

Lithium-ion battery charge control IC (Built-in system path switch for switching between AC adaptor/USB)

MM3539

Outline

This IC contains built-in system path switch for switching between AC adaptor/USB and battery charge control function. With these functions, this IC monitors three power supplies constituted by an AC adaptor, the USB port, and lithium-ion secondary battery and controls system drive power supply and charging. In order to implement safe and secure charging to

comply with **JEITA guideline**, charging pressure and current can be changed when battery temperature is high or low. battery status can be monitored in detail by built-in ADC for battery voltage and monitoring temperature. This IC contains built-in real time clock.

Features

(Unless otherwise specified, Ta=25°C)

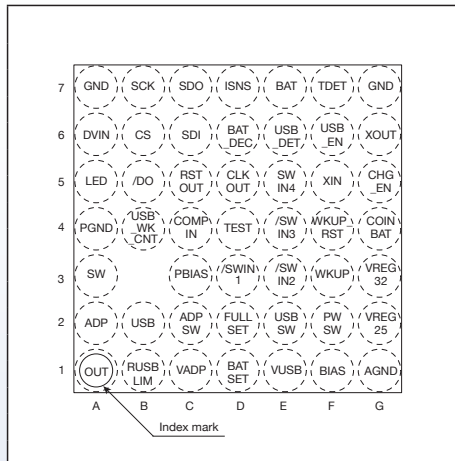
- (1) Synchronous Buck Lithium-ion / Lihium-polymer charge control
- (2) Built-in System path SW
- (3) Overvoltage protection circuit (OVP) control function (PchMOS external controller)
- (4) I²C interface allows the charging voltage, and current control and display the state. (such as status and configuration of error)
- (5) Compliance with JEITA guideline
- (6) When the USB current limit is supported by built-in battery
- (7) When charging, the system priority function
- (8) To reduce heat generation during charging, Built-in thermal regulation
- (9) Consumption current 1 (ADP mode, USB mode)1.5mA typ. 3mA max.
- (10) Consumption current 2 (BAT mode).....30µA typ. 50µA max.
- (11) ADP/USB UVLO4.20V
- (12) VADP/VUSB OVP5.70V
- (13) BAT pin voltage for CV control.....4.20V±30mV
- (14) BAT pin voltage of overvoltage detection4.35V
- (15) Current limit of USB path (100mA).....80mA typ. 100mA max.
(500mA).....460mA typ. 500mA max.
- (16) ADC included.....Battery voltage (8bit), TDET pin voltage (8bit)
- (17) Real time clock included

Applications

- (1) Mobile phones, Smart phones
- (2) Portable music players
- (3) Tablet PCs
- (4) Digital still cameras
- (5) Portable games

Pin assignment

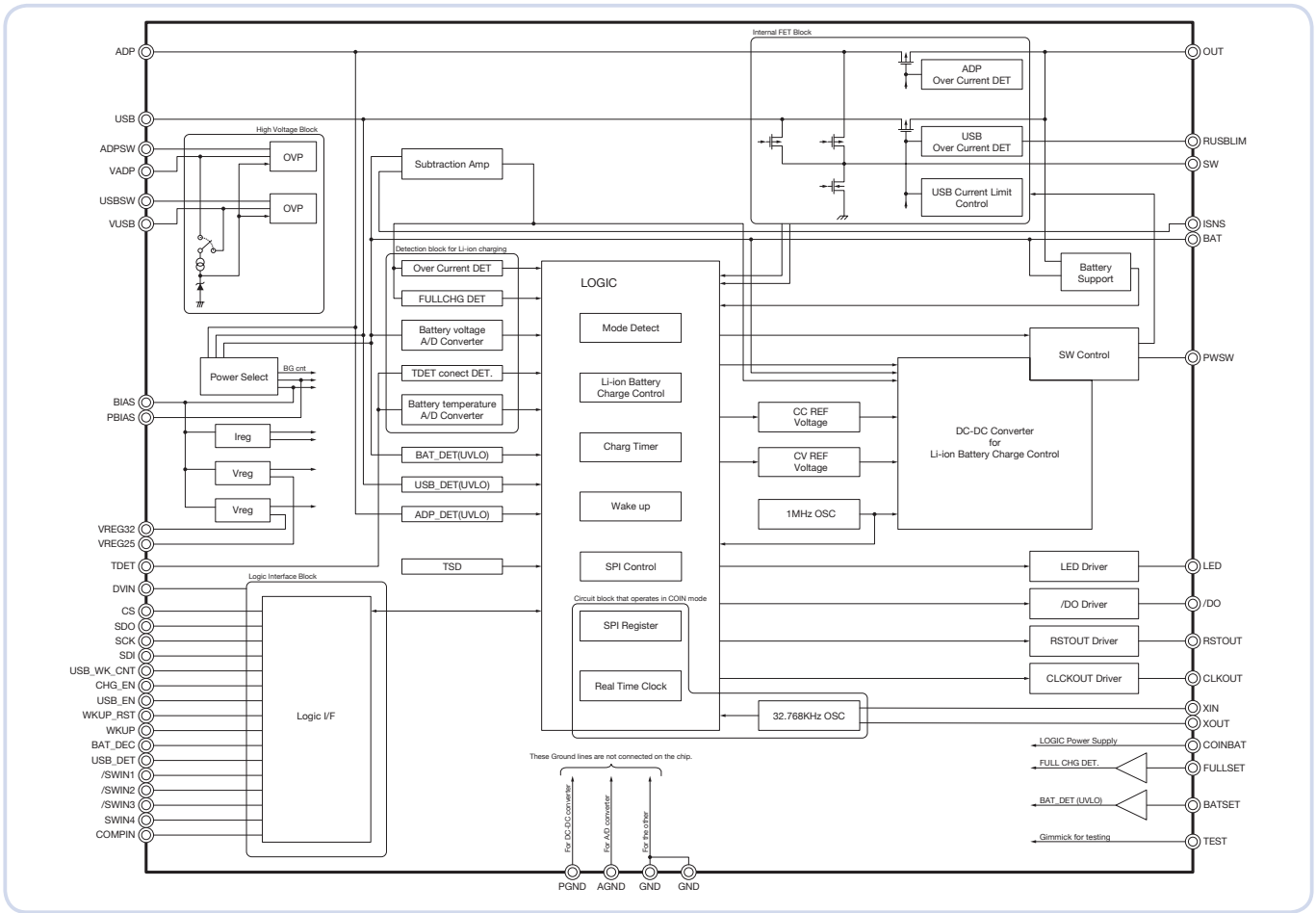
WLCSP-48B



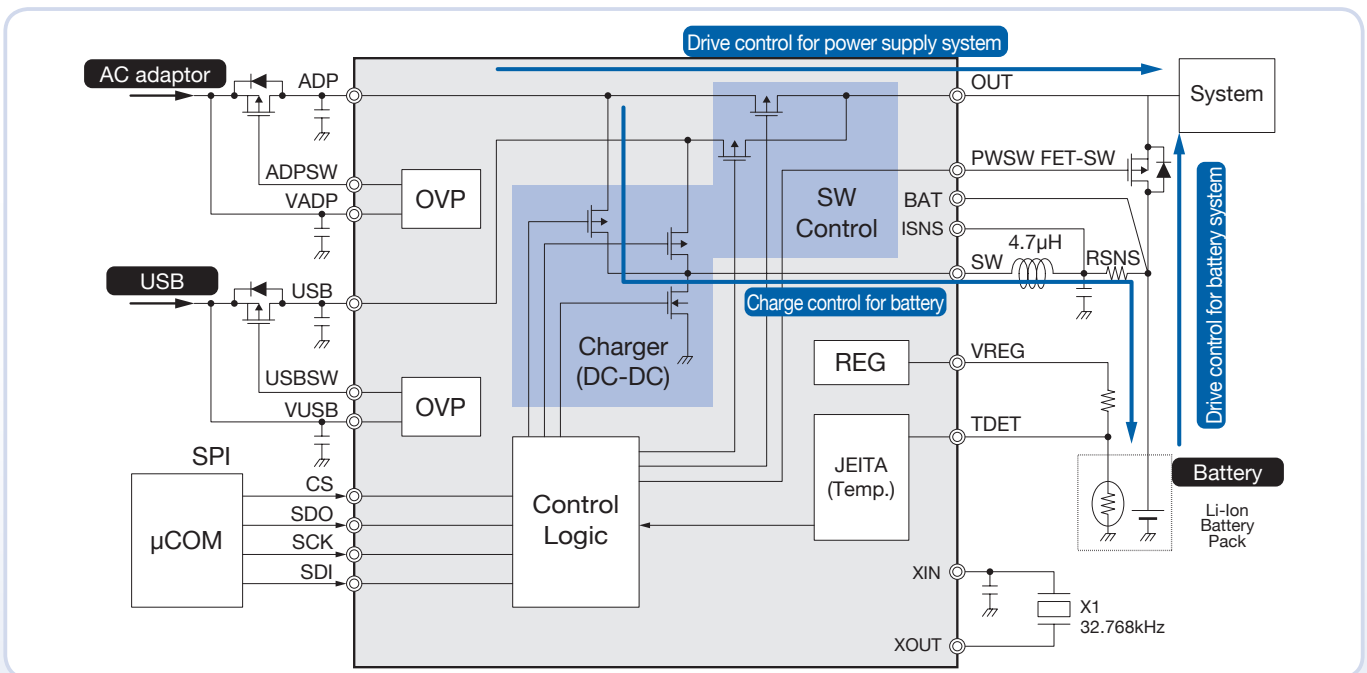
Pin no.	Symbol	Pin no.	Symbol	Pin no.	Symbol
A1	OUT	C4	COMPIN	E6	USB_DET
A2	ADP	C5	RSTOUT	E7	BAT
A3	SW	C6	SDI	F1	BIAS
A4	PGND	C7	SDO	F2	PWSW
A5	LED	D1	BATSET	F3	WKUP
A6	DVIN	D2	FULLSET	F4	/WKUP_RST
A7	GND	D3	/SWIN1	F5	CHG_EN
B1	RUSBLIM	D4	TEST	F6	USB_EN
B2	USB	D5	CLKOUT	F7	TDET
B4	USB/_WK_CNT	D6	BAT_DEC	G1	AGND
B5	/DO	D7	ISNS	G2	VREG25
B6	CS	E1	VUSB	G3	VREG32
B7	SCK	E2	USBSW	G4	COINBAT
C1	VADP	E3	/SWIN2	G5	XIN
C2	ADPSW	E4	/SWIN3	G6	XOUT
C3	PBIAS	E5	SWIN4	G7	GND

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Block diagram



Typical application circuit



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Temperature sensor ICs