

DESCRIPTION

The PT2484 is a dual channel H-bridge motor driver that operates on wide supply voltage range from 4V to 16V. Four individual control logic pins provides flexibility to drives a 4-wire bipolar stepping motor or two brushed dc motors or solenoid load. The chip has built-in protection circuit to prevent the short circuit or over temperature event to damage the H-bridge driver.

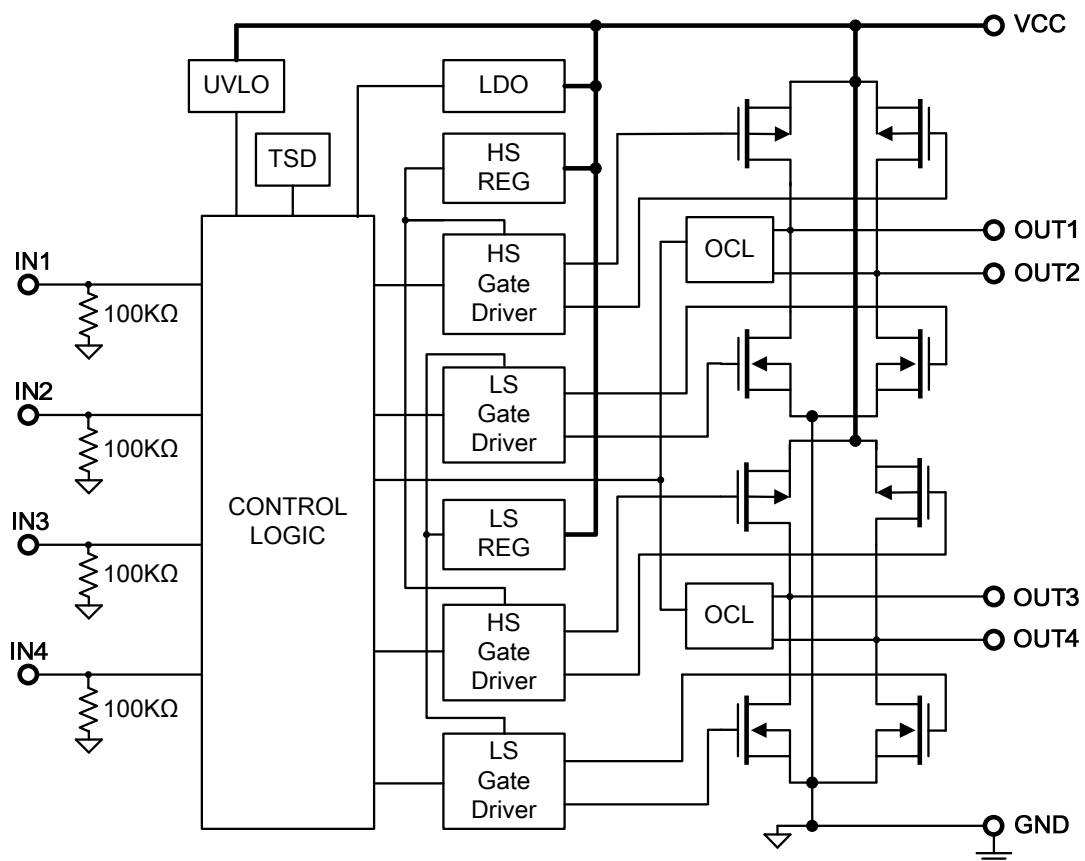
APPLICATIONS

- Airflow flap control for refrigerators.
- Air Conditioner venting control
- Home appliance
- Office automation machines

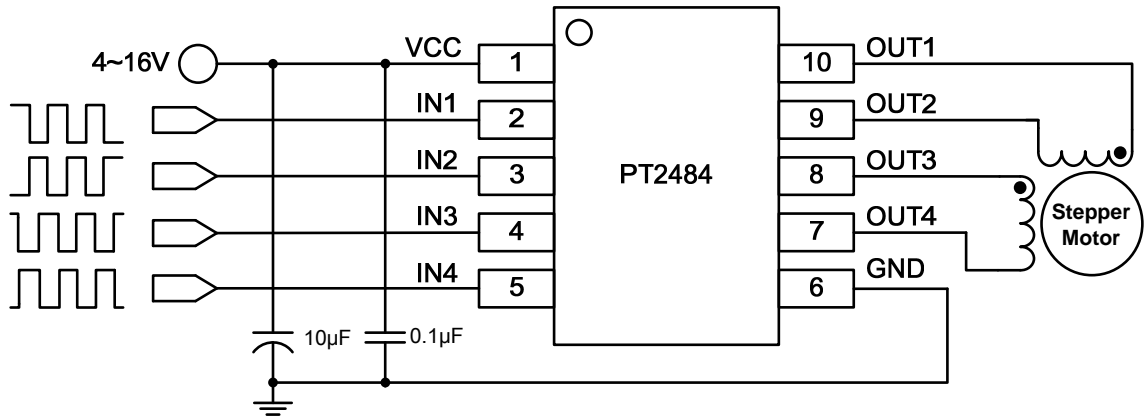
FEATURES

- Wide Supply Voltage Range: 4V to 16V
- Single voltage supply with built-in regulator; control logic supply is not necessary.
- Dual H-bridge Drivers for a bipolar stepping motor or two brushed dc motors.
- MOSFET RDS(on) Resistance HS + LS = 1.2Ω
- Maximum Output Current: 1.0 Amp (Peak), 700mA (RMS).
- Low Power Stand-by mode
- Built-in Protection Circuits with Thermal Shutdown (TSD), Under Voltage Lock-Out (UVLO)
- Output current limiting (OCL) during load terminal connects to GND.
- 10Pins Small Outline Package (SOP), Pitch=1.0mm.

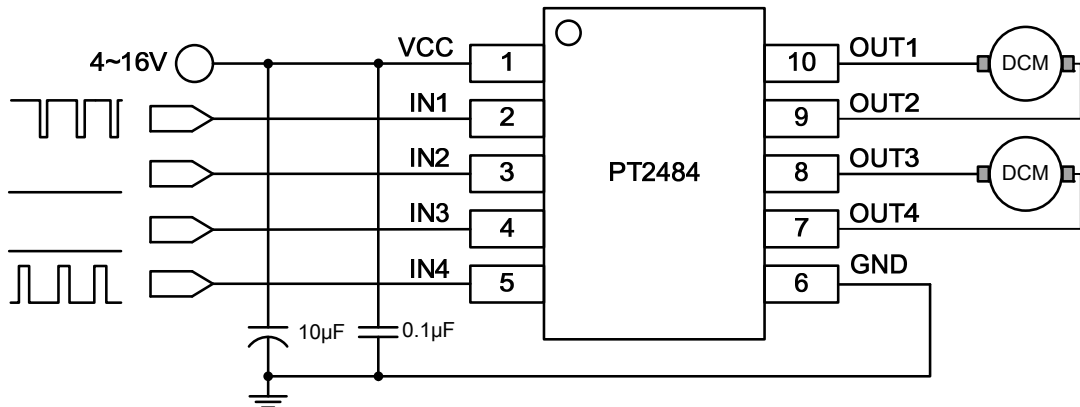
BLOCK DIAGRAM



APPLICATION CIRCUITS



Drives a bipolar stepping motor

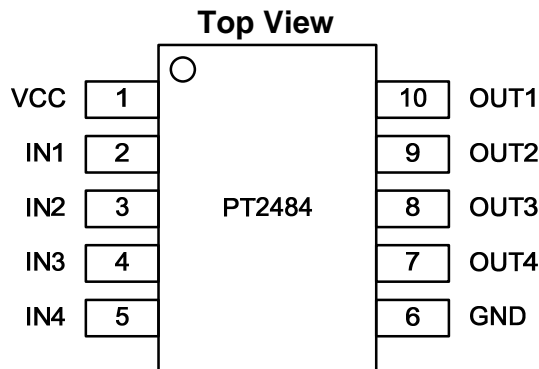


Drives two brushed dc motor

ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT2484-S	10Pins, SOP	PT2484-S

PIN CONFIGURATION



PIN DESCRIPTION

Pin Name	I/O	Description	Pin No.
VCC	Power	Power input pin, the operation voltage is from 4V to 16V. Connects a 0.1μF bypass capacitor between VCC and GND pin and add at least 10μF capacitor in the power line.	1
IN1	I	Control input pin 1 for H-bridge driver 1, built-in a 100KΩ pull-down resistor.	2
IN2	I	Control input pin 2 for H-bridge driver 1, built-in a 100KΩ pull-down resistor.	3
IN3	I	Control input pin 3 for H-bridge driver 2, built-in a 100KΩ pull-down resistor.	4
IN4	I	Control input pin 4 for H-bridge driver 2, built-in a 100KΩ pull-down resistor.	5
GND	Power	Ground pin	6
OUT4	O	OUT4 of H-bridge driver 2	7
OUT3	O	OUT3 of H-bridge driver 2	8
OUT2	O	OUT2 of H-bridge driver 1	9
OUT1	O	OUT1 of H-bridge driver 1	10

FUNCTION DESCRIPTION

The PT2484 is a dual H-bridge motor driver integrates P-channel and N-channel MOSFET switches. The PT2484 powered from a single supply and range from 4V to 16V, and it could drives output current up to 1.0 Amp to the motor, the output current is determinate by motor winding resistance; winging inductance and back EMF and VCC supply voltage. The P2484 has low power stand-by mode could reduce quiescent current down to less than 3μA to minimize system standby consumption.

H-BRIDGE OUTPUT CONFIGURATION

The motor driver output current polarity is determinate by input logic status, please refer to Table 1 for corresponds between the input and output.

VCC	IN1	IN2	IN3	IN4	OUT1	OUT2	OUT3	OUT4	Output States	
									H-Bridge 1	H-Bridge 2
<UVLO	x	x	x	x	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Stand-by, logic state of all input pins ignored.	
>UVLO	L	L	L	L	Hi-Z	Hi-Z	Hi-Z	Hi-Z	Stand-by	Stand-by
	H	L	H	L	H	L	H	L	Forward	Forward
	L	H	L	H	L	H	H	L	Reverse	Reverse
	H	H	H	H	L	L	L	L	Brake	Brake

Table 1, H-Bridge Output Configuration

INPUT TO OUTPUT LOGIC STATES

In the power-on period, all of outputs will remain in Hi-Z state and ignore the input logic states until the VCC rises up to exceed UVLO threshold. If all of four input pin staying on low states the device will goes into stand-by mode and all of outputs will remain in Hi-Z state. In the stand-by mode if any input pin is pull up to logic high state, the correspond H-bridge output will be turns on after the T_{RESET} time, if one of the H-bridge is turns on, another H-bridge can be enable by others input pins instantly and no needs waiting for T_{RESET} .

The driving signal for a bipolar stepping motor can be generates by an external MCU, please refer to the waveform shown in Figure 2, there have full-step (2-phase) and half-step (1-2 phase) excitation can be chose.