



The Future of Analog IC Technology®

EV3021DQ-00A

1x, 1.5x, 2x Auto-Adjust Charge Pump White LED Backlight Evaluation Board

DESCRIPTION

The EV3021DQ-00A is the Evaluation Board for the MP3021, a WLED driver that can drive up to 4 backlight WLEDs at up to 30mA each. Backlight brightness can be adjusted with a 5-bit register plus one bit for precise low brightness control.

The MP3021 employs an efficient inductorless charge pump with 1x, 1.5x and 2x automatic mode control to achieve high efficiency power conversions.

Monolithic Power System's single wire MPC™ serial data link provides a simple and fast interface used to enable, disable and set current levels for each LED. In addition, soft-start limits the inrush current during startup and mode switching.

ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Value	Units
Input Voltage	V_{IN}	2.5 – 5.5	V
# of WLEDs		4	
LED Current	I_{LED}	30	mA

FEATURES

- Backlight: up to 4 WLEDs at 30mA Each
- Single Wire Serial Bus (MPC™ Serial Data Link)
Simple, Low Overhead Solution
Fast Data Transfer Rate
- Thermal Shutdown Protection
- Under-Voltage Protection
- Available in a 3mm x 3mm 16-Pin QFN Package

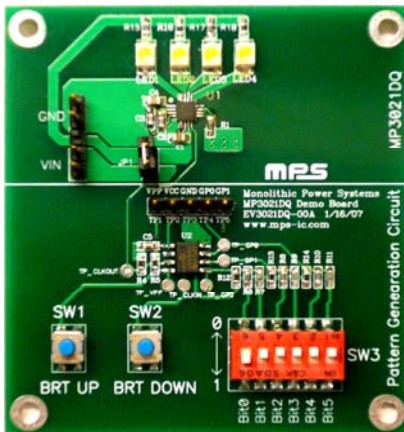
APPLICATIONS

- Cellular Phones
- PDA Phones
- PDAs

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

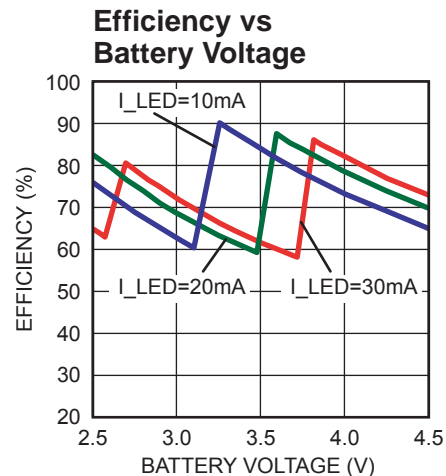
MPC is a Trademark of Monolithic Power Systems, Inc.

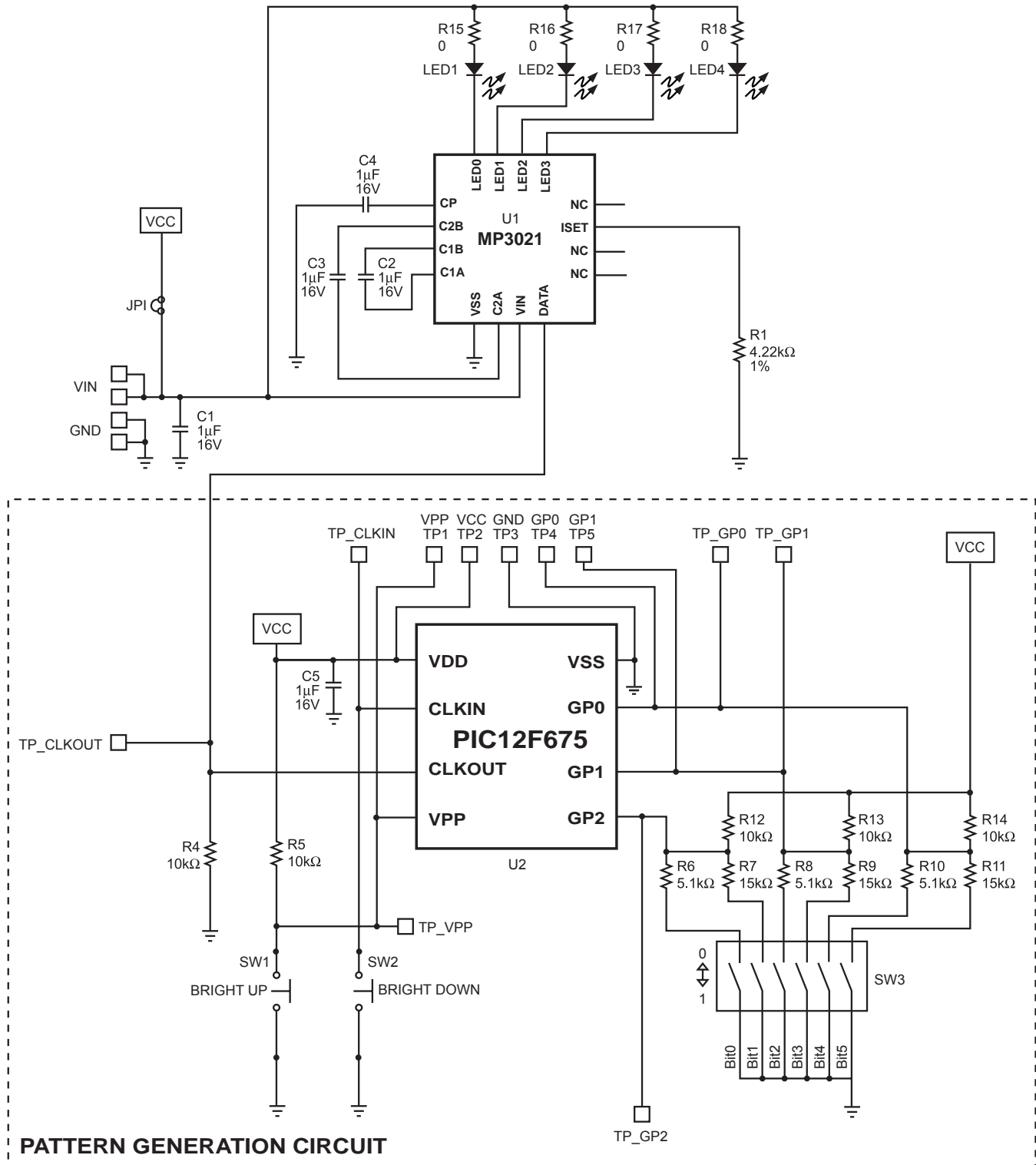
EV3021DQ-00A EVALUATION BOARD



(L x W x H) 2.6" x 2.5" x 0.4"
(6.6cm x 6.4cm x 1.0cm)

Board Number	MPS IC Number
EV3021DQ-00A	MP3021DQ



EVALUATION BOARD SCHEMATIC


EV3021DQ-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
4	C1,C2,C3,C4	1 μ F	16V/X7R Ceramic Cap.	SM0603	muRata	GRM188R71C105KA
4	LED1~LED4	NS	No Stuff			
1	R1	4.22k Ω	Film Res, 1%	603	Panasonic	ERJ-3EKF4221V
4	R15~R18	0 Ω	Film Res, 5%	603	Panasonic	ERJ-3GEY0R00V
1	U1		White LED Driver	3x3 QFN16	MPS	MP3021DQ

EV3021DQ-00A PATTERN GENERATION CIRCUIT BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
1	C5	1 μ F	16V/X7R Ceramic Cap.	SM0603	muRata	GRM188R71C105KA
1	SW3	6 POS	Top slide DIP switch	DIP 12	Digi-Key	CKN1290-ND
1	JP1		DIP Jumper		Digi-Key	WM18533-ND
3	R6,R8,R10	5.1k Ω	Film Res, 1%	603	Panasonic	ERJ-3EKF5111V
5	R4,R5,R12, R13,R14	10k Ω	Film Res, 1%	603	Panasonic	ERJ-3EKF1002V
3	R7,R9,R11	15k Ω	Film Res, 1%	603	Panasonic	ERJ-3EKF1502V
2	SW1,SW2	Switch	Push Switch	5mmx5mm	Digi-Key	CKN9020-ND
1	U2		Microcontroller	SO-8	Microchip	PIC12F675

PRINTED CIRCUIT BOARD LAYOUT

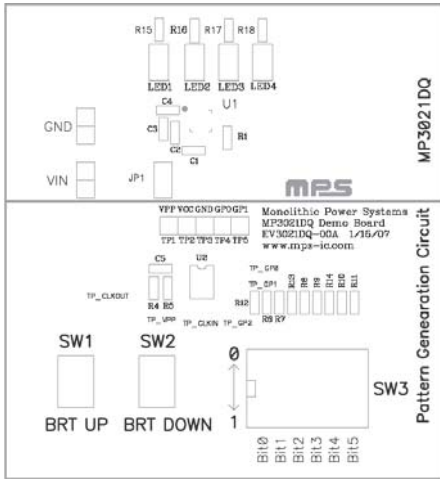


Figure 1—Top Silk Layer

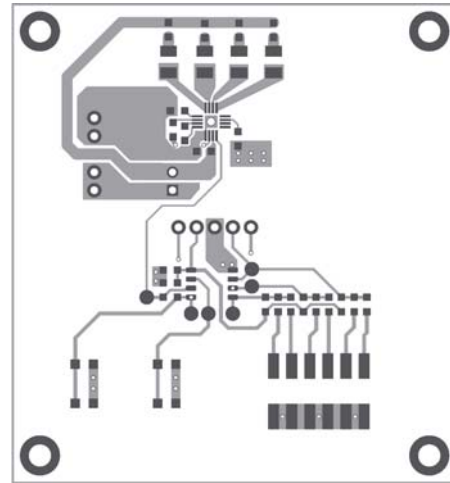


Figure 2—Top Layer

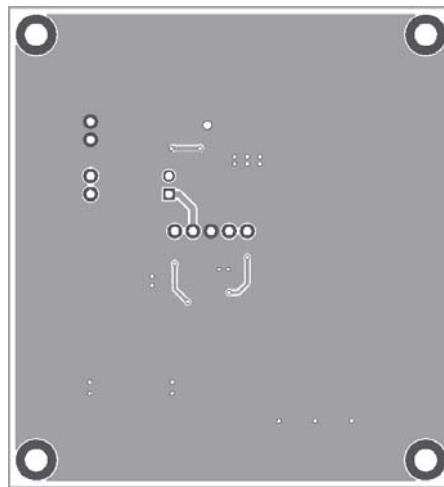


Figure 3—Bottom Layer