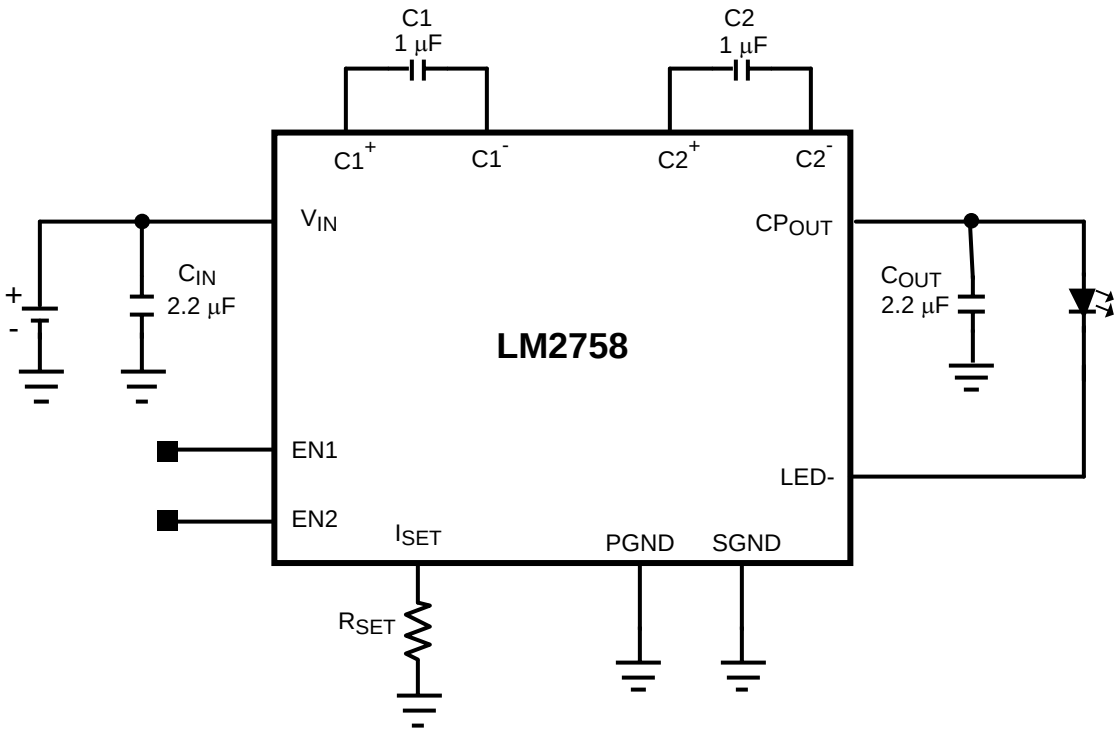
AN-1695 LM2758 Flash LED Driver Evaluation Board

1 Schematic



2 Bill of Materials (BOM)

Table 1. Bill of Materials (BOM)

Manufacturer	Part No	Description	Designation	Quantity
Texas Instruments	LM2758	Flash LED Driver	U1	1
TDK	C1608X5R0J225	Ceramic cap, 2.2 µF, 6.3V, 0603	C_{IN}, C_{OUT}	2
TDK	C1608X5R0J105	Ceramic cap, 1.0 µF, 6.3V, 0603	C_1, C_2	2
Luxeon	LXCL-PWF3	Flash LED	LED	1
Vishay	CRCW06032002F	Res, 20 kΩ	R_1	1
Tycol/Amp	4–103239–0–03	1 x 3, 0.1” header	EN_1. EN_2	2
Keystone Electronics	1573–2	Turret, DBL.0.82”L, .072 dia.	V_{IN} GND, GND, Vb, V_{OUT}, LED-K, LED-A	7
Johnson Components	108–0902–001	Banana Jack, Insulated, Red	V_{IN}	1
Johnson Components	108–0903–001	Banana Jack, Insulated, Black	GND	1

3 LM2758 Flash LED Driver Evaluation Board Layout

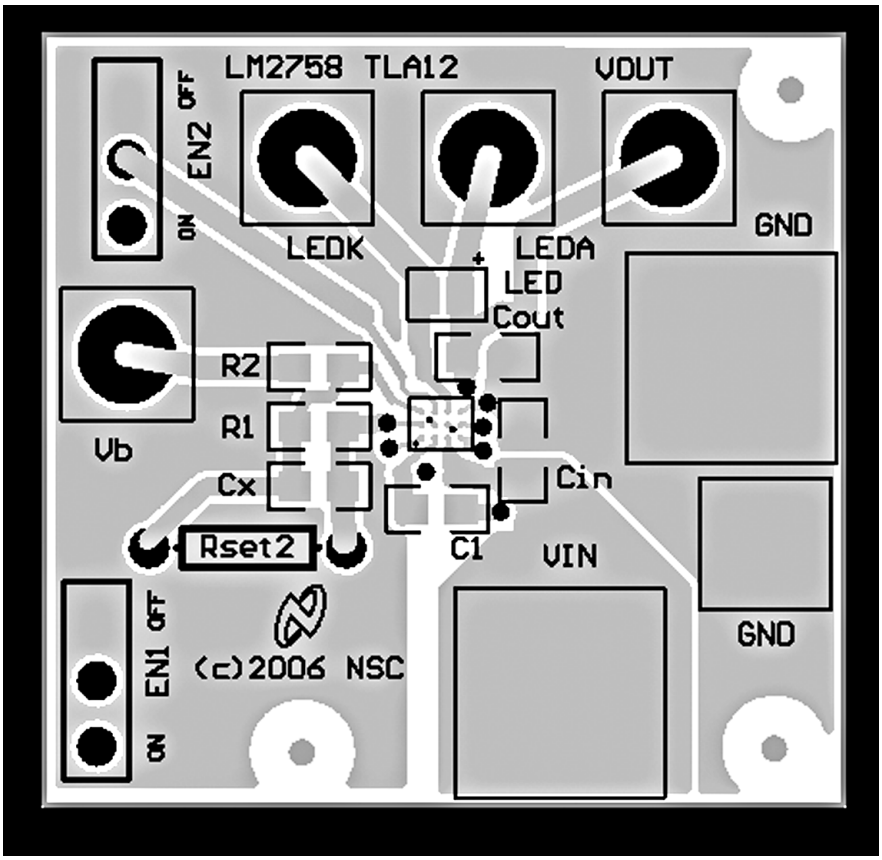


Figure 1. Top Layer

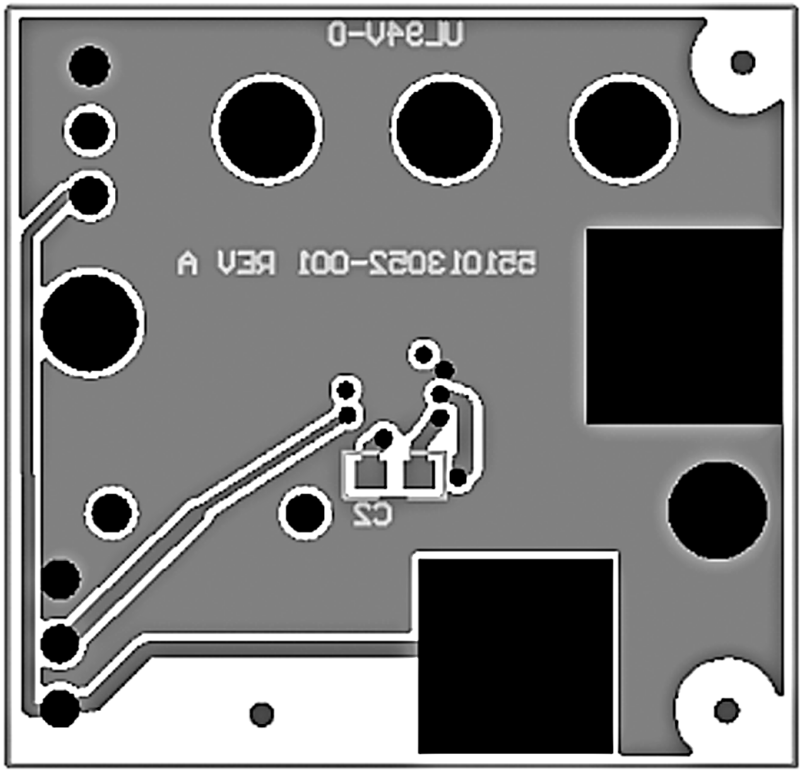


Figure 2. Bottom Layer

4 LM2758 Flash LED Driver Evaluation Board

4.1 Startup Sequence

Applying power to the V_{IN} and EN pins at the same time cause the LM2758 to start up in an unknown state. For this reason, it is not advised to apply power to the device while the EN jumper blocks is set to the “ON” position. To startup the evaluation board, set the EN1 jumper and EN2 jumper to the “OFF” position, apply power to the board, and then move the EN jumper(s) to the “ON” position. This is the expected start-up operation in the typical application where V_{IN} is tied to a voltage rail and the EN pins are controlled via logic signal.

EN1	EN2	Mode
0	0	Shutdown
1	0	Indicator
0	1	Torch
1	1	Flash

4.2 Gain Transition

Gain modes are designed to transition to the next higher gain when needed. The gain mode will stay in that higher gain until the Shutdown mode is cycled, resetting the gain to the lowest level. To reset the part to the minimum gain on the evaluation board, place the EN1 jumper and EN2 jumper to the “OFF” position, then to the “ON” position according to the Truth Table to the desired mode.

4.3 Input and Output Filters

Ferrite beads along with ceramic capacitors could be used at the input and output pin to filter out switching noise.

For detailed operating descriptions, see the *LM2758 Switched Capacitor Flash LED Driver in DSBGA Data Sheet* (SNVS551).

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