## EV3361DK-00A

# Integrated Photo Flash Changer IGBT Driver EV Board

#### **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.  $0.5\Omega$  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.

#### **ELECTRICAL SPECIFICATIONS**

Parameter	Symbol	Value	Units
Input Voltage	$V_{IN}$	2.5-6	V
Supply Voltage	$V_{CC}$	2.5-6	<b>V</b>
Peak Charge Current	Ipeak	1.0	Α
Charge Voltage	Vo	295	V

#### **FEATURES**

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

#### **APPLICATIONS**

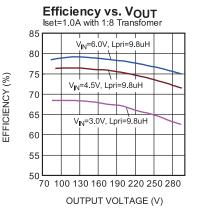
- Digital Still Cameras
- Optical Film Cameras
- PDAs with Xenon Flash

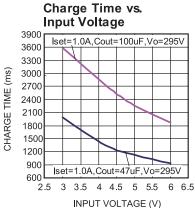
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#### **EV3361DK-00A EVALUATION BOARD**



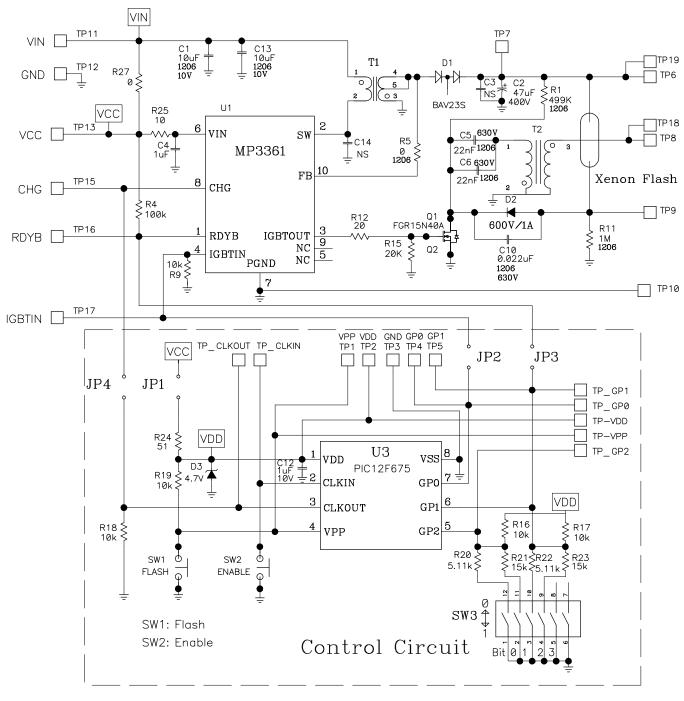
(L x W x H) 2.7" X 3.6" X 1.1"			
Board Number	MPS IC Number		
EV3361DK-00A	MP3361DK		







### **EVALUATION BOARD SCHEMATIC**





## **EV3361DK-00A BILL OF MATERIALS**

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
2	C1, C13	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	1ΜΩ	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



## **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∼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

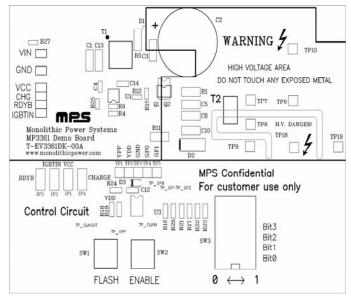
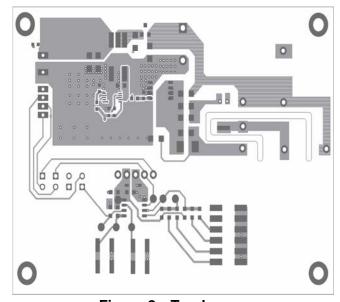


Figure 1—Top Silk Layer





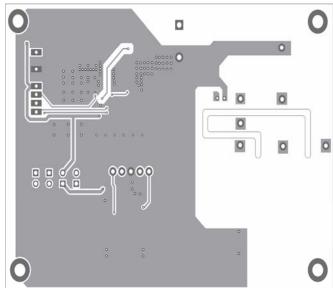


Figure 3—Bottom Layer



#### **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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