

Description

GM9601 is monolithic integrated circuit of a general-purpose driver designed to control brightness of LED lamps in wide limits.

The circuit is highly efficient for small sizes of lighting-intended LED clusters.

GM9601 is available in DIP 8 package.

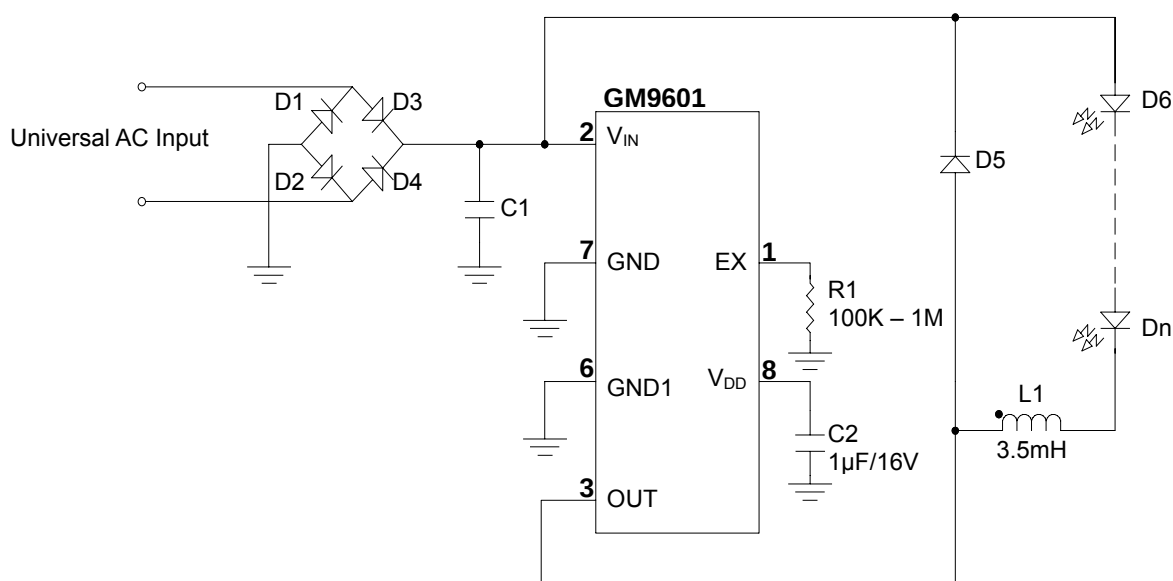
Features

- ◆ Internal built MOSFET
- ◆ EX pin current enabling to control LED peak current, turn of and off
- ◆ Constant specified load current, which is maintained with the wide range of input voltage from 50V to 500V
- ◆ Over temperature protection (OPT) with 30°C hysteresis

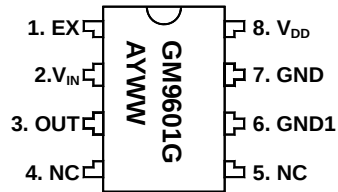
Applications

- Flat panel display backlighting
- General purpose constant current source

Typical Application Circuit



Marking Information and Pin Configurations (Top View)



DIP-8 package
(Top View)

G: Green Product
A: Assembly / Test site code
Y: Year
WW: Week

Pin Descriptions

Pin #	Function	Description
1	EX	Output current, output power transistor turn ON/OFF control input
2	V _{IN}	High voltage supply input
3	OUT	Output power transistor drain
4	-	Not connected
5	-	Not connected
6	GND1	Output power transistor source
7	GND	Control circuit common
9	VDD	VDD Voltage

Ordering Information

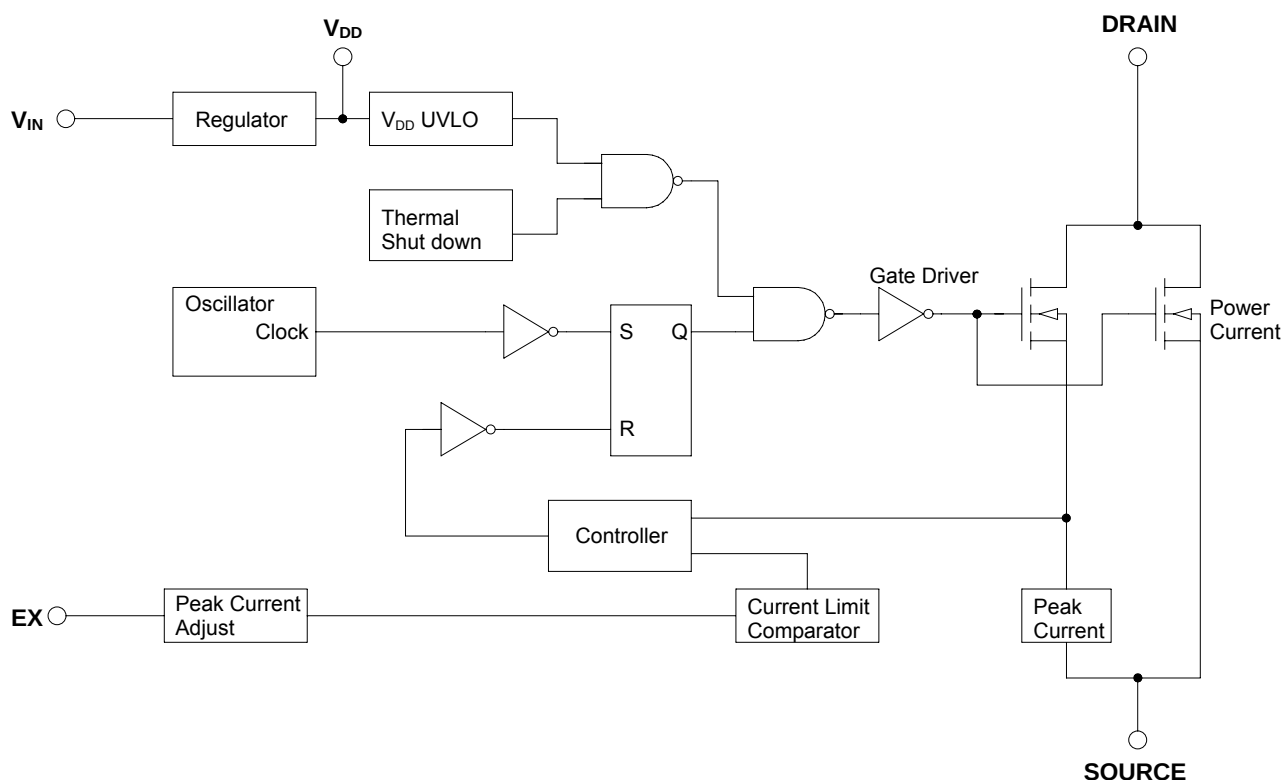
Ordering Number	Package	Shipping
GM9601D8TG	DIP8	60 Units / Tube

Absolute Maximum Ratings

PARAMETER	RATINGS
VIN to GND	700V
Operating Temperature Range	- 40°C to + 85°C
Junction Temperature	+125°C
Storage Temperature	- 65°C to + 150°C

Stresses beyond those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

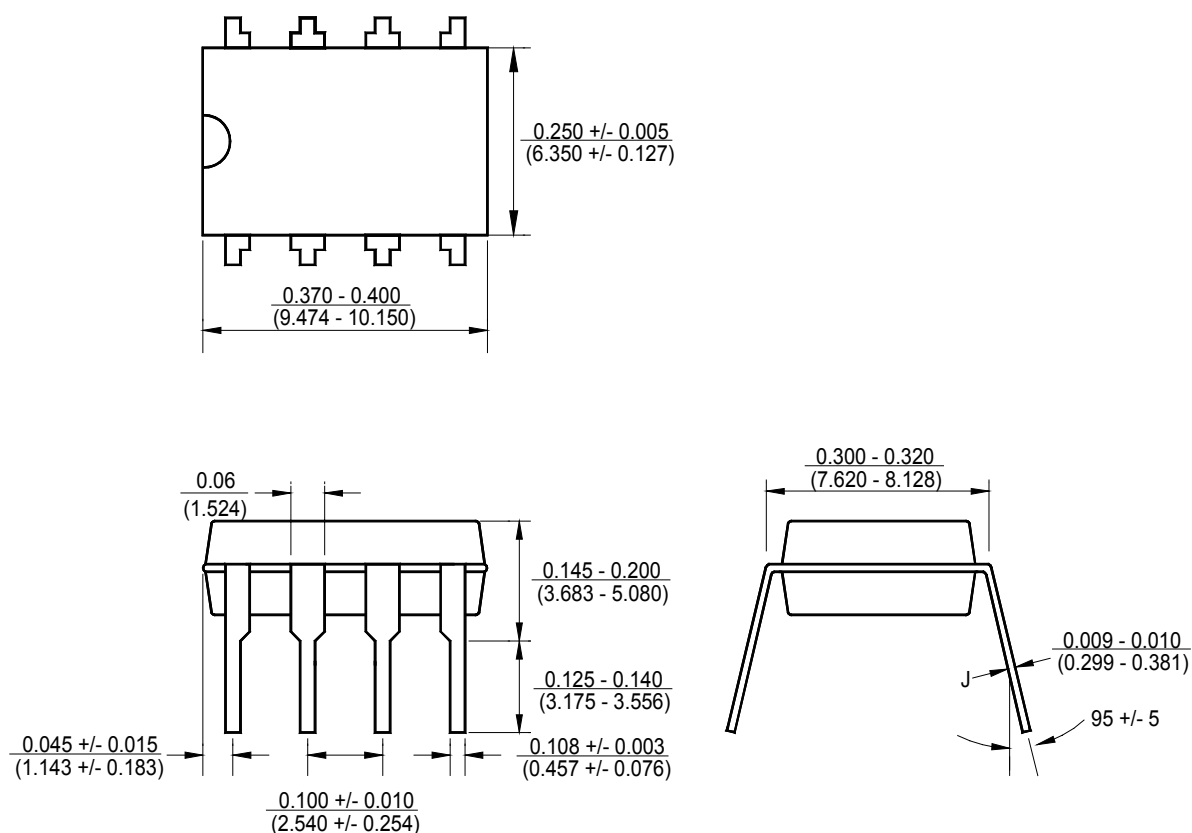
Block Diagram



Electrical Characteristics ($T_A = 25^\circ\text{C}$, unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Input voltage range	V_{IN}		50		700	V
Current consumption in OFF state	I_{IN_OFF}	$V_{IN} = 50\text{V}$			0.6	mA
Power supply voltage range	V_{DD}	$V_{IN} = 10 \text{ to } 700\text{V}$, $I_{DD} = 0$	7.0		8.0	V
Input current in ON state	I_{IN_ON}	$V_{IN} = 10 \text{ to } 100\text{V}$			1.0	mA
Circuit turn-on voltage	UVLO	V_{IN} increasing	6.45		6.95	V
Power supply voltage hysteresis	ΔUVLO	V_{IN} falling	300		700	mV
EX pin turn off voltage	$V_{EX(hi)}$		$V_{DD} - 1.3$		V_{DD}	V
R1 for $I_{OUT} = 0.1 \times I_{MAX}$ (Note 1)	R_{EXP1}	$V_{IN} = 50\text{V}$	700		900	$k\Omega$
R1 for $I_{OUT} = I_{MAX}$ (Note 1)	R_{EX}	$V_{IN} = 50\text{V}$	200		300	$k\Omega$
Output peak current	I_{MAX}	$V_{IN} = 50\text{V}$	0.6	0.7	0.8	A
Static drain-source ON state resistance	$R_{DS(ON)}$	$V_{IN} = 50\text{V}$, $I_{OUT} = 0.6\text{A}$		6		Ω
Oscillator frequency	f_{OSC}		35.2	44	52.8	kHz
Blanking interval	T_{blank}	$V_{IN} = 50\text{V}$	150		280	ns
Peak current turn on delay	t_D				300	ns
Output rise time	t_r				200	ns
Output fall time	t_f				50	ns
Thermal shutdown junction temperature	T_J			150		$^\circ\text{C}$
Thermal shutdown hysteresis	ΔT_J			30		$^\circ\text{C}$

Package Outline Dimensions – DIP 8



Ordering Number

<u>GM</u>	<u>9601</u>	<u>D8</u>	<u>I</u>	<u>G</u>
APM Gamma Micro	Circuit Type	Package Type D8:DIP 8	Shipping Type R: Taping & Reel T: Tube	Blank: Pb-free G:Green

Note:

Pb-free products:

- ◆ RoHS compliant and compatible with the current requirements of IPC/JEDEC J-STD-020.
- ◆ Suitable for use in Pb-free soldering processes with 100% matte tin (Sn) plating.

Green products:

- ◆ Lead-free (RoHS compliant)
- ◆ Halogen free (Br or Cl does not exceed 900ppm by weight in homogeneous material and total of Br and Cl does not exceed 1500ppm by weight)