

DESCRIPTION

The PT5671 is a three-phase controller for use with N-channel external power MOSFETs and. One logic level input is provided for each of the six power MOSFETs in the 3-phase bridge, allowing motors to be driven with any commutation scheme defined by an external controller. The power MOSFETs are protected from cross-conduction by integrated crossover control.

PT5671 uses a new multi-power BCD technology, only requiring a single power supply of $V_M = 4.5 - 32V$ and a few external components.

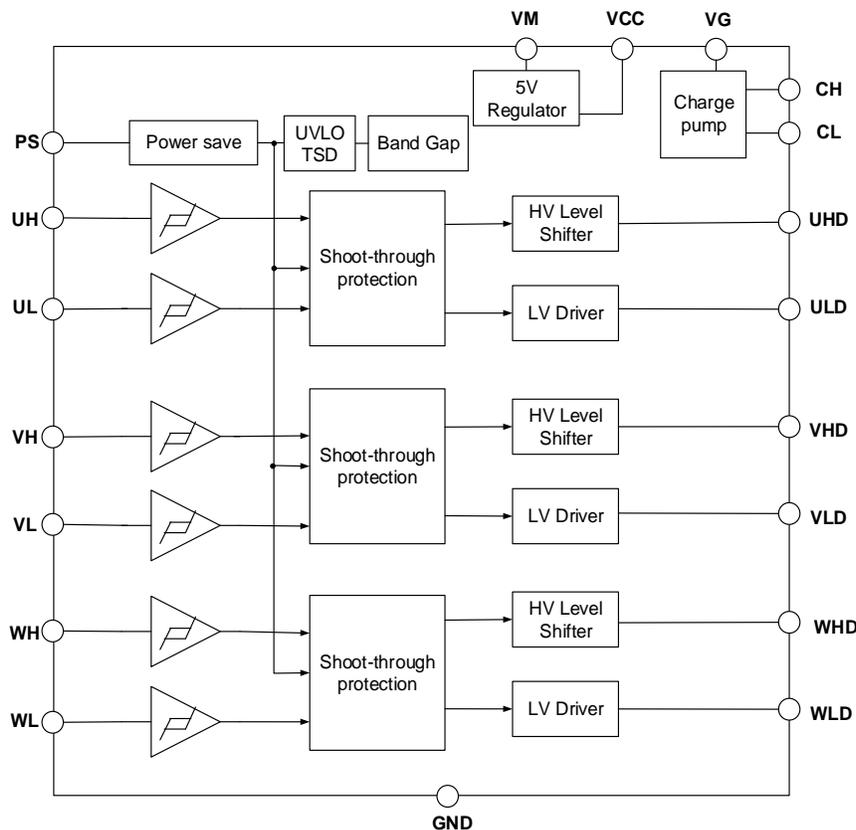
FEATURES

- It is low consumption by BCD process adoption
- Driver up to 3-phase half-bridge gates
- Wide power-supply voltage range:
 - Motor (V_M): 4.5V - 32V
- Operating temperature range: -40 to +85°C
- Charge-pump
- Built-in protection circuits
 - Shoot-through protection
 - Under Voltage Lock Out (UVLO)
 - Thermal Shut Down (TSD)

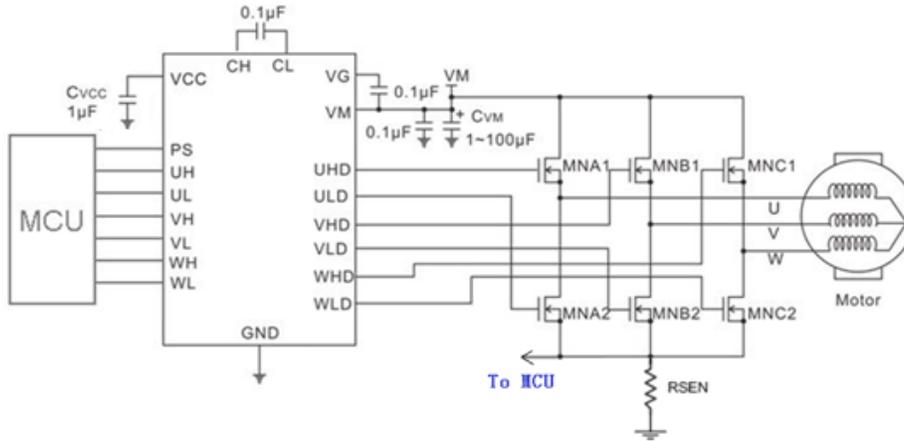
APPLICATIONS

- 3-phase Sensor-Less /hall-sensor controlled BLDC fan motor driver
- 3-phase BLDC motor

BLOCK DIAGRAM



APPLICATION CIRCUIT



External parts

Item	Symbol	Capacitor value			Unit	Remark
		Min	Typ.	Max		
Decoupling Capacitor for Motor driver power supply	C _{VM}	1.0			µF	Depends on application of PCB
Bypass capacitor for Control power supply	C _{VCC}	0.1	-		µF	Depends on application of PCB
Charge pump Capacitor 1	C _{VG}	0.047	0.1	0.22	µF	
Charge pump Capacitor 2	C _{HL}	0.047	0.1	0.22	µF	

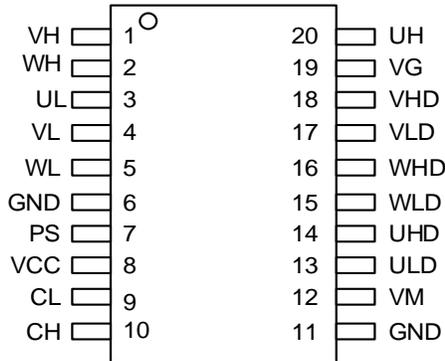
Note: A capacitor of C_{VM}, C_{VCC} should be adjusted by Load current profile, Load Capacitor, resistor of wiring on application board.

ORDER INFORMATION

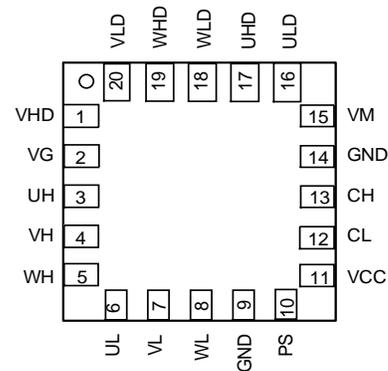
Valid Part Number	Package Type	Top Code
PT5671-TX	20 Pins, TSSOP, 173MIL	PT5671-TX
PT5671-QF	20Pins, QFN, 4*4	PT5671-QF

PIN CONFIGURATION

TSSOP20



QFN20



PIN DESCRIPTION

Pin Name	I/O	Description	Pin No.	
			TSSOP20	QFN20
VH	I	Logic input for high-side gate V-phase driver	1	4
WH	I	Logic input for high-side gate W-phase driver	2	5
UL	I	Logic input for low-side gate U-phase driver	3	6
VL	I	Logic input for low-side gate V-phase driver	4	7
WL	I	Logic input for low-side gate W-phase driver	5	8
GND	GND	GND	6	9
PS	I	Power-saving terminal	7	10
VCC	O	Internal 5V Regulator, the power supply of low voltage and logic	8	11
CL	O	Capacitor connect pin for Charge pump	9	12
CH	O	Capacitor connect pin for Charge pump	10	13
GND	GND	GND	11	14
VM	Power	Power supply for driver	12	15
ULD	O	Low-side gate driver U-phase output	13	16
UHD	O	High-side gate driver U-phase output	14	17
WLD	O	Low-side gate driver W-phase output	15	18
WHD	O	High-side gate driver W-phase output	16	19
VLD	O	Low-side gate driver V-phase output	17	20
VHD	O	High-side gate driver V-phase output	18	1
VG	O	Capacitor connect pin for regulator	19	2
UH	I	Logic input for high-side gate U-phase driver	20	3

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.

PTC cannot assume responsibility for use of any circuitry other than circuitry entirely embodied in a PTC product. No circuit patent licenses are implied.

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