

DESCRIPTION

The PT2477 is a monolith integrated motor driver designed for printers, scanners, and home or office automated equipment. The dual H-bridge drivers are consisting by all of N-channel MOSFETs, and designed to drive a 4-wires bipolar stepper motor. The output driving current of the PT2477 allows up to 1.6 Amps (mounted on dual layer PCB with proper heatsinking, $V_M=24V$, $T_A=25^\circ C$).

To simplified control interface, the STEP and DIR pins allows easy communicates with micro controller, Three Mode Select pins allow for configuration the micro steps from full-step divides to 1/32 micro-step. 3 kind of winding current decay modes are configurable to keeps motor not missing step and low current ripple. A low-power sleep mode is provided which shuts down internal circuitry to achieve very-low quiescent current draw. This sleep mode can be sets by SLEPN pin.

The PT2477 is available in 28-pins HTSSOP or 28-pins QFN package, both packages with thermal pad.

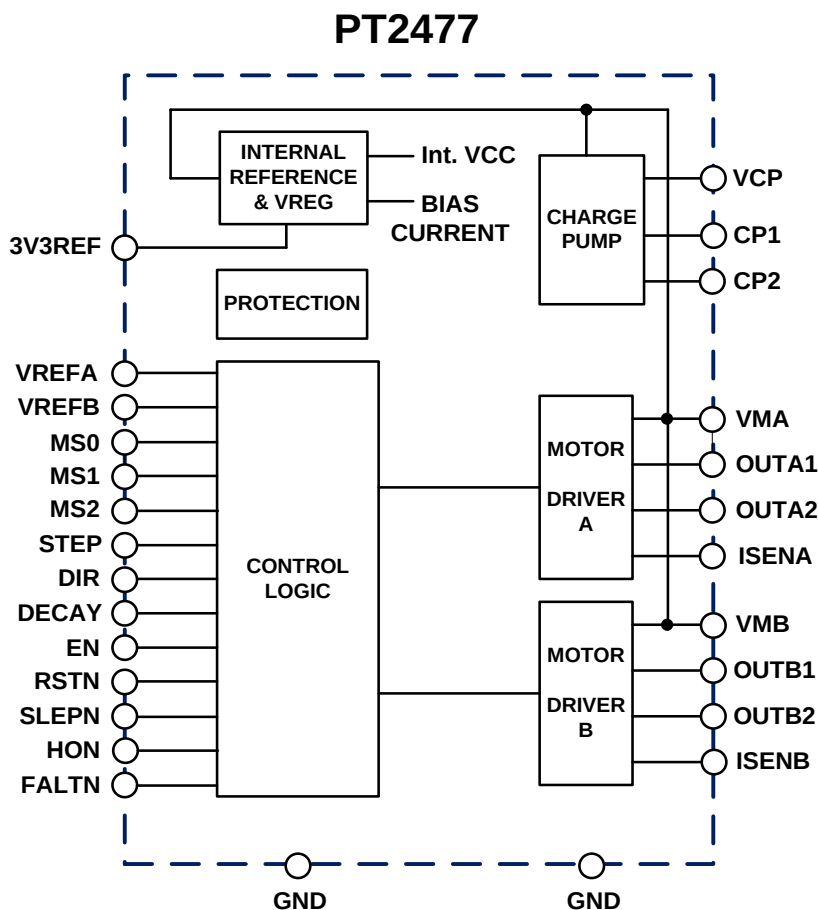
FEATURES

- 8V to 45V supply voltage range
- 1.6-A maximum driving current at $V_M=24V$ (with additional heatsink)
- Dual H-bridge driver for bipolar stepper motor with such features:
 - PWM chopping constant current regulation
 - Built-In micro stepping sequencer
 - Multiple micro steps, Full, 1/2, 1/4, 1/8, 1/16 and up to 1/32 steps
- STEP and DIR logic inputs can control stepping motor revs and direction.
- Winding current decay modes
 - Mixed Decay
 - Slow Decay
 - Fast Decay
- Built In a 3.3V reference voltage output
- Low-power sleep mode
- Protection features
 - Over current protection (OCP)
 - Thermal shutdown (TSD)
 - VM under voltage lock out (UVLO)
 - Fault indication pin (FALTN)

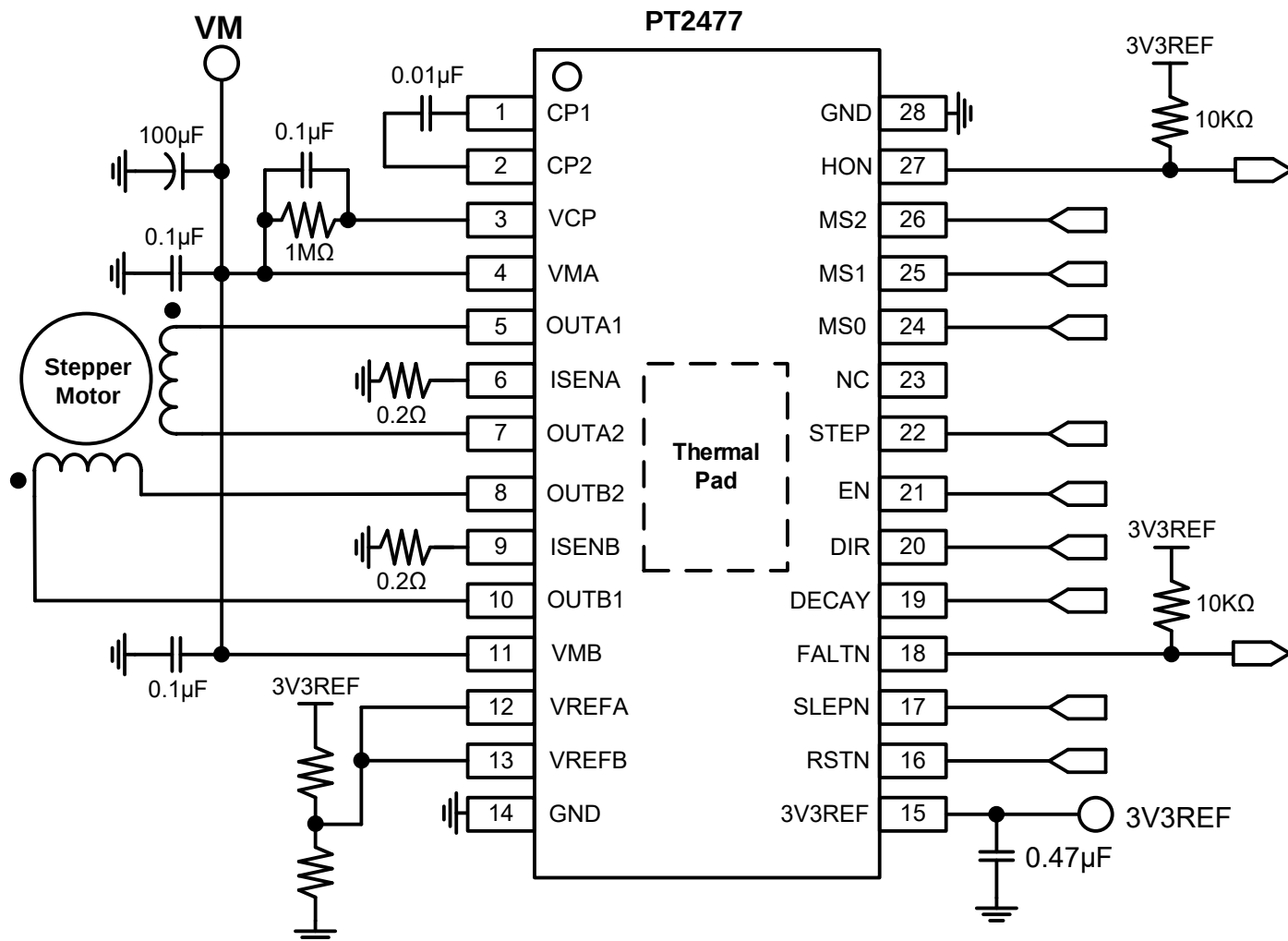
APPLICATIONS

- Automatic teller machines
- Video security cameras
- Printers
- Scanners
- Office automation machines
- Amusement machines
- Factory automation
- Robotics

BLOCK DIAGRAM



APPLICATION CIRCUIT



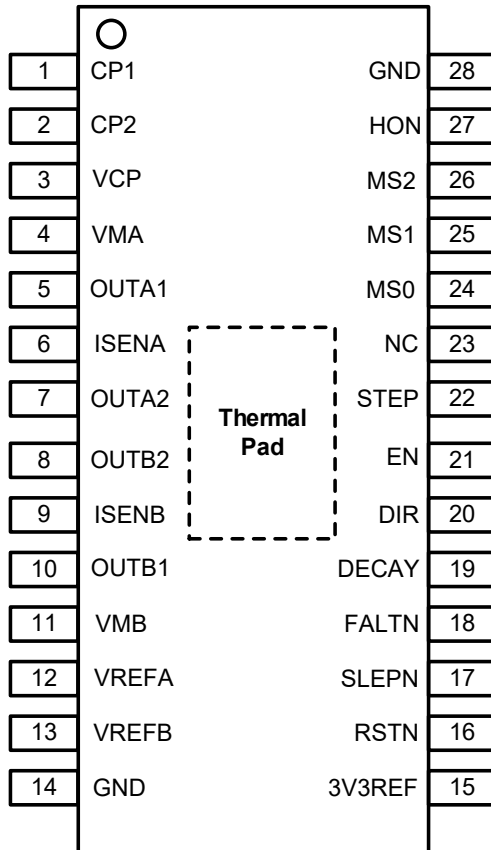
(HTSSOP-28 package for example)

ORDER INFORMATION

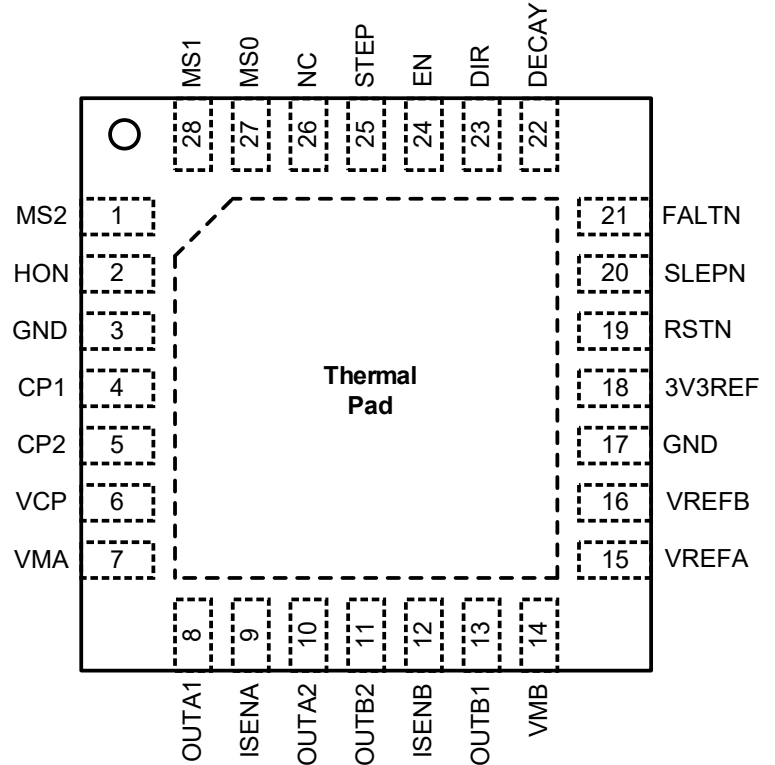
Valid Part Number	Package Type	Top Code
PT2477-HT	28 Pins, HTSSOP	PT2477-HT
PT2477	28 Pins, QFN	PT2477

PIN CONFIGURATION

PT2477
 28-Pin HTSSOP
 Top View



PT2477
 28-PIN QFN
 TOP VIEW



PIN DESCRIPTION

Pin Name	I/O	Description	Pin No.	
			HTSSOP	QFN
CP1	I	External flying capacitor for charge pump, Connect a 0.01 μ F/50V low-ESR ceramic capacitor between CP1 and CP2.	1	4
CP2	I		2	5
VCP	O	High-side gate drive supply voltage, connect a 0.1 μ F/50V ceramic capacitor and a 1M Ω resistor to VM.	3	6
VMA	-	H-Bridge A power supply	4	7
OUTA1	O	H-Bridge A output 1	5	8
ISENA	I	H-Bridge A current sense	6	9
OUTA2	O	H-Bridge A output 2	7	10
OUTB2	O	H-Bridge B output 2	8	11
ISENB	I	H-Bridge B current sense	9	12
OUTB1	O	H-Bridge B output 1	10	13
VMB	-	H-Bridge B power supply	11	14
VREFA	I	H-Bridge A current set reference input	12	15
VREFB	I	H-Bridge B current set reference input	13	16
GND	-	Device ground	14	17
3V3REF	O	3.3V reference voltage output	15	18
RSTN	I	Reset input. Logic L=Initialize all of internal logic registers and disables H-bridge outputs, Logic H= normal operation.	16	19
SLEPN	I	Sleep mode input Logic H=device enable, Logic L=low-power sleep mode.	17	20
FALTN	O	Fault, Logic low when fault condition appear (OCP, TSD)	18	21
DECAY	I	Decay mode input Logic L=slow decay, Open=mixed decay, Logic H=fast decay	19	22
DIR	I	Motor rotation Direction logic input (with Internal pulldown). Logic H= winding current A leading winding current B Logic L= winding current B leading winding current A	20	23
EN	I	Enable input (with Internal pulldown) Logic H = disable device outputs and sequencer operation Logic L = enable	21	24
STEP	I	Step input (with Internal pulldown). The step sequencer moves to next step during rising edge of STEP clock input.	22	25
NC	--	No connect	23	26
MS0	I	Micro-stepping sequencer configurations (with internal pull-down), Full, 1/2, 1/4, 1/8, 1/16, or 1/32 step depends combination of MS pins.	24	27
MS1	I		25	28
MS2	I		26	1
HON	OD	Home alignment output, active pull low at both winding current sets to +71% locations.	27	2
GND	-	Device ground	28	3