DESCRIPTION

The PT5142 is a motor driver IC for DC motor. It includes one Full-On Drive H-Bridge channel and a 3.3V, 300mA LDO as additional power supply for MCU or other load. The driver features wide range operating from 2.5V to 12V and low power consumption by fast switching speed.

The motor driver current can be limited by internal PWM control or external MCU control. The internal safety features include LDO output current limit and OCP protection, motor driver output internal current limit and OCP protect, under-voltage lockout (under-voltage indicator for MSOP10_EP) and thermal shutdown.

The PT5142 is packaged in 8-pin ESOP8 and 10-pin MSOP10(EP). Both these two packages have exposed thermal pad on the back.

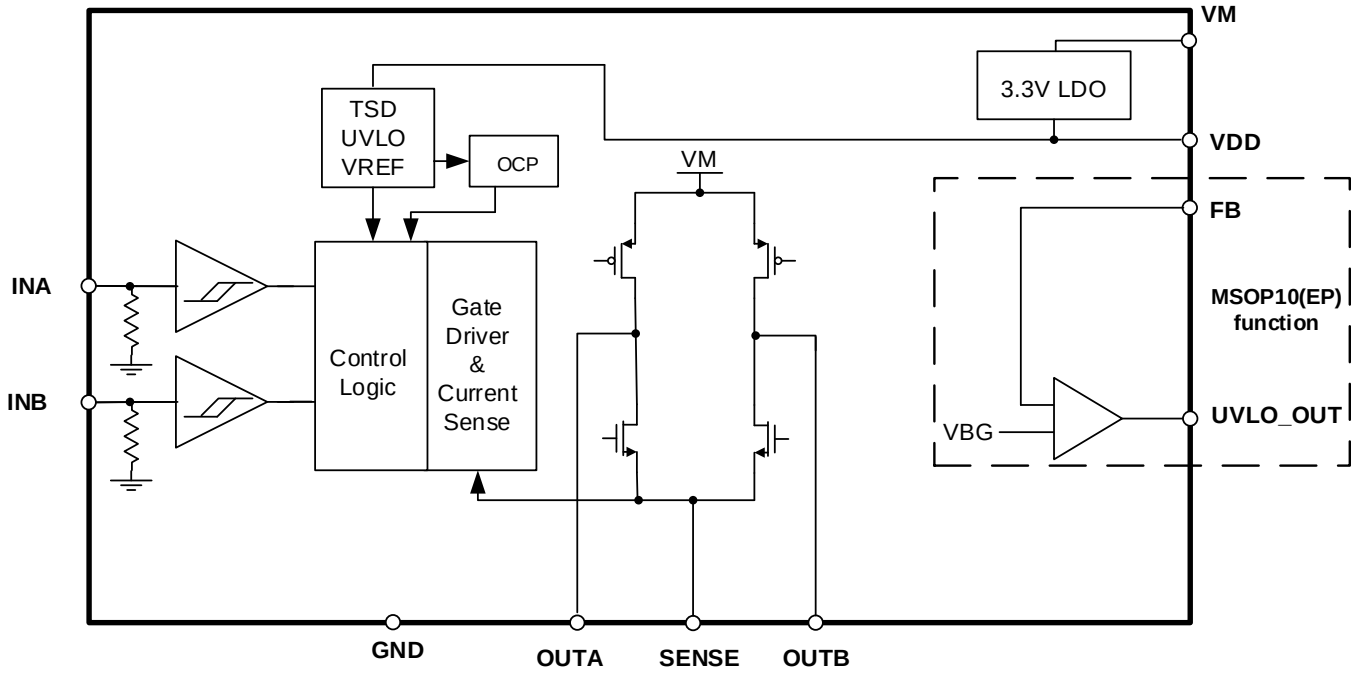
FEATURES

- It is low consumption by BCD process adoption
- Small package: ESOP8 and MSOP10(EP)
- Wide power-supply voltage range:
  - Motor (VM): 2.5V~12V
- High DC output current: Max.=3A
- Low RDSON(TOP+BOT): 0.5ΩTYP@25°C
- Low current consumption when power-down: <15uA @25°C
- Built-In 3.3V VDD LDO Output
- PWM control, Max input frequency: 200 KHz.
- Operating temperature range: -30 to +85°C
- Charge-pump less
- Shoot-through current protection
- Built-in protection circuits
  - Under Voltage Lock Out
  - Thermal Shut Down
  - Over Current Protection

APPLICATION

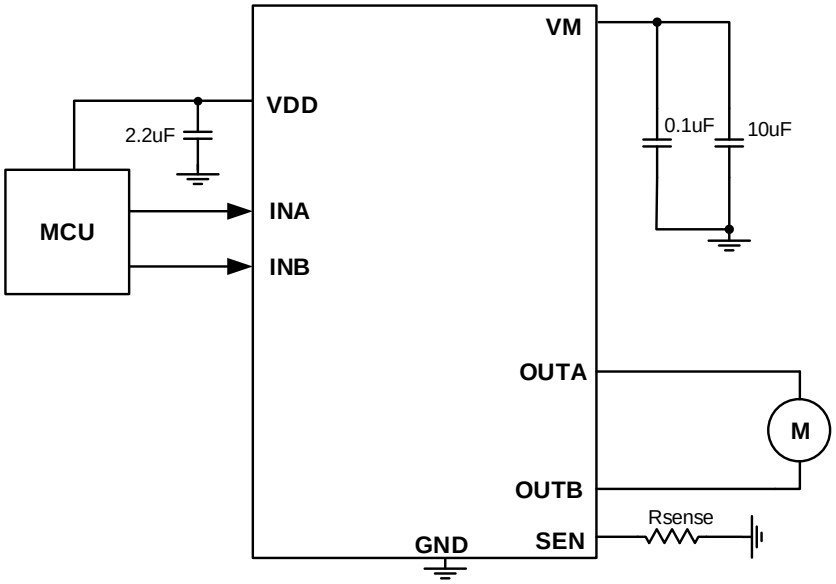
- Toys
- MV bi-direction DC Motor
- Robotics and others

BLOCK DIAGRAM

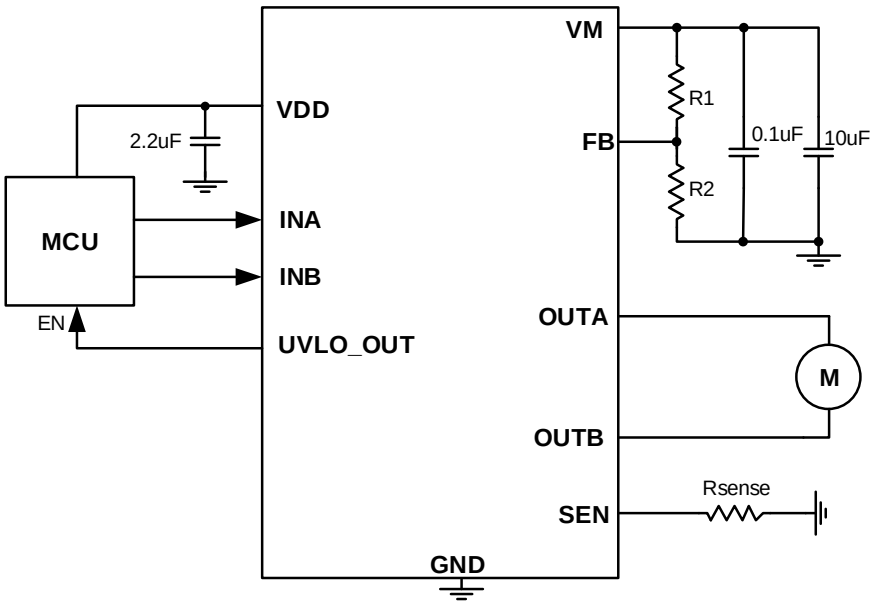


APPLICATION CIRCUITS

ESOP8



MSOP10 (EP)

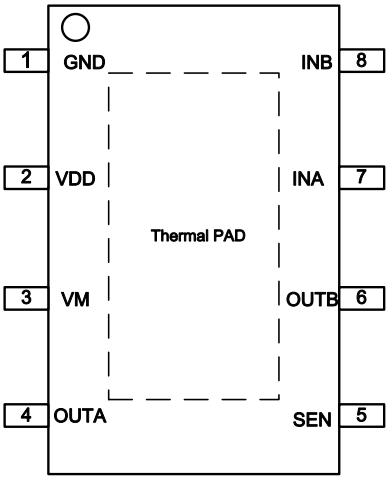


ORDER INFORMATION

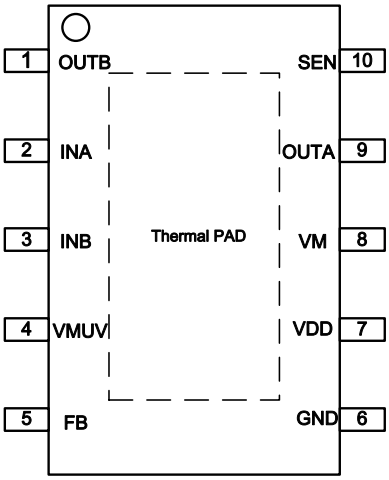
Valid Part Number	Package Type	Top Code
PT5142	8pins,ESOP	PT5142
PT5142_M	10pins,MSOP(EP)	PT5142_M

PIN CONFIGURATION

ESOP8



MSOP10(EP)



PIN DESCRIPTION

Pin Name	I/O	Description	Pin No.	
			ESOP8	MSOP10(EP)
GND	GND	Ground	1	6
VDD	Power	Power supply for Logic circuit and LDO output.	2	7
VM	Power	Power supply for driver	3	8
OUTA	O	H-Bridge output terminal A of the driver	4	9
SEN	I/O	Connect current sensor resistor for internal PWM control. Or short to PGND when external PWM control. (Do not float)	5	10
OUTB	O	H-Bridge output terminal B of the driver	6	1
INA	I	Control input	7	2
INB	I	Control input	8	3
VMUV	O	The under voltage detection output signal of VM	-	4
FB	I	The feedback voltage of VM	-	5
Thermal PAD	GND	Connect this pin to PGND. (Do not float)	-	-

IMPORTANT NOTICE

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