DESCRIPTION

The PT2470 device is a brushed-DC motor driver for printers, appliances, industrial equipment, and other small machines. Two logic inputs control the H bridge driver, which consists of four N-channel MOSFETs that can control motors bi-directionally with up to 3.6-A peak current. The inputs can be pulse-width modulated (PWM) to control motor speed, using a choice of current-decay modes. Setting both inputs low enters a low-power sleep mode.

The PT2470 device features integrated current regulation, based on the analog input VREF and the voltage on the ISEN pin, which is proportional to motor current through an external sense resistor. The ability to limit current to a known level can significantly reduce the system power requirements and bulk capacitance needed to maintain stable voltage, especially for motor startup and stall conditions.

The device is fully protected from faults and short circuits, including under voltage (UVLO), overcurrent (OCP), and over temperature (TSD). When the fault condition is removed, the device automatically resumes normal operation.

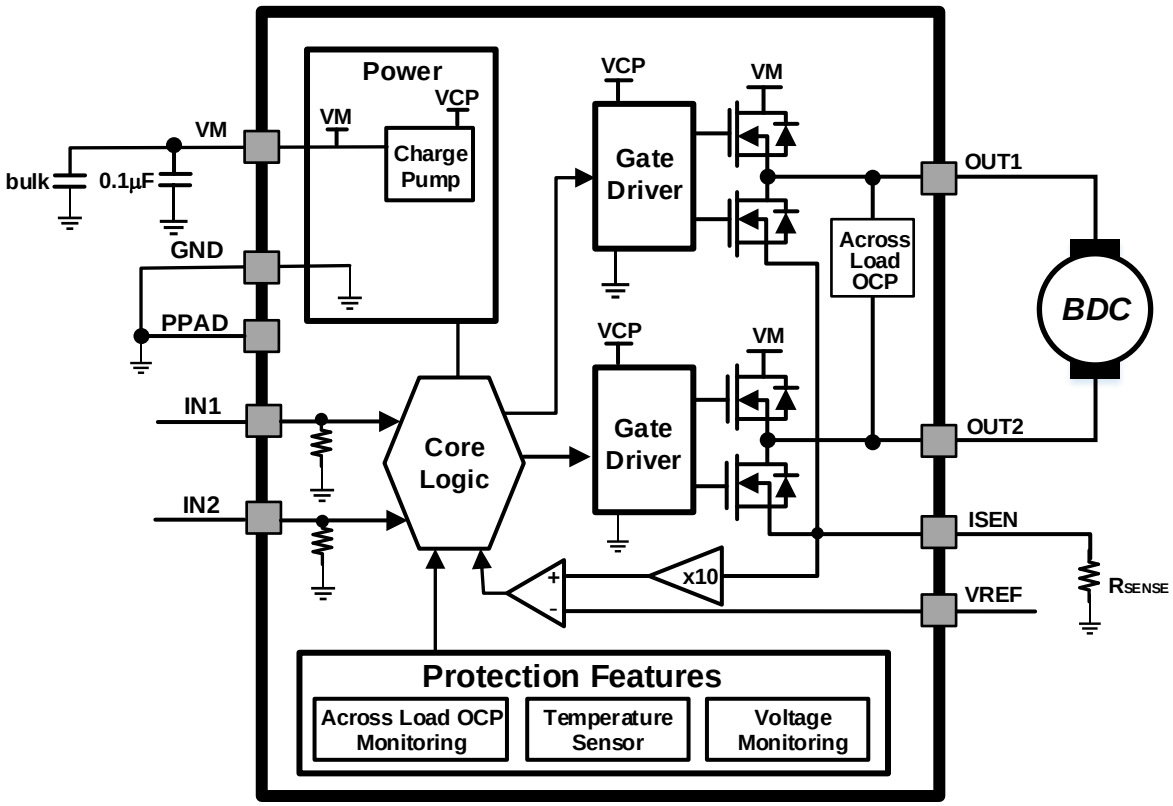
FEATURES

- H-Bridge Motor Driver
  – Drives One DC Motor, One Winding of a Stepper Motor, or Other Loads
- Wide 9-V to 36-V Operating Voltage
- 500-mΩ Typical $R_{DS(on)}$ (HS + LS)
- 3.6-A Peak Current Drive
- PWM Control Interface
- Integrated Current Regulation
- Low-Power Sleep Mode
- Small Package and Footprint
  – 8-Pin HSOP With ThermalPAD
- **Integrated Protection Features**
  – VM Under voltage Lockout (UVLO)
  – Across the Load Overcurrent Protection (OCP)
  – Thermal Shutdown (TSD)
  – Automatic Fault Recovery

APPLICATIONS

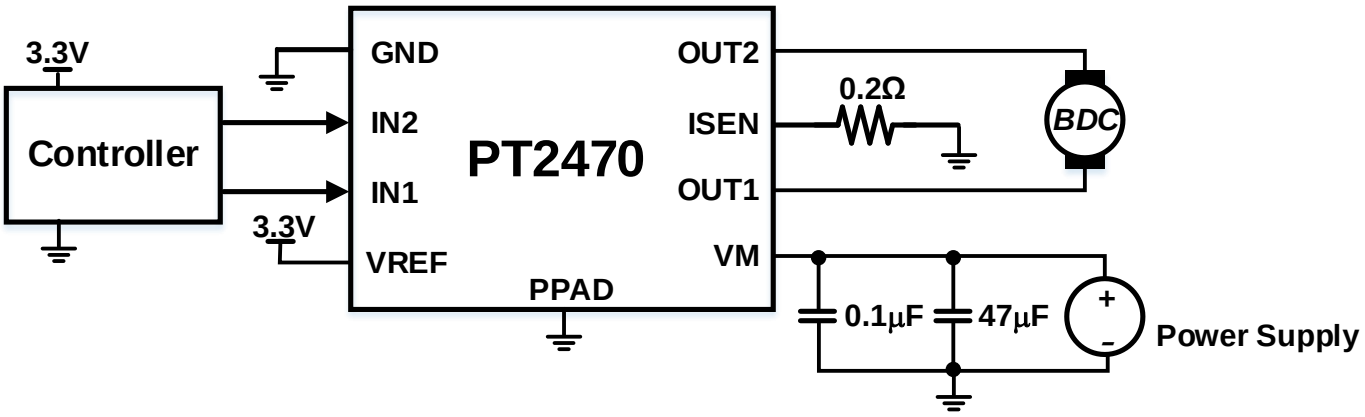
- Printers
- Appliances
- Industrial Equipment
- Other Mechatronic Applications

BLOCK DIAGRAM



APPLICATION CIRCUIT

The PT2470 device is typically used to drive one brushed DC motor.

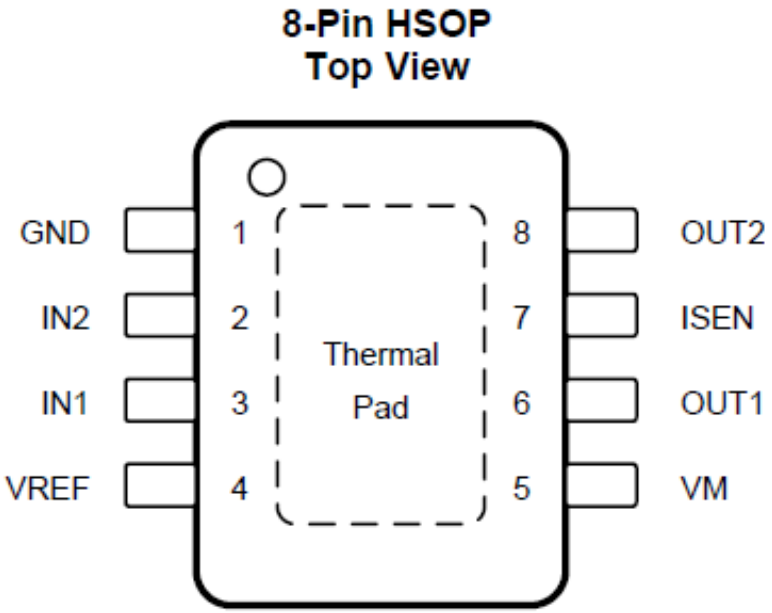


Typical Connections

ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT2470-HS	8 Pins, HSOP	PT2470-HS

PIN CONFIGURATION



PIN DESCRIPTION

Pin Name	Type	Description	Pin No.
GND	PWR	Logic ground. Connect to board ground.	1
IN2	I	Logic inputs. Controls the H-bridge output. Has internal pulldowns.	2
IN1	I	Logic inputs. Controls the H-bridge output. Has internal pulldowns.	3
VREF	I	Analog input. Apply a voltage between 0.3 to 5 V.	4
OUT1	O	H-bridge output. Connect directly to the motor or other inductive load.	6
ISEN	PWR	High-current ground path. If using current regulation, connect ISEN to a resistor (low-value, high-power-rating) to ground. If not using current regulation, connect ISEN directly to ground.	7
OUT2	O	H-bridge output. Connect directly to the motor or other inductive load.	8
PAD	-	Thermal pad. Connect to board ground. For good thermal dissipation, use large ground planes on multiple layers, and multiple nearby vias connecting those planes.	-

IMPORTANT NOTICE

Princeton Technology Corporation (PTC) reserves the right to make corrections, modifications, enhancements, improvements, and other changes to its products and to discontinue any product without notice at any time.
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