EV2617H-L-00A

3A, 1-Cell Li-Ion Battery Switching Charger With NVDC Power Path Management

DESCRIPTION

The EV2617H-L-00A is an evaluation board for MP2617H, a 3A/1.6MHz 1-cell switching charger with power path management.

MP2617H integrates a synchronous BUCK regulator for powering the system output and charging the battery. For USB mode, the input current limit can be programmed to 450mA and 825mA via the logic pins to cover the USB2.0 and USB3.0. For the adapter input, the input current is also limited to avoid overloading the adapter. The value can be programmed up to 3A.

MP2617H regulates the system voltage for powering the external load and charge the battery simultaneously. When the current limit is hit, the system load is satisfied in priority, the charger will take the leavings to charge the battery. Additionally, the smart power path control will make the charge switch as a connection from battery to the system to supplement power the load if the system requirement increases over the input limited power or the input is removed.

ELECTRICAL SPECIFICATION

Parameter	Symbol	Value	Units
Input Voltage	V_{IN}	4.5 to 14	V
Battery Voltage	V_{BATT}	0 to 4.2	V
SYS Voltage	V_{SYS}	3.5 to 4.4	V
Input Current Limit	I_{IN} Limit	1.5	A
Charge Current	I_{CHG}	2	A
SYS Current	I_{SYS}	0-3	A
V_{IN} Clamp Voltage	V_{IN} Limit	4.71	V

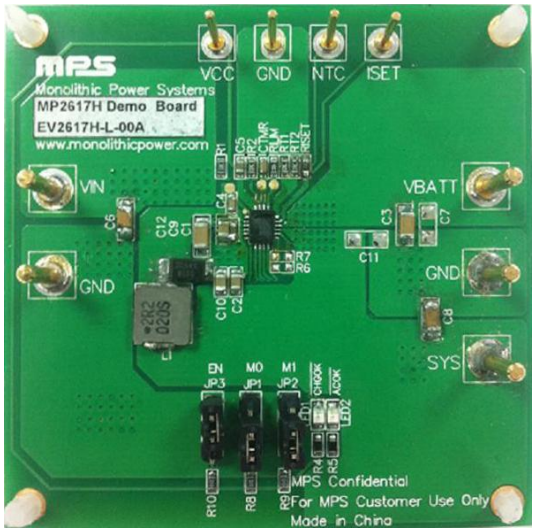
FEATURES

- 4V to 14V Operating Input Voltage
- Smart Power Path Management
- Five Control Loops: Input Current Limit, Input Voltage Limit, Constant Charge Current, Terminal Battery Control and Thermal Fold-Back.
- 1.6MHz Switching Frequency
- Programmable Input Current Limit
- Programmable Charge Current
- Single Inputs for USB and AC adapter
- Cover USB2.0 and USB3.0 Input Specification
- Fully Integrated Power Switches
- No External Blocking Diode and Sense Resistor Required
- Charging Operation Indicator
- Built-in Programmable Charging Timer
- Thermal Limiting Regulation on Chip
- Battery Temperature Monitor

APPLICATIONS

- Smart Phones
- Portable Hand-Held Terminals
- E-BOOK
- GPS
- TPC
- MIFY

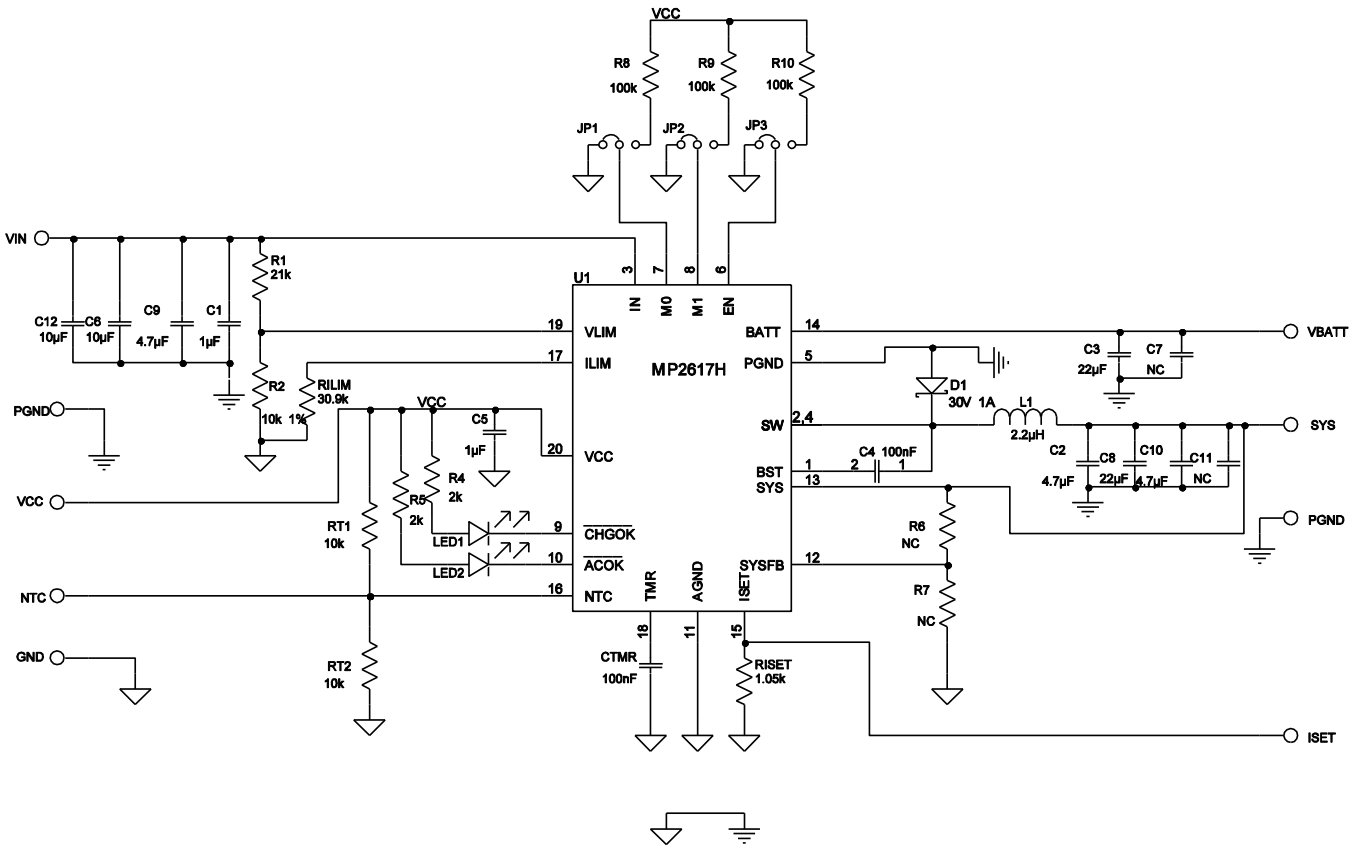
EV2617H-L-00A EVALUATION BOARD



(L x W x H) 2.48” x2.48” x 0.063”
(6.3cm x 6.3cm x 0.16cm)

Board Number	MPS IC Number
EV2617H-L-00A	MP2617H

EVALUATION BOARD SCHEMATIC



EV2617H-L-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
2	C1, C5	1μF	Ceramic Capacitor; 25V;X7R	0603	muRata	GRM188R71C105KA12D
3	C2, C9, C10	4.7μF	Ceramic Capacitor; 25V;X5R	0805	muRata	GRM21BR61C475KA12L
2	C3, C8	22μF	Ceramic Capacitor; 25V;X7R	1206	muRata	GRM31CR61E226KE15
2	C4, CTMR	100nF	Ceramic Capacitor; 50V;X7R	0603	muRata	GRM188R71H104KA93D
2	C6, C12	10μF	Ceramic Capacitor; 25V;X5R	1206	muRata	GRM31CR61E106KA12L
2	C7, C11	NC				
1	L1	2.2μH	Inductor, 37mOhm;5.1A	SMD	TOKO	FDA0620-2R2M
1	LED1	BL-HUF35A-TRB	LED;红光;	0805	BRIGHT LED	BL-HUF35A-TRB
1	LED2	BL-HGE35A-TRB	LED;绿光;	0805	BRIGHT LED	BL-HGE35A-TRB
1	R1	21k	Film Resistor;1%;	0603	Yageo	RC0603FR-0721KL
3	R2, RT1, RT2	10k	Film Resistor;1%;	0603	Yageo	RC0603FR-0710KL
2	R4, R5	2k	Film Resistor;1%;	0603	Yageo	RC0603FR-072KL
2	R6, R7	NC				
3	R8, R9, R10	100k	Film Resistor;5%;	0603	Yageo	RC0603JR-07100KL
1	RILIM	30.9k	Film Resistor;1%	0603	Yageo	RC0603FR-0730K9L
1	RISET	1.05k	Film Resistor;1%	0603	Yageo	RC0603FR-071K05L
1	D1	30V/1A	Schottky Diode	SMA	Diodes	B130
1	U1				MPS	MP2617H
5	VIN, GND, VBATT, VSYS, GND		2.0 公针			
4	VCC, GND, NTC, ISET		1.0 公针			
2	JP1, JP2, JP3		2.54mm 排针			

PRINTED CIRCUIT BOARD LAYOUT

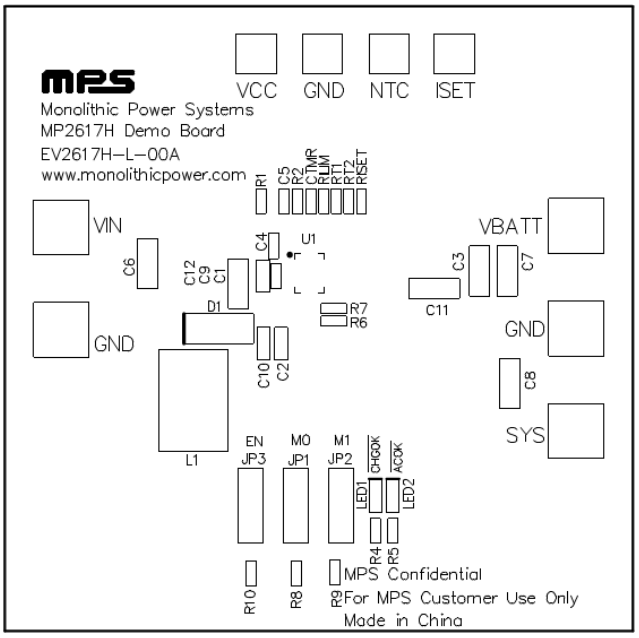


Figure 1— Top Silk Layer

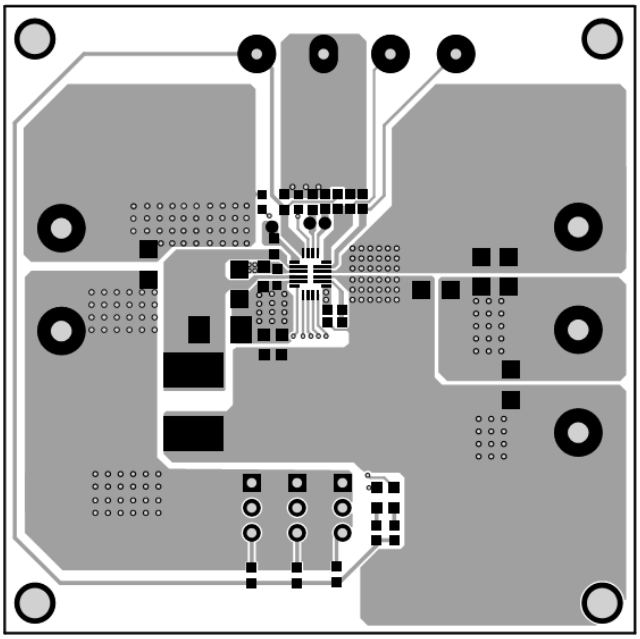


Figure 2—Top Layer

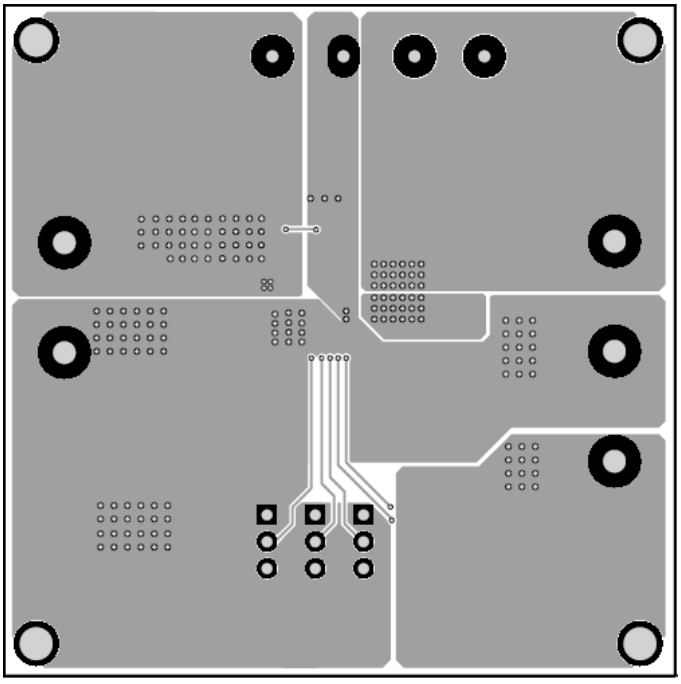


Figure 3—Bottom Layer