EV3361DK-00A

Integrated Photo Flash Changer IGBT Driver EV Board

The Future of Analog IC Technology

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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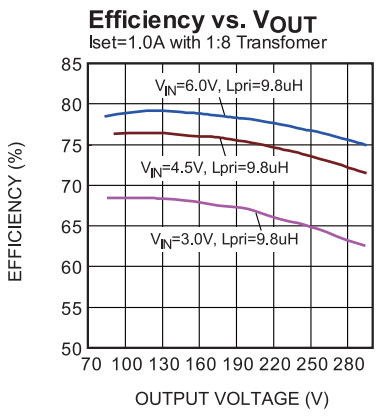
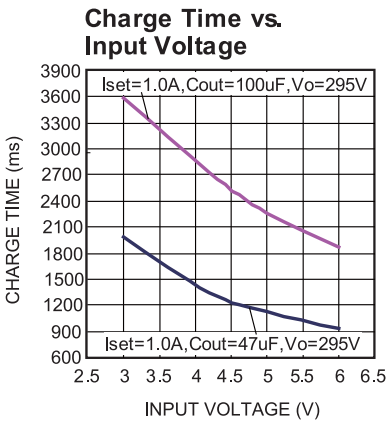
ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Value	Units
Input Voltage	V_{IN}	2.5-6	V
Supply Voltage	V_{CC}	2.5-6	V
Peak Charge Current	Ipeak	1.0	A
Charge Voltage	Vo	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





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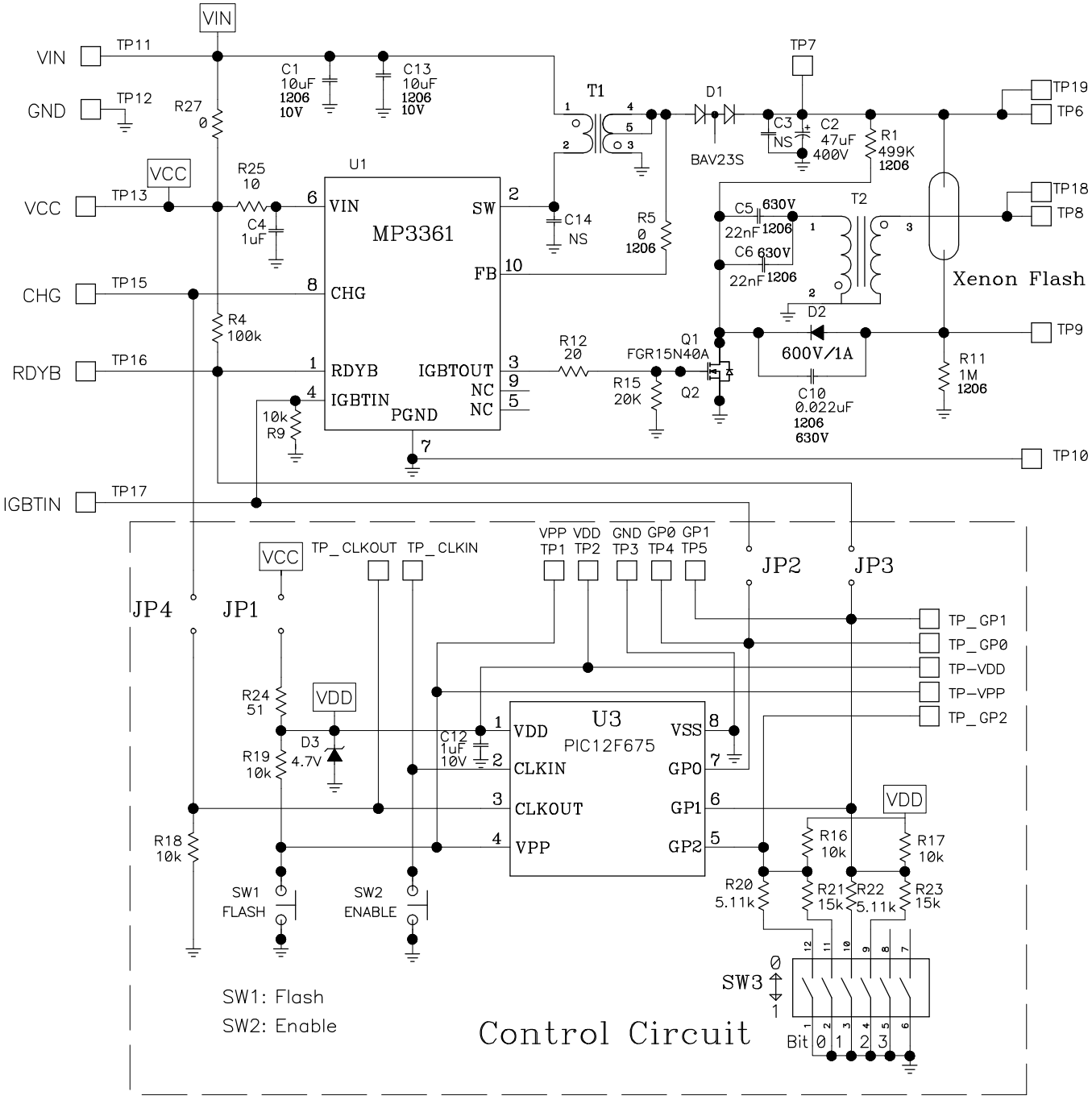
EVALUATION BOARD SCHEMATIC



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EV3361DK-00A BILL OF MATERIALS

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
2	C1, C13	10µF	Ceramic Cap. 10V, X7R	1206	MuRata	GRM31CR71A106K
1	C2	47µF	El. Al. Cap. 400V, 20%	D16xL25	United Chemi-Con	EKXG401ELL470ML25S
1	C4	1µF	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	499kΩ	Film Resistor, 1%	1206	Yageo	9C12063A4993FKHFT
1	R4	100kΩ	Film Resistor, 1%	0603	Yageo	9C06031A1003FKHFT
1	R5	0Ω	Film Resistor, 5%	1206	Yageo	9C12063A0R00JLHFT
1	R9	10kΩ	Film Resistor, 1%	0603	Yageo	9C06031A1002FKHFT
1	R11	1MΩ	Film Resistor, 1%	1206	Yageo	9C12063A1004FKHFT
1	R12	20Ω	Film Resistor, 1%	0603	Yageo	9C06031A20R0FKHFT
1	R15	20kΩ	Film Resistor, 1%	0603	Yageo	9C06031A2002FKHFT
1	R25	10Ω	Film Resistor, 5%	0603	Yageo	9C06031A10R0JLHFT
1	R27	0Ω	Film Resistor 5%	0603	Yageo	9C06031A0R00JLHFT
1	D1	250V/400 mA	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	MP3361 DK	Photo Flash Charger	MSOP10 , 3x3mm	MPS	MP3361DK

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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	1µF	Ceramic Cap. 10V, X7R	0805	MuRata	GRM21BR71A105K
4	R16, R17, R18, R19	10kΩ	Film Resistor, 1%	0603	Yageo	9C06031A1002FKHFT
2	R20, R22	5.11kΩ	Film Resistor, 1%	0603	Yageo	9C06031A5111FKHFT
2	R21, R23	15kΩ	Film Resistor, 1%	0603	Yageo	9C06031A1502FKHFT
1	R24	51Ω	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~JP4	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~TP5		5-pin Header, 2.54mm	2.54mm	Sullins	PTC05SAAN

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PRINTED CIRCUIT BOARD LAYOUT

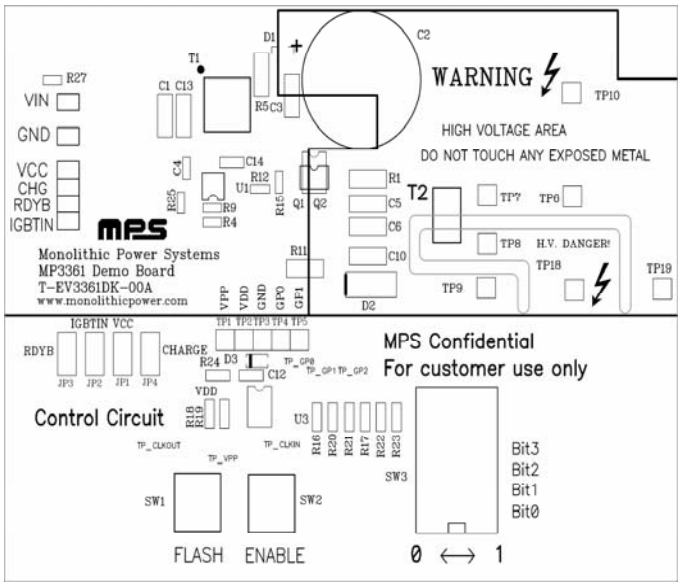

Figure 1—Top Silk Layer

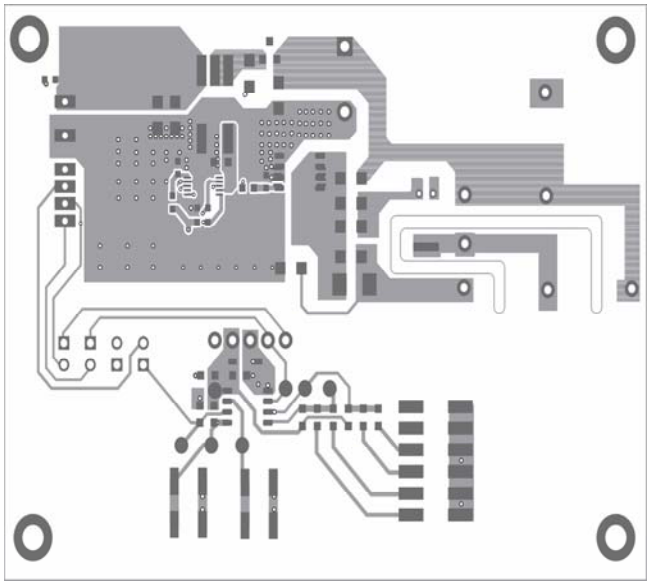

Figure 2—Top Layer

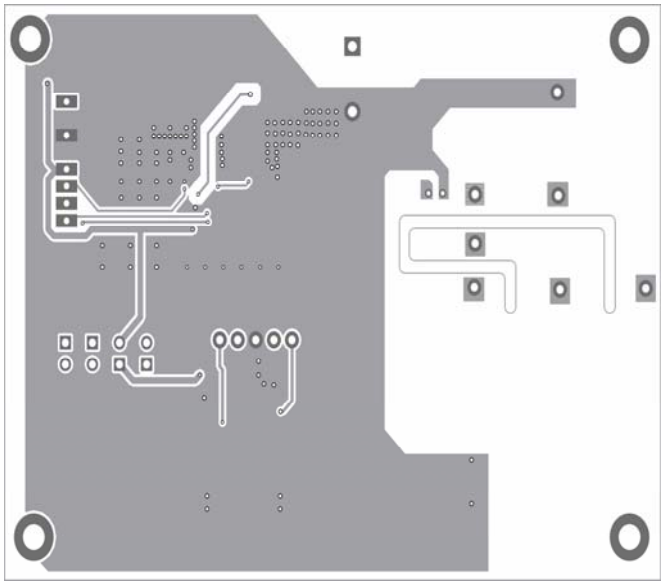

Figure 3—Bottom Layer

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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.

NOTICE: The information in this document is subject to change without notice. Please contact MPS for current specifications. 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.

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