Short-circuit detection possible with external input
MB3825A	6ch	800kHz	2.5V to 12V	±1%	LQFP64	○	◎	○	–	Not available	Synchronous rectification
MB3883	6ch	1MHz	1.7V to 9V	±1%	LQFP48, BCC48	◎	◎	◎	–	Available	Low-voltage operation possible, Synchronous rectification
MB39A123	6ch	2MHz	1.7V to 11V	±1%	LQFP48, BCC48++	◎	◎	◎	◎	Available	Synchronous rectification, control for each channel, soft start-enabled, short-circuit detection possible for external input
MB3881	8ch	800kHz	1.8V to 13V	±1%	LQFP64	–	◎	◎	○	Available	Synchronous rectification, External synchronization support possible

Used in portable products such as digital still cameras and camcorders.
◎: Recommended ○: Possible with the addition of outside parts

■ Monitoring of power supply voltage

Model	Function	Detection voltage	Power supply voltage	Package	Remarks
MB3761	Voltage detector	1.2 V (reference voltage)	2.5V to 40V	SOP8	–
MB3771	Power supply voltage monitor	Voltages other than 4.2 V	3.5V to 18V	SOP8	–
MB3773	MB3771 + watchdog timer	optionally available	3.5V to 16V	SOP8	–
MB3793-XX	Power supply voltage monitor with dual-system watchdog timer	4.5V(–45), 4.2V(–42), 3.4V(–34A), 3.0V(–30A), 3.7V(–37A)	6V(Max)	SOP8, SSOP8	Low-consumption current (Bi-CMOS)
		2.7V(–27A), 2.8V(–28A)	4V(Max)		

Used in power supplies for various applications, including automobiles, hot water systems, copiers, VCRs, hard-disk drives, general OA equipment, measuring instruments, and pachinko parlor pinball machines.

■ For rechargeable batteries (for charging control)

Model	Oscillation frequency (maximum)	Power supply voltage	Output voltage	Accuracy		Package	Method	FET compatible	Remarks
				Ta=25˚C	Ta=-30˚C to 85˚C				
MB3832A	500kHz	3.6V to 18V	Optional	±0.5%	±1.0%*	SSOP20	Step down	Available	1 to 3 cells, Output voltage can be set externally.
MB3874	500kHz	7V to 25V	12.6V	±0.8%	±1.0%	SSOP24	Step down	Available	3-cell, Parallel charging, dynamically controlled charging
MB3875	500kHz	7V to 25V	12.6V	±0.8%	±1.0%	SSOP24	Step down	Available	3-cell, Dynamically controlled charging possible
MB3876	500kHz	7V to 25V	16.8V	±0.8%	±1.0%	SSOP24	Step down	Available	4-cell, Parallel charging, dynamically controlled charging
MB3877	500kHz	7V to 25V	16.8V	±0.8%	±1.0%	SSOP24	Step down	Available	4-cell, Dynamically controlled charging possible
MB3878	500kHz	7V to 25V	4.2V/cell	±0.8%	±1.0%	SSOP24	Step down	Available	1 to 4 cells, Dynamically controlled charging possible
MB3887	500kHz	8V to 25V	4.2V/cell	±0.5%	±0.74%*	SSOP24	Step down	Available	1 to 4 cells, Dynamically controlled charging possible, High-charging current accuracy
MB3888	500kHz	8V to 25V	Optional	±0.5%	±0.74%*	SSOP20	Step down	Available	1 to 4 cells, High-charging current accuracy
MB3879	500kHz	8V to 25V	12.6V/16.8V	±0.8%	±1.0%	LQFP48	Step down	Available	Supports 3/4 cells, 2-mode charging possible (dynamically controlled charging, differential charging)
			12.3V/16.4V	±0.9%	±1.1%				
MB39A113	500kHz	8V to 25V	4.2V/cell	±0.5%	±0.74%*	SSOP24	Step down	Available	1 to 4 cells Built-in 2-mode constant current control circuit Buit-in low voltage protection function Constant voltage control function enables detection of false full charge Built-in function to detect overvoltage in charging voltage
MB39A114	500kHz	8V to 25V	12.6V/16.8V	±0.5%	±0.74%*	SSOP24	Step down	Available	3/4 cells Built-in 2-mode constant current control circuit Buit-in low voltage protection function Constant voltage control function enables detection of false full charge Built-in function to detect overvoltage in charging voltage Built-in output setting resistor Built-in function to switch output setting voltage
MB39A119	1MHz	8V to 25V	4.2V/cell	±0.5%	±0.74%*	QFN28	Step down	Available	1 to 4 cells, Buit-in 2 mode constant current control circuit Built-in AC adaptor detection function Built-in off time control function Constant voltage control function enables detection of false full charge Synchronous rectification for Nch MOS FET
MB39A125	500kHz	8V to 25V	4.2V/cell	±1%	±0.74%*	SSOP24,	Step down	Available	1 to 4 cells, Dynamically controlled charging possible ACOK function included
MB39A126	500kHz	8V to 25V	12.6V/16.8V	±1%	±0.8%*	SSOP24,	Step down	Available	3/4 cells, Dynamically controlled charging possible ACOK function included
MB39A129	2MHz	8V to 25V	4.1V/4.2V/cell	±0.3%	±0.5%*	TSSOP-24, SSOP-24	Step down	Available	2, 3, 4 cells, Charging voltage can be set without externally attached resistor Charging current can be set without externally attached resistor Dynamically controlled charging possible ACOK function included

Used in portable products that use Li-ion batteries, such as notebook computers. *: Ta = –10 ˚C to 85 ˚C

■ Power management switches

Model	Consumption current	On resistance	Drive current	Switch voltage	Package	Remarks
MB3841	0A(Sw OFF)	0.045Ω	2A(Max)	5.5V(Max)	SOP8	1 channel USB
MB3842	0A(Sw OFF)	0.1Ω	0.6A(Max)	5.5V(Max)	SSOP20	2 channel USB Switching changeover logic differs for the MB3842 and MB3845.
MB3845						

Used in notebook computers with power management functions.

For detailed electric properties and operating conditions, refer to the data sheet of each product.
URL : http://edevice.fujitsu.com/system/mbynavi/assppwr/en/search/