

DESCRIPTION

The EV6001DN-00B is an evaluation board for the MP6001, a monolithic Flyback DCDC converter. This evaluation board is capable of delivering up to 2W output power. The MP6001 has an internal soft-start, auto-retry, and incorporates over current, short circuit, and over-voltage protection. It can also skip cycles to maintain zero load regulation. This device is available in an 8-pin SOIC package with an exposed pad.

ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Value	Unit
Input Voltage	VIN	36–75	V
Output Voltage	VOUT	200	V
Output Current	IOUT	10	mA

FEATURES

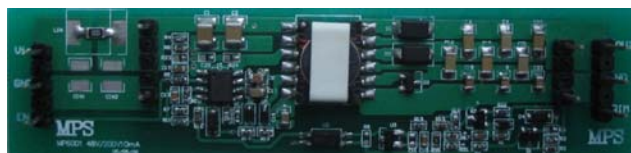
- Integrated 150V Power Switch
- Integrated 100V Startup Circuit
- Cycle-by-Cycle Current Limiting
- Duty Cycle Limiting with Line Feed Forward
- Input UVLO plus Over Voltage Protection
- Thermal Shutdown

APPLICATIONS

- Telecom Equipment
- VoIP Phones, Power over Ethernet (PoE)
- Distributed Power Conversions

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

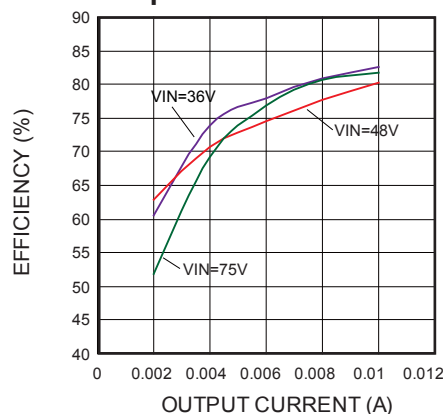
EV6001DN-00B EVALUATION BOARD



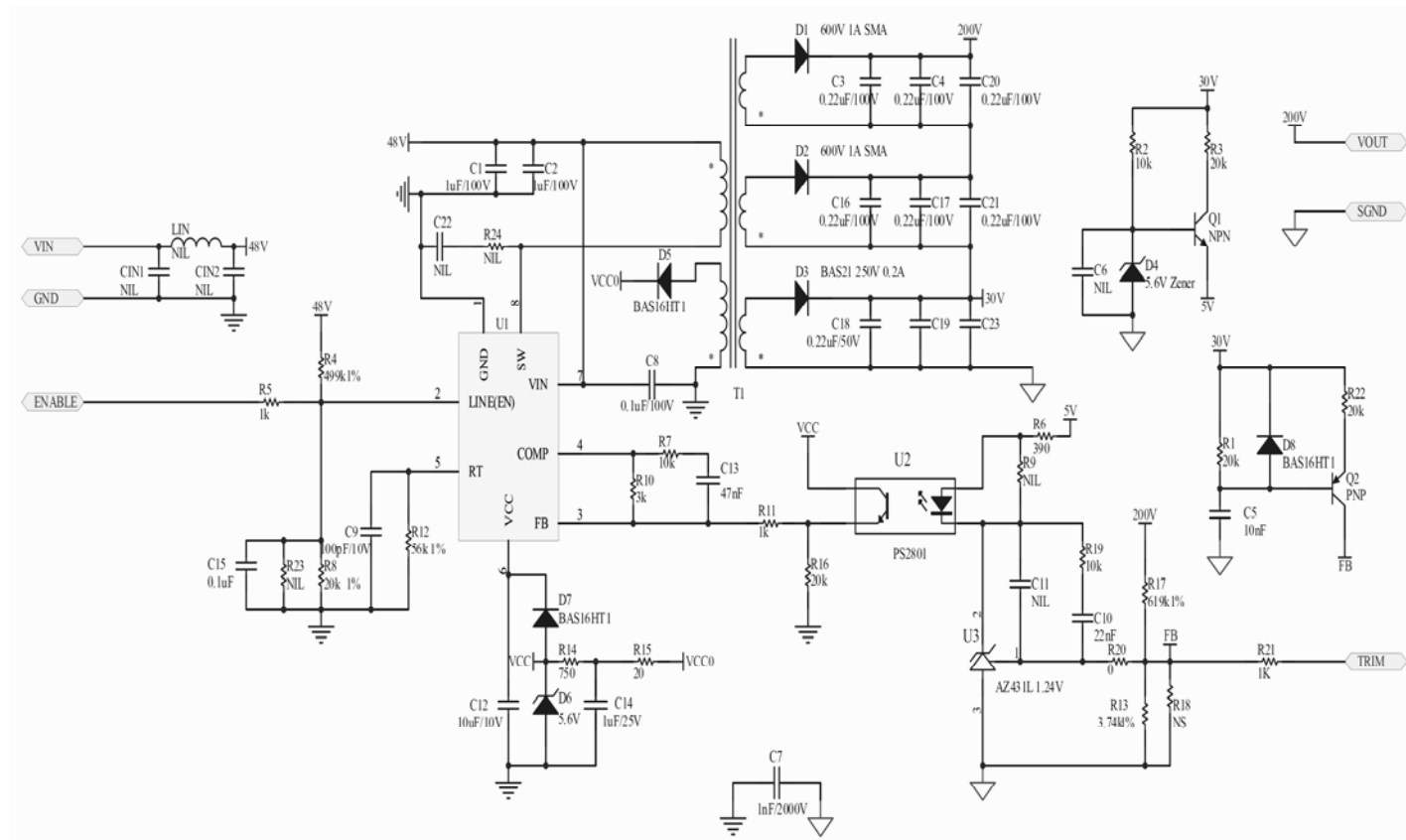
L×W×H: 98.0×24.5×8.7(mm)

Board Number	MPS IC Number
EV6001DN-00B	MP6001DN

Efficiency vs.
Output Current



EVALUATION BOARD SCHEMATIC



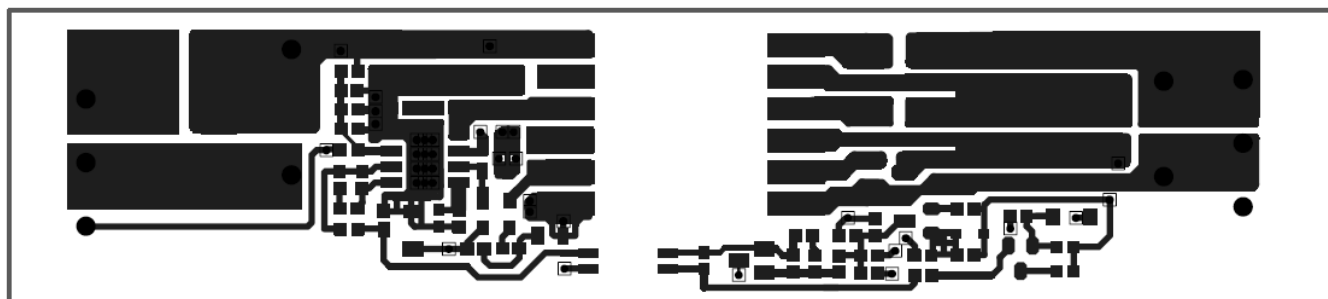
EV6001DN-00B BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Part Number
1	R1	20k	Film Res., 5%	0603	Yageo	RC0603JR-0720KL
1	R2	10k	Film Res., 5%	0603	Yageo	RC0603JR-0710KL
1	R3	20k	Film Res., 5%	0603	Yageo	RC0603JR-0720KL
1	R4	499k	Film Res., 1%	0603	Yageo	RC0603FR-07499KL
1	R5	1k	Film Res., 5%	0603	Yageo	RC0603JR-071KL
1	R6	390	Film Res., 5%	0603	Yageo	RC0603JR-07390RL
1	R7	10k	Film Res., 5%	0603	Yageo	RC0603JR-0710KL
1	R8	20k	Film Res., 1%	0603	Yageo	RC0603FR-0720KL
1	R9	NS				
1	R10	3k	Film Res., 5%	0603	Yageo	RC0603JR-073KL
1	R11	1k	Film Res., 5%	0603	Yageo	RC0603JR-071KL
1	R12	56k	Film Res., 1%	0603	Yageo	RC0603FR-0756KL
1	R13	3.74k	Film Res., 1%	0603	Yageo	RC0603FR-073K74L
1	R14	750	Film Res., 5%	0603	Yageo	RC0603JR-07750RL
1	R15	20	Film Res., 5%	0603	Yageo	RC0603JR-0720RL
1	R16	20k	Film Res., 5%	0603	Yageo	RC0603JR-0720KL
1	R17	619k	Film Res., 1%	0603	Yageo	RC0603FR-07619KL
1	R18	NS				
1	R19	10k	Film Res., 5%	0603	Yageo	RC0603JR-0710KL
1	R20	0	Film Res., 5%	0603	Yageo	RC0603JR-070RL
1	R21	1k	Film Res., 5%	0603	Yageo	RC0603JR-071KL
1	R22	20k	Film Res., 5%	0603	Yageo	RC0603JR-0720KL
1	R23	NS				
1	R24	NS				
2	C1,C2	1uF	Ceramic Cap 100V X7R	1210	Murata	GRM32ER72A105KA35L
6	C3,C4,C16,C17,C20,C21	0.22uF	Ceramic Cap 100V X7R	1206	TDK	C3216X7R2A224K
1	C5	10nF	Ceramic Cap 50V X7R	0603	TDK	C1608X7R1H103K
1	C6	NS				

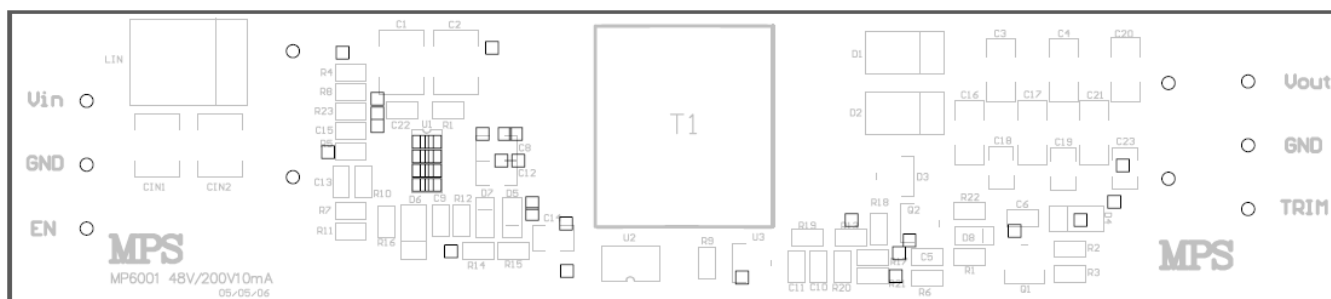
EV6001DN-00B BILL OF MATERIALS (continued)

Qty	Ref	Value	Description	Package	Manufacturer	Part Number
1	C7	1nF	Ceramic Cap 2kV X7R	1812	Murata	GR443QR73D102KW01L
1	C8	0.1uF	Ceramic Cap 100V X7R	0805	TDK	C2012X7R2A104K
1	C9	100pF	Ceramic Cap 50V X7R	0603	TDK	C1608X7R1H101K
1	C10	22nF	Ceramic Cap 50V, X7R	0603	TDK	C1608X7R1H223K
1	C11	NS				
1	C12	10uF	Ceramic Cap 10V X5R	0805	Murata	GRM21BR61A106KE19
1	C13	47nF	Ceramic Cap 50V X7R	0603	TDK	C1608X7R1H473K
1	C14	1uF	Ceramic Cap 25V X5R	0805	Murata	GRM216R61E105KA12D
1	C15	100nF	Ceramic Cap 50V X7R	0603	TDK	C1608X7R1H104K
3	C18,C19,C23	0.22uF	Ceramic Cap 50V X7R	0805	TDK	C2012X7R1H224K
1	C22	NS				
2	CIN1,CIN2	NS				
1	U1		MPS regulator	SO8	MPS	MP6001DN
1	U2		Opto-coupler	SSOP4	NEC	PS2801-1
1	U3		1.24V Shunt Regulator	SOT-23	BCD	AZ431L
1	Q1		40V NPN Transistor	SOT-23	ON Semi	MMBT3904LT1
1	Q2		40V PNP Transistor	SOT-23	ON Semi	MMBT3906LT1
2	D1,D2		Diode Switch 1A 600V	SMA	ON Semi	MURA160T3/MRA4005T3
1	D3		Diode Switch 200mA 250V	SOT-23	Diodes Inc	BAS21
2	D4,D6		Diode Zener 5.6V 500mW	SOD-123	ON Semi	MMSZ5V6T1
3	D5,D7,D8		Diode Switch 0.2A 75V	SOD-323	Diodes Inc	BAS16HT1
1	T1		Flyback Transformer 0.2mH	SMD	Cooper	JX01-17673-R
1	LIN	NS				

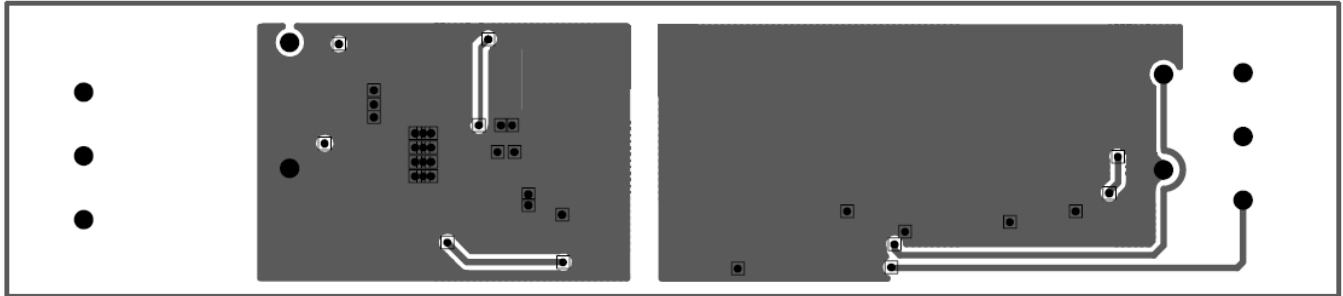
PRINTED CIRCUIT BOARD LAYOUT



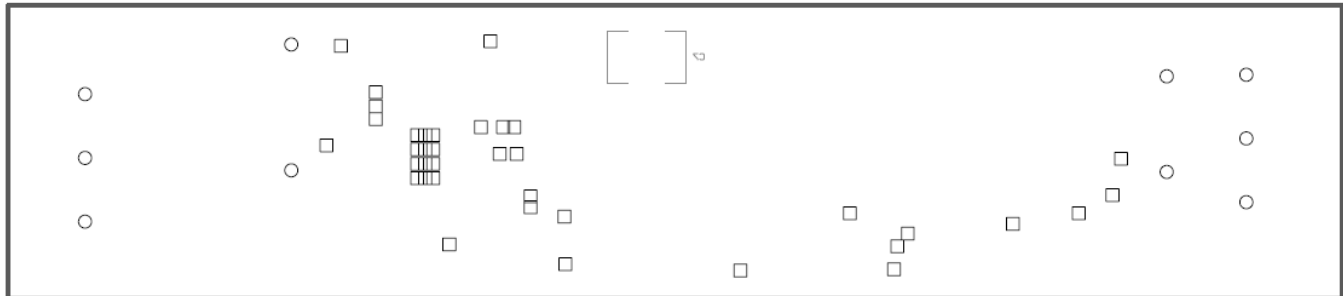
Top Layer



Top Silkscreen



Bottom Layer



Bottom Silkscreen

QUICK START GUIDE

1. Attach input voltage $36 \leq V_{IN} \leq 75V$ and input ground to VIN and GND pins respectively.
2. During startup EN should be left HIGH or unconnected.
3. Connect Power Supply terminals to:
 - a. Positive (+): VOUT
 - b. Negative (-): GND
4. Turn power supply on and the board will automatically startup.
5. To use Enable function, apply a digital input to EN pin. Drive EN with 2.5V-5V to turn on the regulator, and drive EN less than 0.7V to turn it off.

NOTICE: The information in this document is subject to change without notice. Users should warrant and guarantee that third party Intellectual Property rights are not infringed upon when integrating MPS products into any application. MPS will not assume any legal responsibility for any said applications.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Monolithic Power Systems \(MPS\):](#)

[EV6001DN-00B](#)