AN-1495 LM3552 White LED Flash Driver Evaluation Board

1   Introduction

To operate the LM3552 White LED Flash Driver Evaluation Board, connect a supply voltage (2.7V to 5.5V) between board connectors VIN and GND.

2   Board Operation: Basic Connections

To operate the LM3552 White LED Flash Driver Evaluation Board, connect a supply voltage (2.7V to 5.5V) between board connectors VIN and GND.

Default Jumper Connections:

- EN: Connects the "OFF" post to the middle post of the EN header strip. This connects GND to the EN pin of the LM3552, disabling the part.
- T/F: Connects the "T" post to the middle post of the T/F header strip. This connects GND to the T/F pin of the LM3552, placing the part into the 200mA torch mode when the part is enabled

When these connections are all made correctly, the Flash LED will be OFF. Setting the EN jumper to the ON position will enable the part and turn on the flash LED. In torch mode, the LED current will be set to approximately 200mA. Placing the T/F jumper across the '+' pin and the T/F pin enables flash mode. The total current delivered to the LED is approximately 700mA. If this jumper is left in flash mode, the internal time-out circuit will disable the switcher after approximately 1 second.

The EN pin has an internal pull-down resistor placing the part in shutdown by default. The T/F pin does not have a pull-up or pull-down resistor. If left unconnected, it is unknown as to whether the LM3552 is in torch or flash mode.

For more information regarding the operation of the LM3551/2, please refer to *LM3551 /LM3552 1A White LED Driver with Flash Timeout Protection* (SNVS371).

3 Schematic
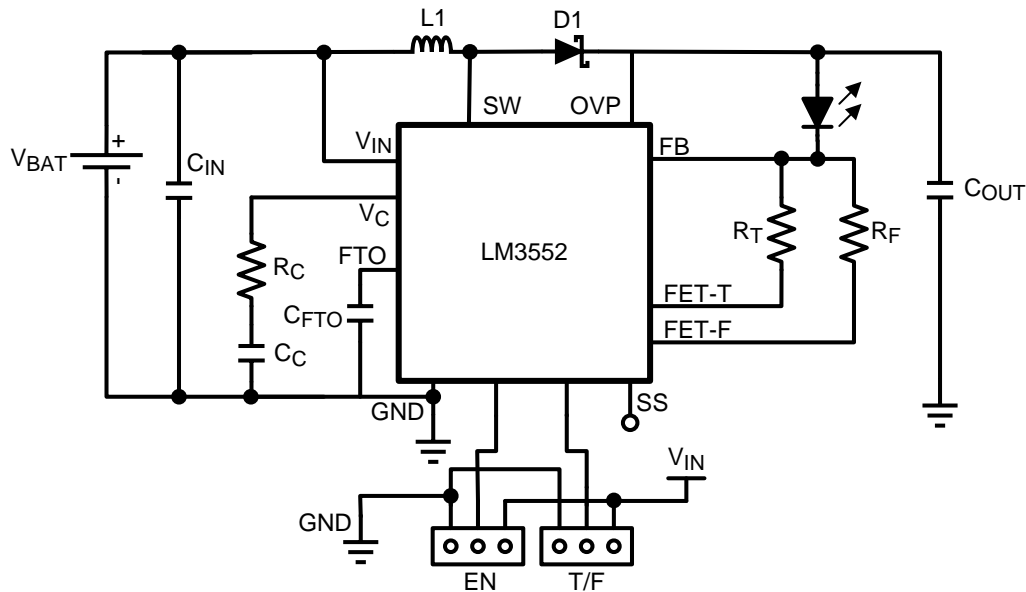
4 Bill of Materials

Component Symbol	Value	Package	Dimensions (mm)	Temperature Characteristic	Manufacturer	Part #
LM3552	--	NHL0014B WSON14	4.0 × 4.0 × 0.8	--	Texas Instruments	LM3552
LED	Flash LED	--	2.04 × 1.64 × 0.7	--	Lumileds	LXCL-PWF1
L1	4.7µH	--	4.5 × 4.7 × 1.4	--	TDK	VLF5014AT-4R7M1R1
C_{IN}	10µF, 10V	0805	2.0 × 1.25 × 1.45	X5R	TDK	C2012X5R1A106K
C_{OUT}	10µF, 16V	1206	3.2 × 1.6 × 1.9	X7R	TDK	C3216X7R1C106M
C_C	4.7nF	0805	2.0 × 1.25 × 1.45	C0G	TDK	C2012C0G1H472J
C_{FTO}	1uF, 10V	0603	1.6 × 0.8 × 0.9	X5R	TDK	C1608X5R1A105
C_{SS}	0.1µF	0603	1.6 × 0.8 × 0.9	X7R	TDK	C1608X7R1E104
D1	1A, 20V	SOD-123	3.6 × 1.65 × 0.95	--	ON Semiconductor	MBR120VLSFT1
R_C	10kΩ	0805	2.0 × 1.25 × 0.45	--	Vishay Dale	CRCW08051002F
R_T	5.6Ω, 1/2W	2010	5.0 × 2.5 × 0.6	--	Panasonic	ERJ-12ZYJ5R6U
R_F	2.2Ω, 1/2W	2010	5.0 × 2.5 × 0.6	--	Panasonic	ERJ-12ZYJ2R2U

5   LM3552 White LED Flash Driver Evaluation Board Layout
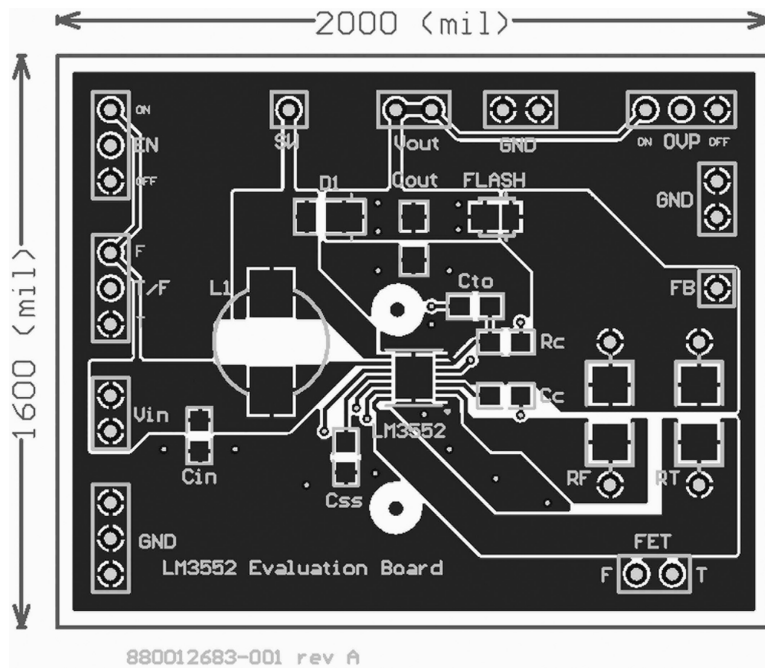
Figure 1. Top Layer
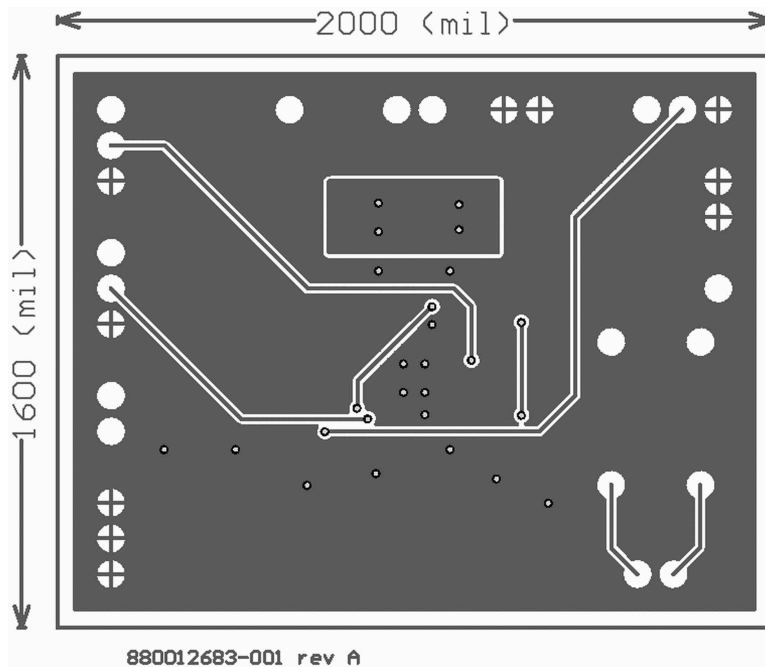
Figure 2. Bottom Layer (unmirrored)

IMPORTANT NOTICE

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