

## DESCRIPTION

PT2432 is an integrated 3-phase sensor-less BLDC motor driver with advanced protections including soft-start circuitry, thermal shutdown, lock protection and output current limit. PT2432 is well-suited for sensorless motor applications and is ideal for fan motor control requiring high power efficiency. The speed control interface supports both PWM and DC command allowing smooth low speed to high speed motor control. PT2432 requires few peripheral devices, enabling compact PCB layout.

PT2432 utilizes a new multi-power BCD technology, requires a single VDD power supply, uses the HTSSOP16, HTSSOP20 and QFN48 package and achieves excellent power efficiency making it the perfect solution for compact, low-cost, sensor-less BLDC motor systems. PT2432 has different packages for different applications.

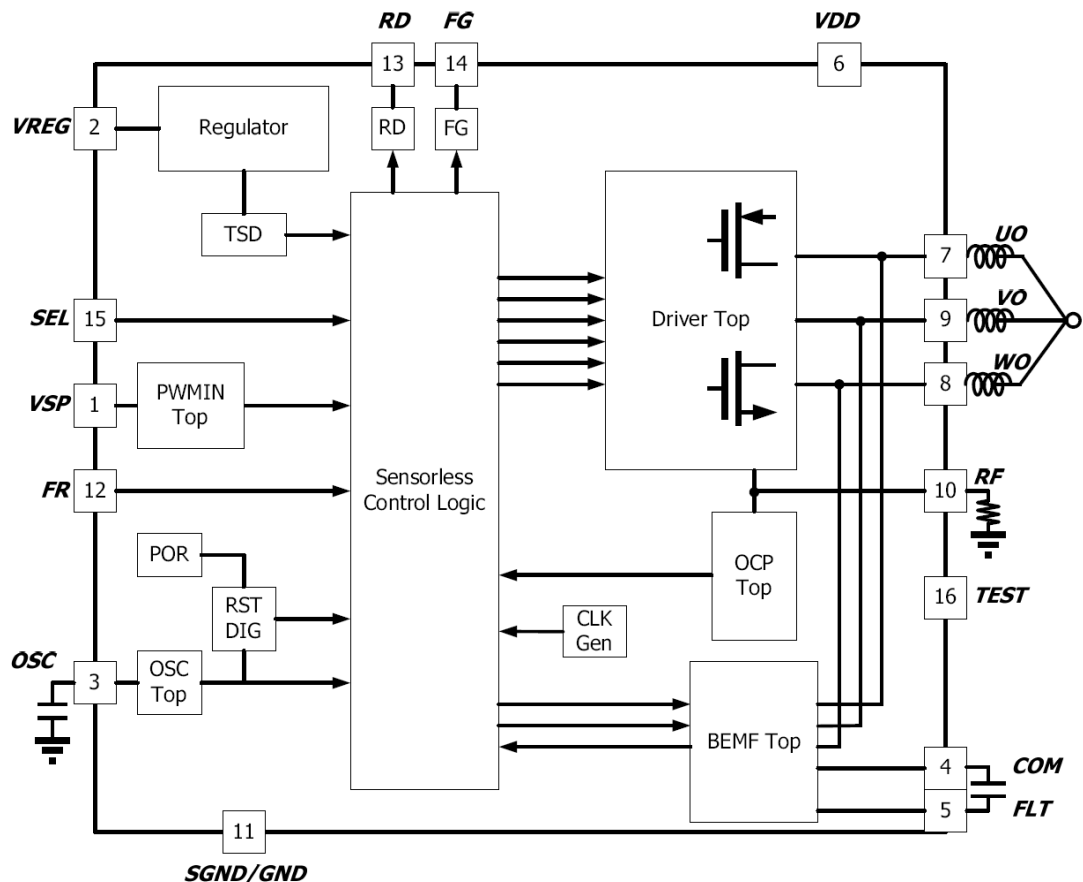
## FEATURES

- Multi-power BCD technology
- 3-phase sensorless control
- Soft-start control function
- Soft-switching function for silent operation
- Lock protect function
- Thermal protection function with 30°C hysteresis window
- Supports both PWM or DC command for motor speed control
- Over-current limit set by an external precision resistor
- FG output function, providing a pulse signal similar to a Hall sensor
- Built-in fast startup function (option)

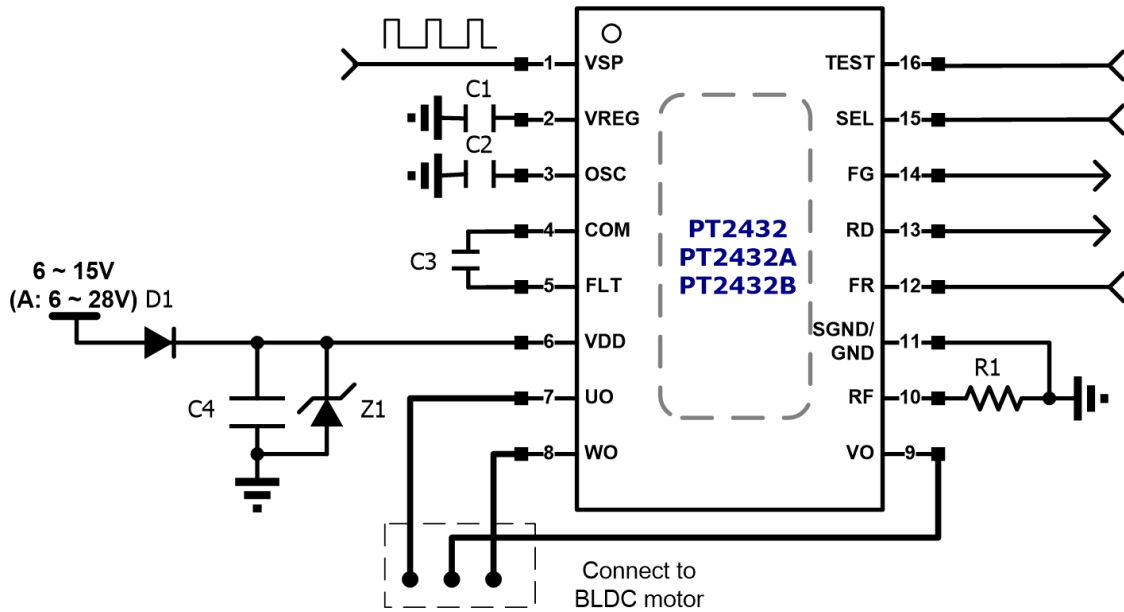
## APPLICATIONS

- 3-phase sensor-less BLDC motor driver
- Fans for CPU, GPU, or server
- Pump

## BLOCK DIAGRAM



## APPLICATION CIRCUIT FOR HTSSOP16

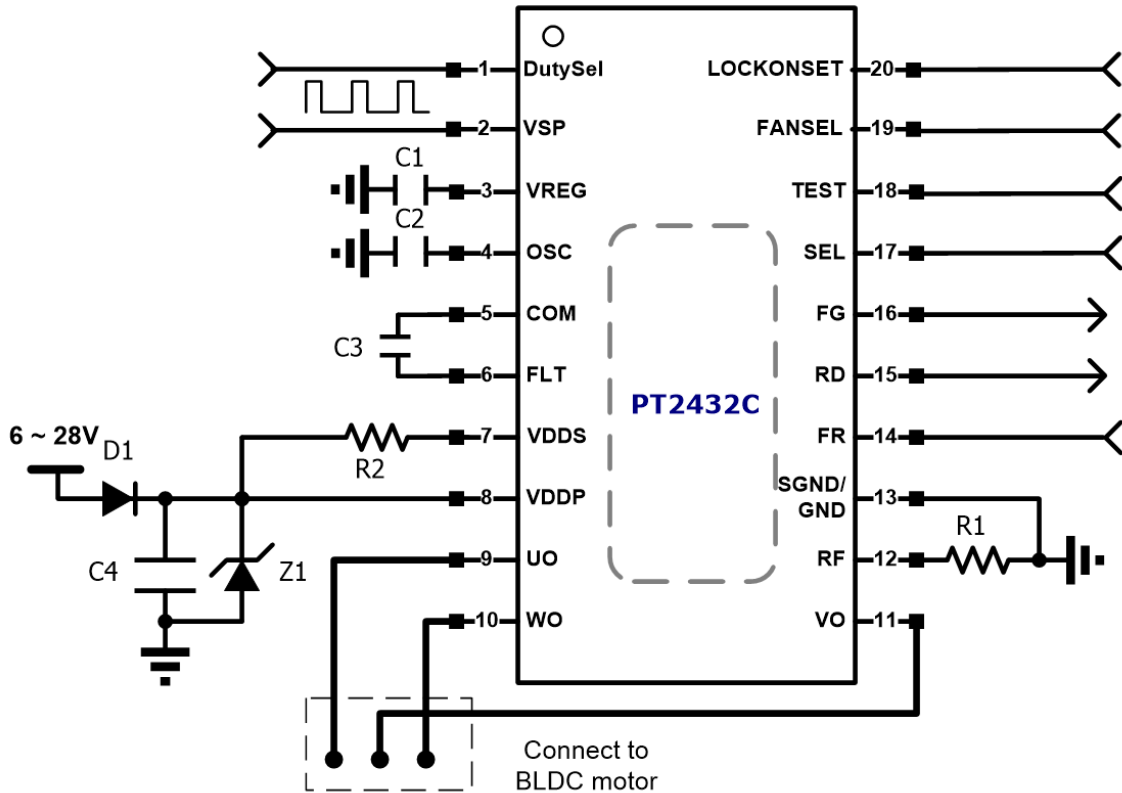


## BOM FOR APPLICATION CIRCUIT

Part	Value	Unit	Description
C1	1u	F	Regulator stability capacitor
*C2	1n	F	Oscillator start-up capacitor, 100pF - 3.9nF
*C3	1n	F	ZC signal low pass filter capacitor, 100pF - 10nF
C4	10u	F	Power supply de-coupling capacitor
*R1	0.15	Ω	Reference voltage current limit resistor
D1	1N5819	V	Prevent BEMF feedback to power supply
Z1	15 (A: 28)	V	Large voltage spike Zener protection diode
U1	PT2432	IC	3-phase sensor-less driver IC

Notes : 1. C2 & C3 are depend on motor type.  
2. R1 is depend on motor application.

## APPLICATION CIRCUIT FOR HTSSOP20



## BOM FOR APPLICATION CIRCUIT

Part	Value	Unit	Description
C1	1u	F	Regulator stability capacitor
*C2	1n	F	Oscillator start-up capacitor, 100pF - 3.9nF
*C3	1n	F	ZC signal low pass filter capacitor, 100pF - 10nF
C4	10u	F	Power supply de-coupling capacitor
*R1	0.15	Ω	Reference voltage current limit resistor
R2	47	Ω	Voltage current limit resistor
D1	1N5819	V	Prevent BEMF feedback to power supply
Z1	28	V	Large voltage spike Zener protection diode
U1	PT2432C	IC	3-phase sensor-less driver IC

Notes : 1. C2 & C3 are depend on motor type.  
 2. R1 is depend on motor application.

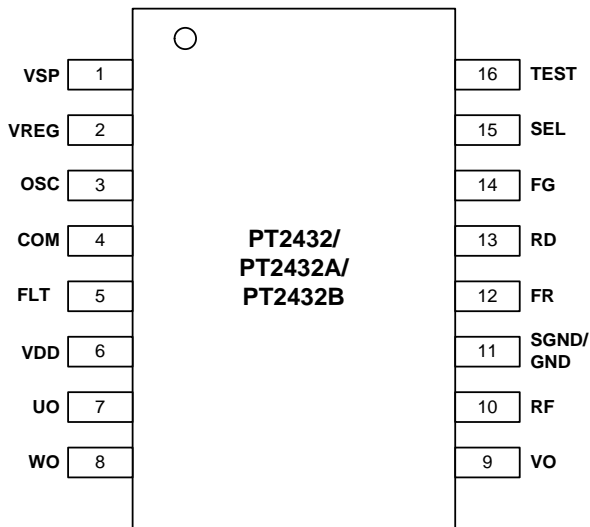


## ORDER INFORMATION

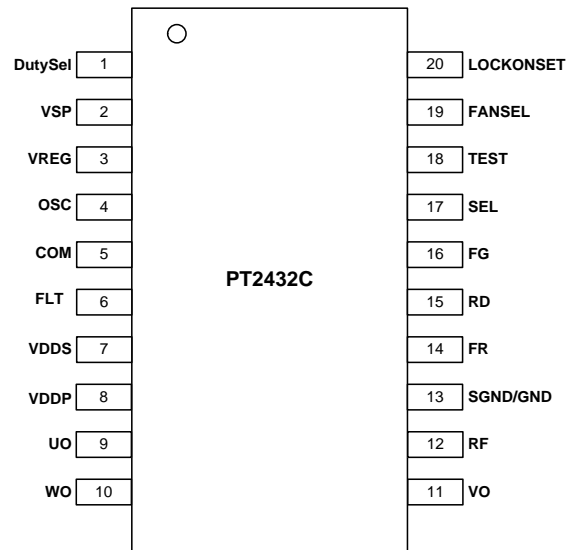
Valid Part No.	Package Type	Top Code
PT2432	16 Pins, HTSSOP	PT2432-HT
PT2432A	16 Pins, HTSSOP	PT2432A-HT
PT2432B	16 Pins, HTSSOP	PT2432B-HT
PT2432C	20 Pins, HTSSOP	PT2432C-HT
PT2432	48 Pins, QFN	PT2432

## PIN CONFIGURATION

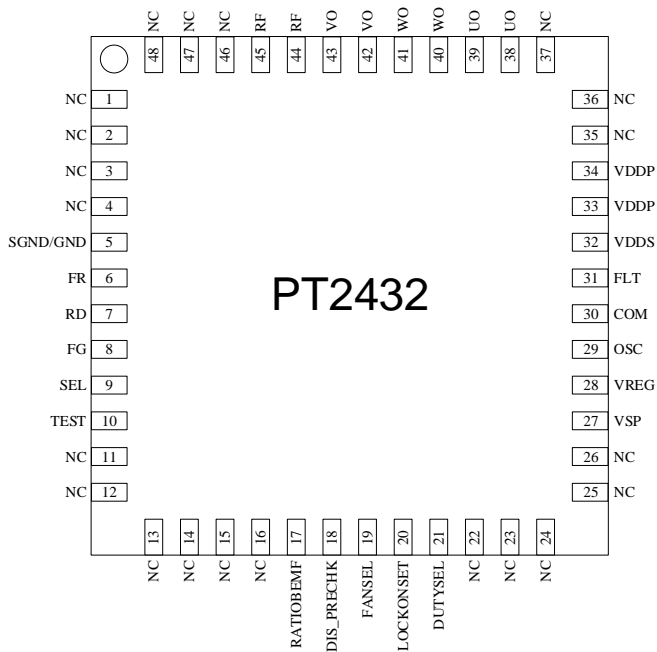
### HTSSOP16



### HTSSOP20



### QFN48



## **IMPORTANT NOTICE**

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