EV1519DQL-00A
1x, 1.5x, 2x High Efficiency Charge Pump 3 White LED Driver Evaluation Board

The Future of Analog IC Technology™

DESCRIPTION

The EV1519DQL-00A is an evaluation board for the MP1519, a fully automatic driver for powering three white LEDs, with up to 4V forward voltage, from a single Li-Ion or three NiMH cells. The driver performs all of the sensing and control to run the LEDs at an optimum charge pump ratio for efficiency without an expensive inductor. The driver allows PWM operation to support brightness control.

The tiny 3mm x 3mm QFN16 package and small external capacitors allow for the most compact white LED solution available.

ELECTRICAL SPECIFICATIONS

| Parameter	Symbol	Value	Units
# of WLEDs		3	
Input Voltage	V_{IN}	2.5 – 5.5	V
LED Current	I_{LED}	20	mA

FEATURES

- 2% LED Current Matching
- High Efficiency (>93%)
- Current Source Outputs
- No Ballast Resistors Required
- 1x, 1.5x and 2x Automatic Modes
- Constant Frequency Operation
- Automatic LED Detection
- High and Low Frequency PWM Capability
- 2.5V to 5.5V Operation
- Less than 1µA Leakage during Shutdown
- Detects Changes in Battery Level
- No External Schottky Diode Required
- Soft-Start and Soft Switching Operation

APPLICATIONS

- Cell Phones
- PDA or Hand Held Computers
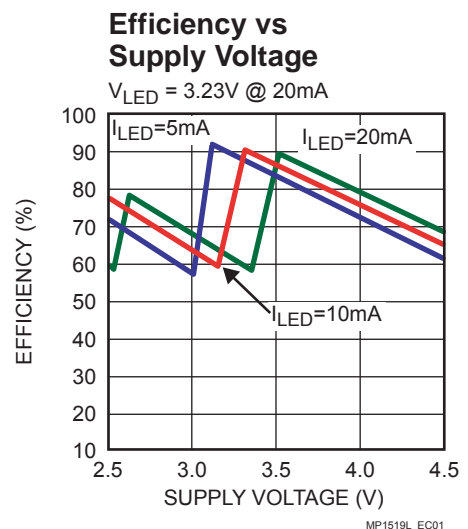- White LED Application at 3.6V Supply

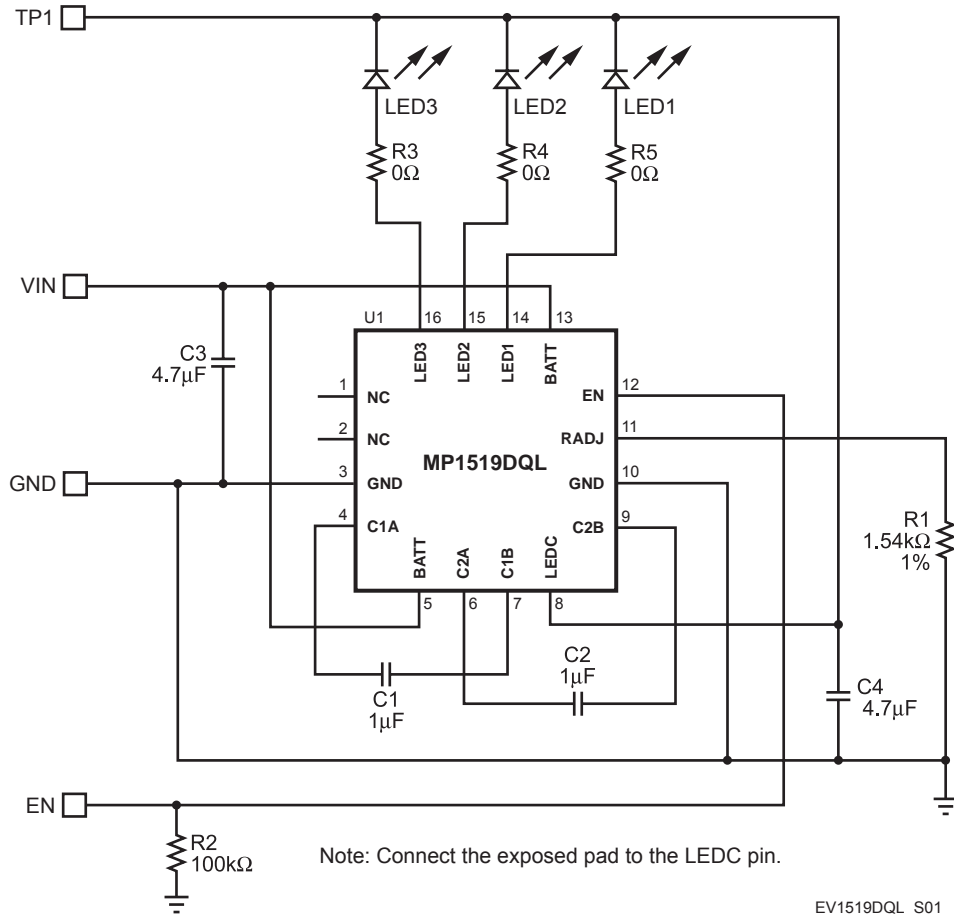"MPS" and "The Future of Analog IC Technology" are Trademarks of Monolithic Power Systems, Inc.

EV1519DQL-00A EVALUATION BOARD
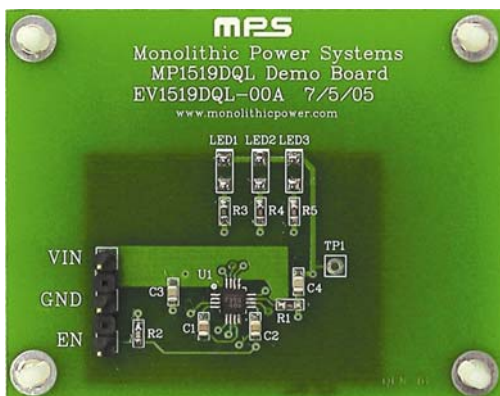
Dimensions (2.3"X x 1.8"Y x 0.4"Z)

Board Number	MPS IC Number
EV1519DQL-00A	MP1519DQL

Efficiency vs Supply Voltage

V_{LED} = 3.23V @ 20mA

MP1519L_EC01

EVALUATION BOARD SCHEMATIC

EV1519DQL_S01

Note: Connect the exposed pad to the LEDC pin.

EV1519DQL-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
2	C1, C2	1µF	Ceramic Cap., 10V, X7R	0805	TDK	C2012X7R1A105K
2	C3, C4	4.7µF	Ceramic Cap., 6.3V, X5R	0805	TDK	C2012X5R0J475K
3	LED1, LED2, LED3		Not Stuffed			
1	R1	1.54kΩ	Resistor, 1%	0805	Panasonic	ERJ-6ENF1541V
1	R2	100kΩ	Resistor, 5%	0805	Panasonic	ERJ-6GEYJ104V
3	R3, R4, R5	0Ω	Resistor, 5%	0805	Yageo	9C08052A0R00JLHFT
1	U1		MP1519DQL	QFN16 (3x3)	MPS	MP1519DQL

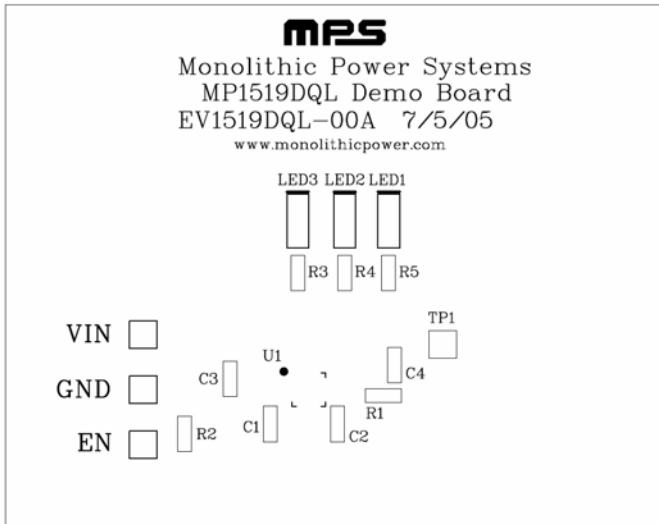## PRINTED CIRCUIT BOARD LAYOUT

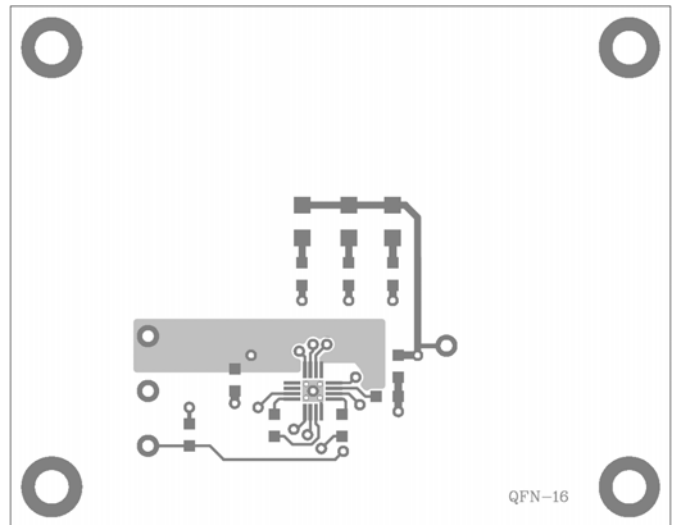**Figure 1—Top Silk Layer**

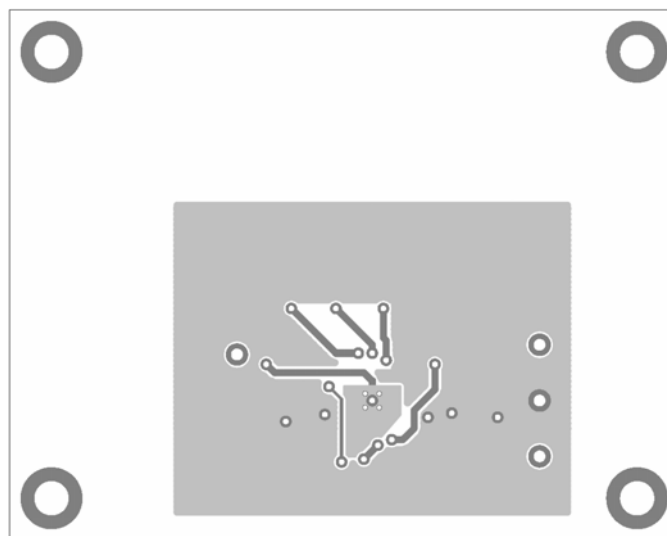**Figure 2—Top Layer**

Figure 3—Bottom Layer

QUICK START GUIDE

1. Solder LED1 – LED3 to the board.

2. Attach the positive and negatives terminals of the power supply (2.5V – 5.5V) to the VIN and GND pins, respectively.

3. Drive EN high to enable the MP1519DQL. Leave EN disconnected to disable the MP1519DQL.

4. To use burst mode brightness control, drive EN with a PWM signal.