

Features

- 1.5A Peak Output Current
- Typical operating voltage: 5V to 18V
- Static current: $\leq 1\text{mA}$
- Rise/Fall times: 20ns/25ns
- Delay time: 20ns

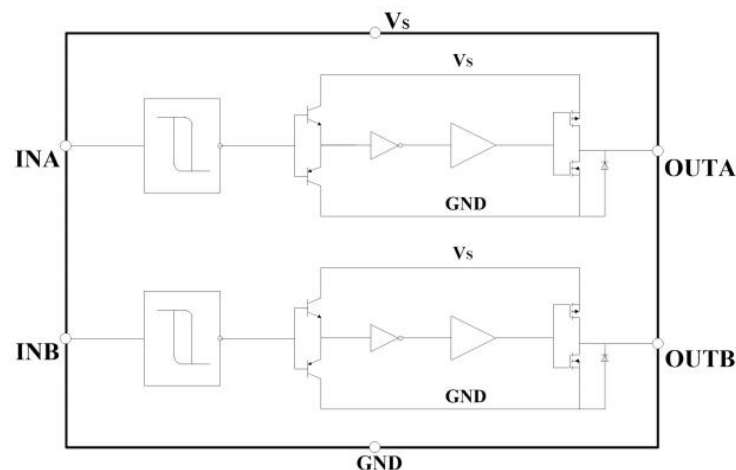
Applications

- MOSFET Driver
- Pulse modulator
- Square wave generator

Description

The MIC4426YM is a dual inverting MOSFET driver designed to translate TTL/CMOS inputs to high voltage outputs. The MIC4426YM can provide 1.5A peak output current, which is mainly internally integrated with Schmitt trigger, buffers and output drive stage. With low static power consumption and small size, it can boost the lower input control voltage to the supply voltage. The MIC4426YM also features low output resistance, high peak current, and fast switching speed, making it suitable for driving capacitive and resistive loads. This product adopts an 8-pin SOP packaging, with a size of 5mm×6mm×1.7mm.

Circuit



(Figure 1) MIC4426YM schematic

Electrical Characteristics ($-55^{\circ}\text{C} \leq T_A \leq 125^{\circ}\text{C}$, $V_S = 18\text{V}$, unless otherwise specified)

Symbol	Parameter	Test Conditions	min.	typ.	max.	Unit
INPUT						
V_{IH}	High input voltage		2.4	5		V
V_{IL}	Low input voltage			0	0.8	V
V_{IN}	Input voltage range		0		V_S	V
OUTPUT						
V_{OH}	High output voltage		$V_S - 0.05$			V
V_{OL}	Low output voltage				0.05	V
I_{PK}	Peak current			1.5		A
SWITCHING TIME						
t_R	Rise time	(Figure 2), $C_{load} = 1\text{nF}$			26	ns

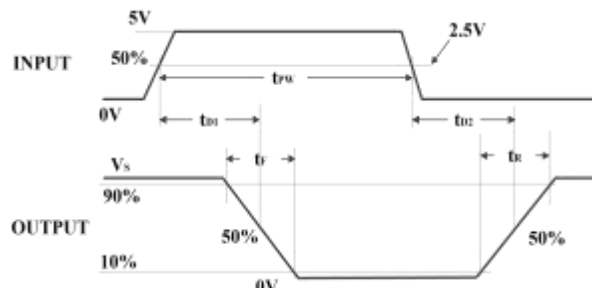
t_F	Fall time	(Figure 2), $C_{load}=1nF$			35	ns
t_{D1}	Delay time	(Figure 2), $C_{load}=1nF$			20	ns
t_{D2}	Delay time	(Figure 2), $C_{load}=1nF$			40	ns
POWER SUPPLY CHARACTERISTICS						
I_S	Static current				1	mA
V_S	Operating range		5		18	V

Note: All chips have undergone on chip 100% DC testing, with testing conditions: $V_S=8V$, $T_A=25^{\circ}C$.

Absolute maximum ratings

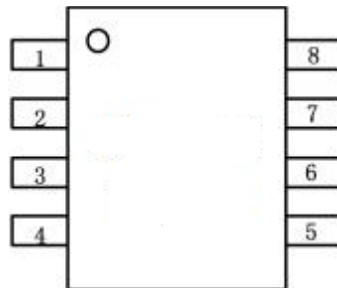
Parameter	Value	Unit
Max operating voltage	20	V
operation temperature	-55~+125	$^{\circ}C$
storage temperature	-65~+150	$^{\circ}C$

Timing diagrams



(Figure 2) MIC4426YM timing diagrams

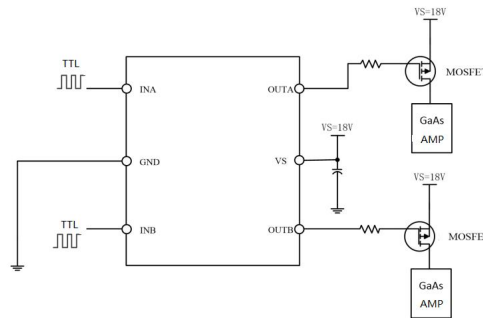
Pin description



(Figure 2) MIC4426YM pin description

Pin	Symbol	Function description
1, 8	NC	Undefined pins
2	INA	A-channel control signal input terminal
3	GND	ground
4	INB	B-channel control signal input terminal
5	OUTB	B-channel output terminal
6	VS	power
7	OUTA	A-channel output terminal

Application Circuit



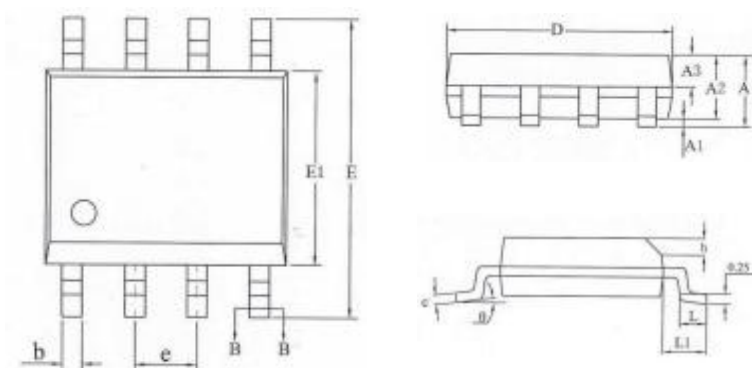
(Figure 4) MIC4426YM application circuit

A channel and B channel can work independently without interfering with each other, It can be used separately or connected together with the input and power terminals of the two channels. This series of chips is mainly used to drive power MOSFET devices, and the output can be used as a power modulator for GaAs power amplifiers. In addition, it is equipped with a negative voltage reference generator or negative voltage follower, which can be used as a gate driver for GaAs power amplifiers. The model of external power MOSFET can be selected according to the current needs. In order to reduce the impact of wire parasitism on the modulation signal, the power MOSFET should be as close as possible to the driver chip. If the voltage overshoot of the VO output signal during switching is too large, a resistor can be connected in series between the output pin and the MOSFET gate, or Schottky diode clamping can be used.

Truth table

Inputs		MIC4426YM	
V_{INA}	V_{INB}	V_{OA}	V_{OB}
L	L	H	H
H	H	L	L

Package information



Symbol	Value (mm)		
	Min	Typ	Max
A	-	-	1.75
A1	0.10	-	0.23
A2	1.25	1.40	1.65
A3	0.50	0.65	0.70
D	4.80	4.90	5.00
E	5.80	6.00	6.20
E1	3.80	3.90	4.00
e	1.17	1.27	1.37
h	0.25	-	0.50
L	0.45	0.60	0.80
L1	1.05REF		
θ	0°	-	8°

Important Notice

- 1) Exceeding the limit parameters may damage the chip;
- 2) This product is an electrostatic sensitive device. Please pay attention to anti-static measures during storage and use;
- 3) Pay attention to heat dissipation when the overall power consumption is greater than 0.2W.