

DESCRIPTION

The EV3361DK-00A is an evaluation board for the MP3361, a fast, highly efficient and precision high voltage photo-flash charger for xenon flash applications.

The peak current is 1.0A to ensure fast charging time. 0.5Ω internal power switch minimizes the conduction loss. 60V maximum SW operating voltage lowers transformer turns ratio and switching loss associated with the primary leakage inductance.

The board offers charge-ready indicator, flash mode.

FEATURES

- 1.0A Peak Charge Current
- 3.5% Charge Accuracy
- Charge-ready indicator
- Microcontroller controlled on/off, flash mode
- Integrated IGBT Driver

APPLICATIONS

- Digital Still Cameras
- Optical Film Cameras
- PDAs with Xenon Flash

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ELECTRICAL SPECIFICATIONS

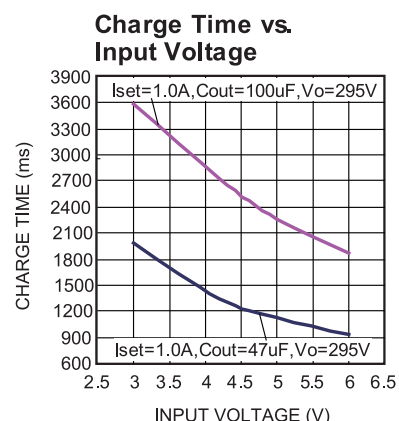
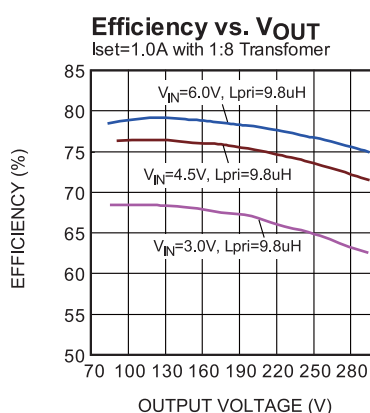
Parameter	Symbol	Value	Units
Input Voltage	V_{IN}	2.5-6	V
Supply Voltage	V_{CC}	2.5-6	V
Peak Charge Current	I_{peak}	1.0	A
Charge Voltage	V_o	295	V

EV3361DK-00A EVALUATION BOARD

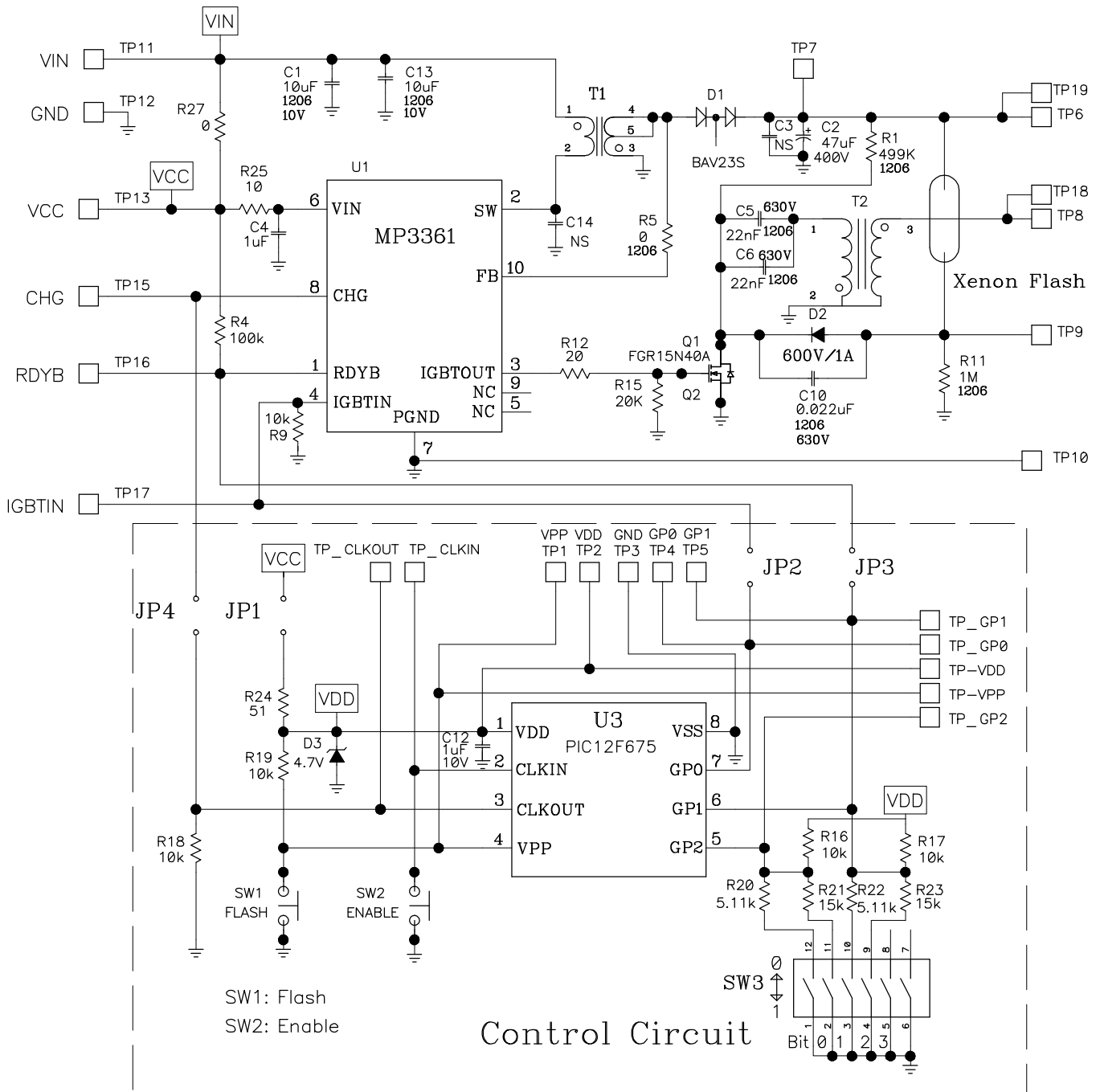


(L x W x H) 2.7" X 3.6" X 1.1"

Board Number	MPS IC Number
EV3361DK-00A	MP3361DK



EVALUATION BOARD SCHEMATIC



EV3361DK-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
2	C1, C13	10 μ F	Ceramic Cap. 10V, X7R	1206	MuRata	GRM31CR71A106K
1	C2	47 μ F	El. Al. Cap. 400V, 20%	D16xL25	United Chemi-Con	EKXG401ELL470ML25S
1	C4	1 μ F	Ceramic Cap. 10V, X7R	0603	MuRata	GRM188R71A105K
3	C5,C6,C10	22nF	Ceramic Cap. 630V, X7R	1206	TDK	C3216JB2J223K
0	C3	NS		1206		
0	C14	NS		0805		
1	R1	499k Ω	Film Resistor, 1%	1206	Yageo	9C12063A4993FKHFT
1	R4	100k Ω	Film Resistor, 1%	0603	Yageo	9C06031A1003FKHFT
1	R5	0 Ω	Film Resistor, 5%	1206	Yageo	9C12063A0R00JLHFT
1	R9	10k Ω	Film Resistor, 1%	0603	Yageo	9C06031A1002FKHFT
1	R11	1M Ω	Film Resistor, 1%	1206	Yageo	9C12063A1004FKHFT
1	R12	20 Ω	Film Resistor, 1%	0603	Yageo	9C06031A20R0FKHFT
1	R15	20k Ω	Film Resistor, 1%	0603	Yageo	9C06031A2002FKHFT
1	R25	10 Ω	Film Resistor, 5%	0603	Yageo	9C06031A10R0JLHFT
1	R27	0 Ω	Film Resistor 5%	0603	Yageo	9C06031A0R00JLHFT
1	D1	250V/400mA	Switching Diode	SOT-23	DIODES	BAV23S
1	D2	1A	Diode Switching 600V	SMA	VISHAY	RS1J-E3/61TGICT
1	Q1	400V	Flash N-Ch Logic IGBT	TSSOP-8	TOSHIBA	GT8G133
0	Q2	NS	Flash N-Ch Logic IGBT	SO-8		
1	T1	T-19-060	Transformer	SM	TOKYO Coil	T-19-060
1	T2	BO-02	Transformer	SM	TOKYO Coil	BO-02
	or	ZS1092	Transformer	SM	Triger Coil	ZS1092/0.047
0	TP6~TP10, TP18,TP19	NS				
1	VIN-IGBTIN		8-pin header, 2mm		SULLINS Elec.	PRPN081PAEN-RC
1	Flash	NS	Xenon Flash			
1	U1	MP3361DK	Photo Flash Charger	MSOP10, 3x3mm	MPS	MP3361DK

EV3361DK-00A CONTROL CIRCUIT BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
1	U3	EEPROM	Data EEPROM Memory	SO8	MicroChip	PIC12F675
1	C12	1 μ F	Ceramic Cap. 10V, X7R	0805	MuRata	GRM21BR71A105K
4	R16, R17, R18, R19	10k Ω	Film Resistor, 1%	0603	Yageo	9C06031A1002FKHFT
2	R20, R22	5.11k Ω	Film Resistor, 1%	0603	Yageo	9C06031A5111FKHFT
2	R21, R23	15k Ω	Film Resistor, 1%	0603	Yageo	9C06031A1502FKHFT
1	R24	51 Ω	Film Resistor, 1%	0603	Yageo	9C06031A51R0FKHFT
1	D3	4.7V	Zaener Diode 0.5W	SOD123	DIODES	BZT52C4V7
2	SW1, SW2	Switch	Push Switching button	6mm Square	Digi-Key	P12943STR-ND
1	SW3	6 pos	DIP Switching	DIP6	Digi-Key	CKN1290-ND
4	JP1~J P4	2-pin	2-pin Header, 2.54mm	2.54mm	Sullins	PTC02SAAN
3	Jumper 1, 2, 4	2-pin	2-pin Jumper 2.54mm			
0	Jumper 3	NS				
1	TP1~T P5		5-pin Header, 2.54mm	2.54mm	Sullins	PTC05SAAN

PRINTED CIRCUIT BOARD LAYOUT

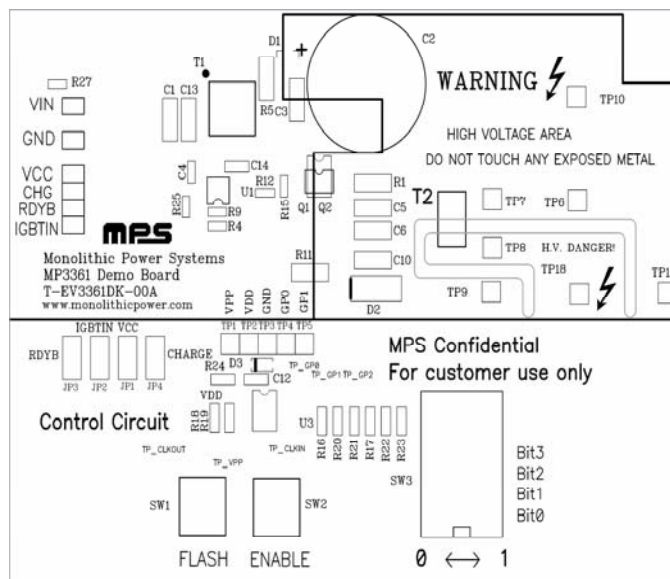


Figure 1—Top Silk Layer

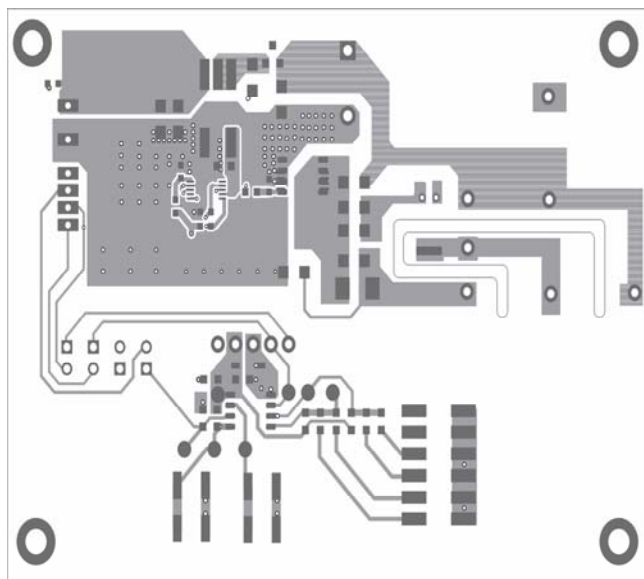


Figure 2—Top Layer

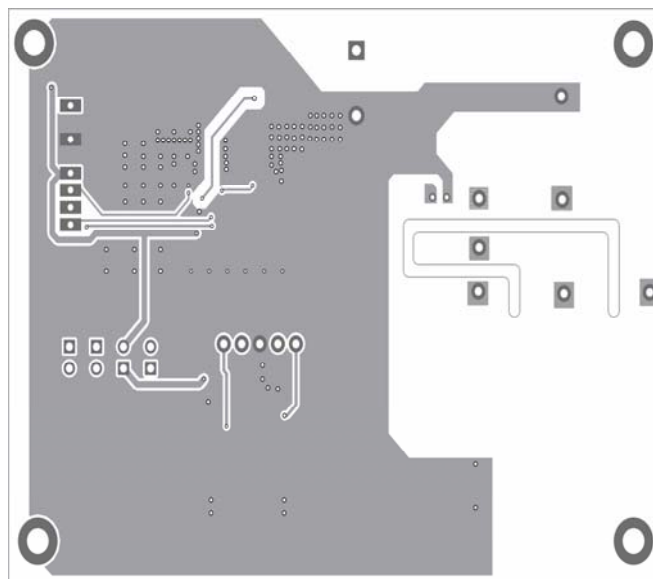


Figure 3—Bottom Layer

QUICK START GUIDE

1. Solder Q1, trigger coil-T2 and Xenon Flash tube the board if they are not populated.
2. Turn off the power supply.
3. Attach the positive terminal of the power supply (3V - 6V) to the VIN.
4. Attach the negative terminal of the power supply to GND pin.
5. Turn on the power supply.
6. Press "FLASH"-SW1 once to trigger the flash sequencing. First, the microcontroller will enable charge for certain time and then trigger the IGBT to light up the flash tube
7. "ENABLE"-SW2 serves only as a toggle SW to start/stop the charge, no flash will be triggered.

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