

DESCRIPTION

The PT2434 is a three-phase, sensor-less, brushless DC motor control chip. System operating voltage depends on the VM (motor voltage), from 12V to 400Vdc. On-chip LDO can provide 5V voltage for logic and analog circuits operation. The three-phase sensor-less control is based on trapezoid wave, and additional soft-switching scheme is designed for reducing electrical audible noise in motor phase commutation. To combine with an external high voltage gate driver and six n-channel MOSFETs, PT2434 can operate high voltage motor up to 400V. On the 12V to 36V operation, it is easy to setup with simple level-shift circuit and combined with external PN MOSFETs. The PT2434 offers external parameters setting for optimum adjustment with different motors or applications. The package of PT2434 is SSOP28.

FEATURES

- Sensor-less control for 3-phase BLDC
- Current limit function
- Over temperature protection from external NTC
- Motor lock protection
- Reverse function.
- PWM or DC input for speed control

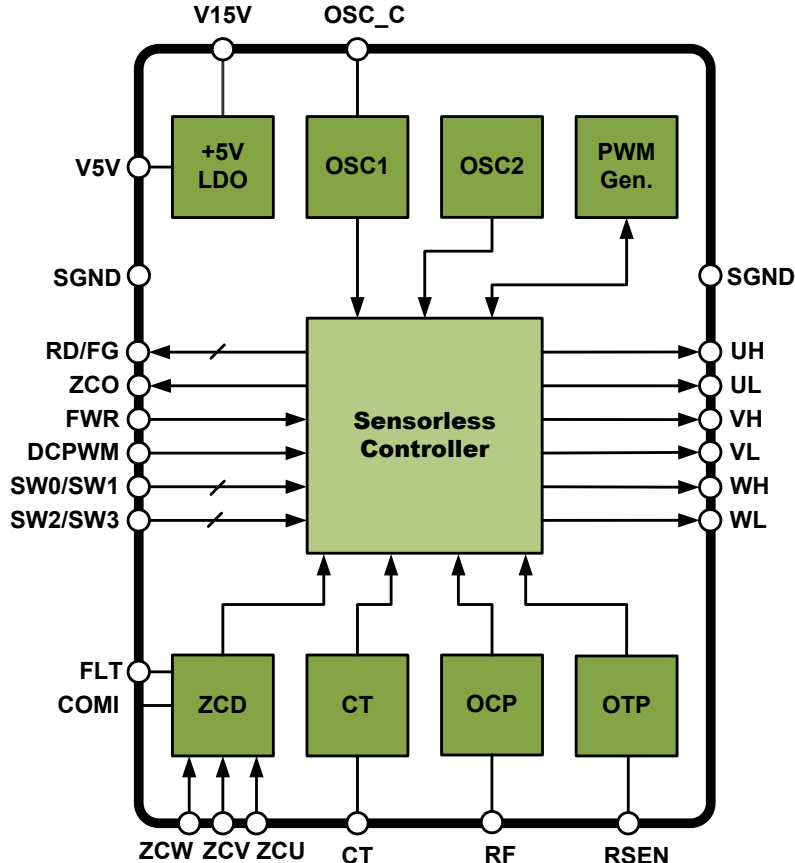
APPLICATIONS

- Three-phase BLDC motor
- Three-phase BLDC fan, blower
- Three-phase BLDC ceiling fan

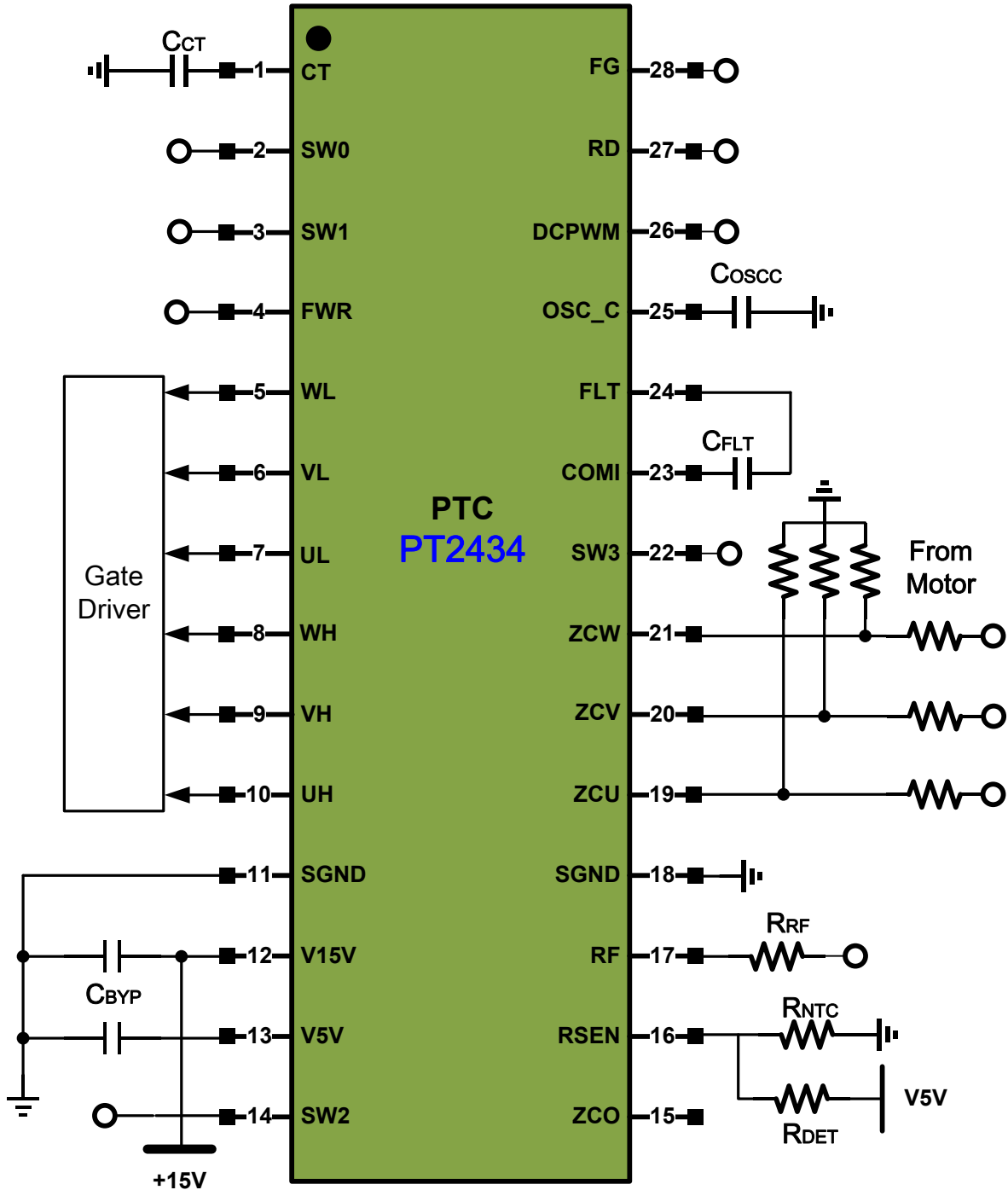
FG OUTPUT FOR ROTATION SPEED

- RD output for look detection

BLOCK DIAGRAM



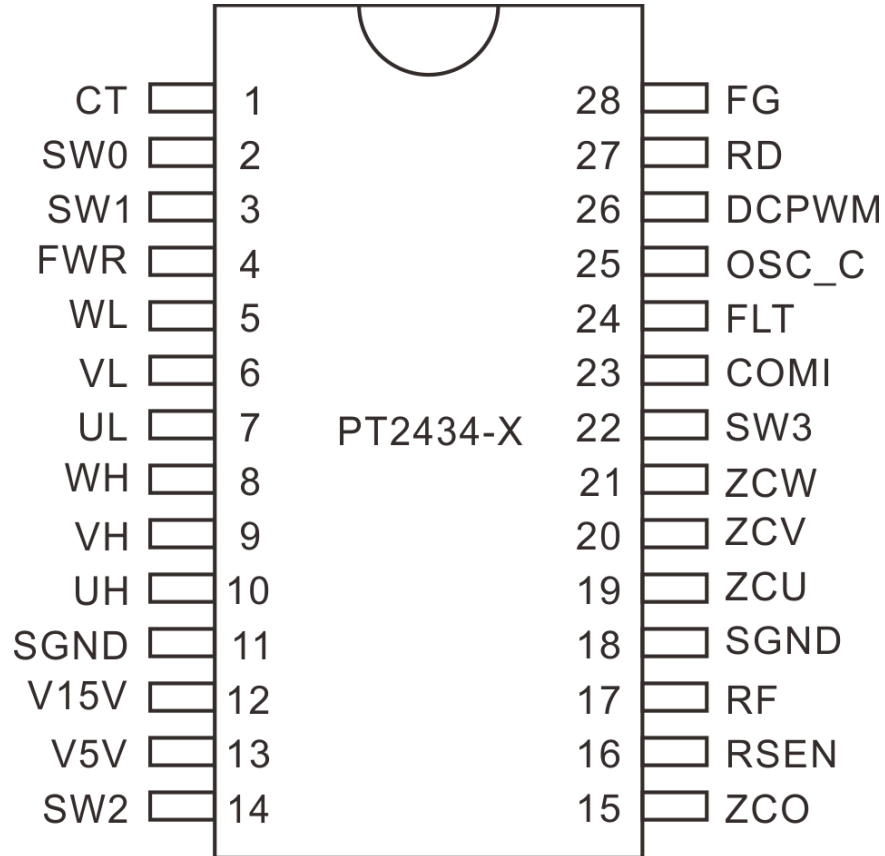
APPLICATION CIRCUIT



ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT2434-X	28-Pin, SSOP	PT2434-X

PIN CONFIGURATION





PIN DESCRIPTION

Pin Name	I/O/P	Description	Pin No.
CT	O	Connect to external capacitor for setting lock and release time	1
SW0	I	Dead-time parameter setting. Refer to ELECTRIC CHARACTERISTIC, floating for HIGH	2
SW1	I		3
FWR	I	Forward and reverse rotation setting. LOW for CCW, and HIGH (or floating) for CW	4
WL	O	W phase low side signal output	5
VL	O	V phase low side signal output	6
UL	O	U phase low side signal output	7
WH	O	W phase high side signal output	8
VH	O	V phase high side signal output	9
UH	O	U phase high side signal output	10
SGND	P	Signal ground	11
V15V	P	+15V supply input	12
V5V	O	+5V LDO output	13
SW2	I	PWM type setting. LOW for soft-switching, and HIGH (or floating) for normal trapezoid-wave.	14
ZCO	O	ZC comparator output for signal monitoring	15
RSEN	O	Connect to external resistors for over temperature sensing	16
RF	I	Current limit voltage sensing	17
SGND	P	Signal ground	18
ZCU	I	U phase zero crossing input	19
ZCV	I	V phase zero crossing input	20
ZCW	I	W phase zero crossing input	21
SW3	I	Startup alignment strength setting. LOW for normal alignment, and HIGH (or floating) for light alignment	22
COMI	O	Motor virtual neutral voltage	23
FLT	I	Zero crossing filter	24
OSC_C	I	Connect to external capacitor for startup step setting	25
DCPWM	I	DC or PWM input for speed control	26
RD	O	Motor lock indicator, OPEN DRAIN structure, HIGH for abnormal event.	27
FG	O	Motor rotation speed indicator, OPEN DRAIN structure. Refer to FUNCTION DESCRIPTION	28

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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