



DKSB1003A

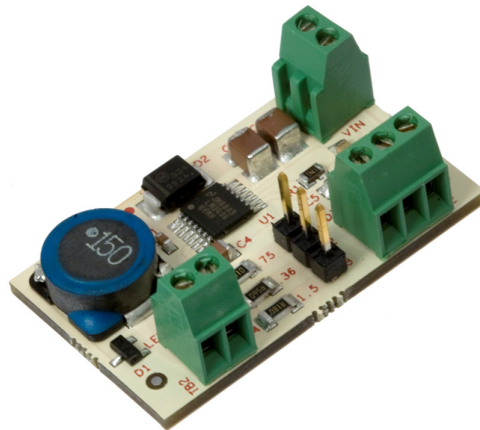
LM3406HV Evaluation Board

Rev B

18 June 2013

Features

- 3 user selectable LED constant current drive levels
- Input voltage range 6V-75V
- External connections using solderless terminal blocks
- Dimming pin brought out to solderless terminal block for easy access
- Output open-circuit protected
- Small board footprint



Quick Start

Connect DC power to TB1-VIN (6V – 75V) and ground to TB1-GND. Attach LED anode to TB2-LED+ and cathode to TB2-LED-. Remove jumper from header J1 for a regulated output current of 360mA.

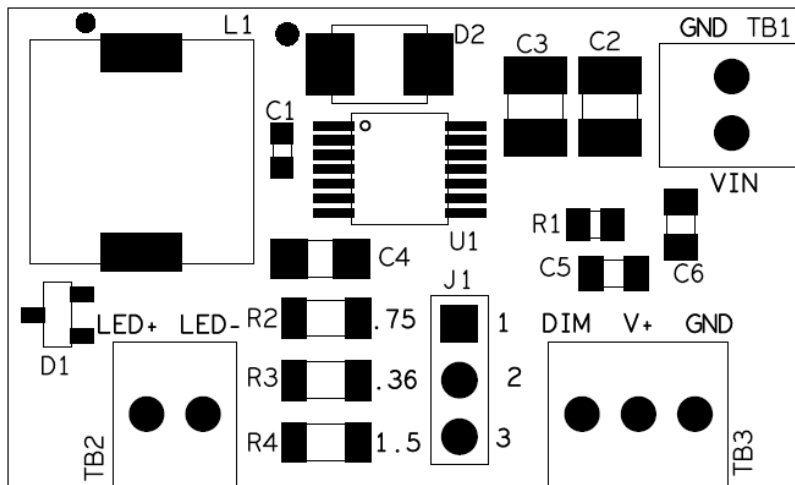
Functional Description

The LM3406HV evaluation board provides a means of evaluating the LM3406HV over its operating voltage range at user selectable LED drive currents. Output drive current options of 360mA, 750mA, and 1.5A are jumper selectable. Solderless terminal block connections are provided for power-in, constant current out, and dimming control. The power-in and ground connections are made at terminal block TB1, labeled on the board as VIN and GND. The LM3406 DIM pin is brought out at TB3-DIM. TB3-V+ and TB3-GND are connected to TB1-VIN and TB1-GND respectively, and can be used to power user supplied dimming circuitry.

Jumper J1 determines the output current by changing the sense resistance. With the jumper removed, the LED drive current is 360mA, with R3 being the singular sense resistor. A jumper positioned across header pins J1-1 and J1-2 parallels R2 with R3, providing an LED drive current of 750mA. Repositioning the jumper to J1-2 and J1-3 parallels R3 with R4 for a LED drive current of 1.5A.

The evaluation board is not optimized for any particular input/output combination. Various design characteristics can and should be optimized for a specific application. Refer to the National Semiconductor LM3406 datasheet for information regarding component values for a particular application. Another source of information is National Semiconductor's Application Note 1750.

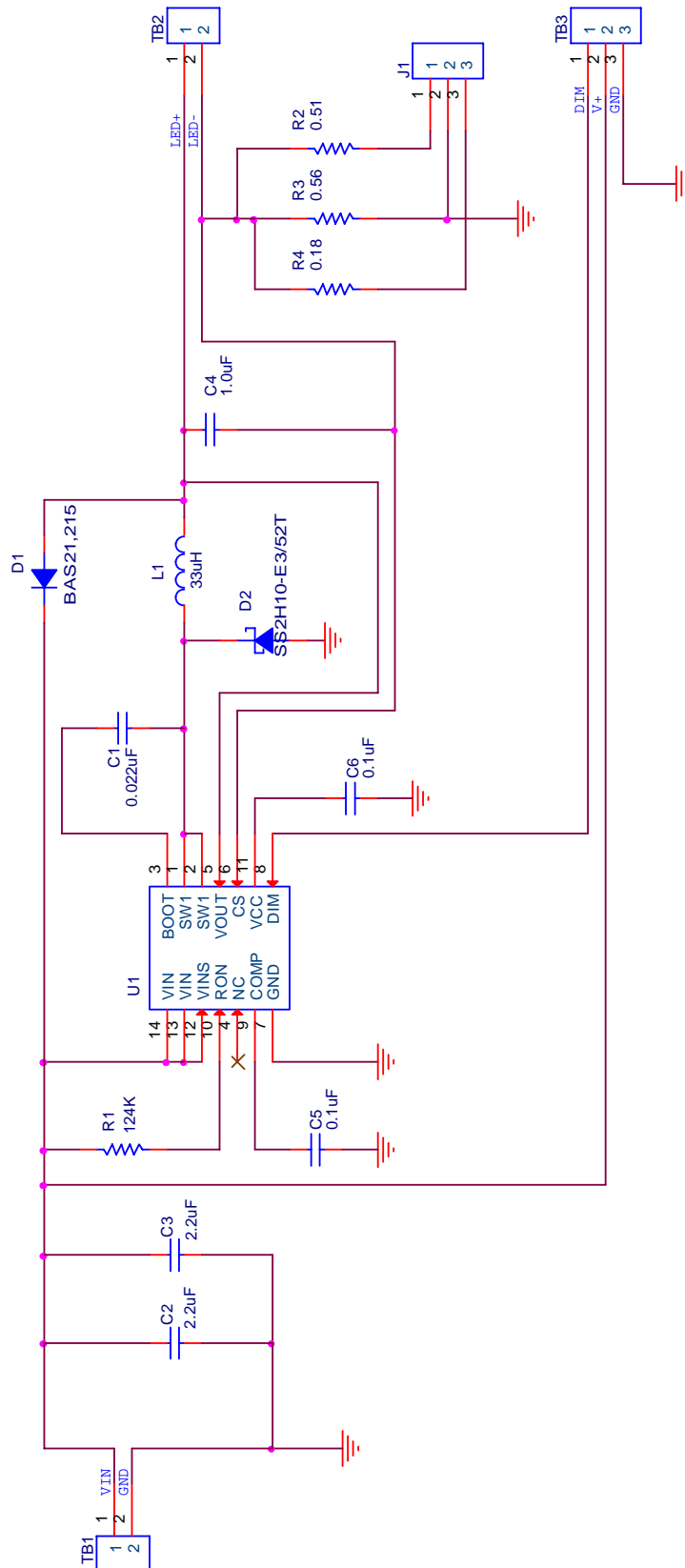
Layout



Bill of Materials

Part	Digi-Key PN	Description	Manufacturer PN
C1	399-1094-1-ND	CAP 22000PF 25V CERAMIC X7R 0603	C0603C223K3RACTU
C2 C3	587-1778-1-ND	CAP CER 2.2UF 100V X7R 10% 1210	HMK325B7225KN-T
C4	445-4468-1-ND	CAP CER 1.0UF 100V X7R 20% 1206	C3216X7R2A105M
C5 C6	311-1141-1-ND	CAP .10UF 25V CERAMIC X7R 0805	CC0805KRX7R8BB104
D1	BAS20TPM5CT-ND	DIODE SWITCH SW 200V 200MA SOT23	BAS20-TP
D2	SS2H10-E3/52TGICT-ND	DIODE SCHOTTKY POWER 2A 100V SMB	SS2H10-E3/52T
J1	WM6503-ND	CONN HEADER 3POS .100 VERT GOLD	22-28-4033
L1	445-3565-1-ND	INDUCTOR POWER 33UH 2.1A SMD	VLF10040T-330M2R1
R1	RMCF1/10124KFRCT-ND	RES 124K OHM 1/8W 1% 0805 SMD	RMCF 1/10 124K 1% R
R2	RHM.51QCT-ND	RES .51 OHM 1/4W 1% 1206 SMD	MCR18EZHFLR510
R3	RHM.56QCT-ND	RES .56 OHM 1/4W 1% 1206 SMD	MCR18EZHFLR560
R4	RHM.18QCT-ND	RES .18 OHM 1/4W 1% 1206 SMD	MCR18EZHFLR180
TB1 TB2	A98333-ND	TERM BLOCK 2POS SIDE ENT 2.54MM	282834-2
TB3	A98334-ND	TERM BLOCK 3POS SIDE ENT 2.54MM	282834-3
U1	LM3406HVMH-ND	IC REG BUCK 1.5A CC LED 14TSSOP	LM3406HVMH/NOPB

Schematic



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