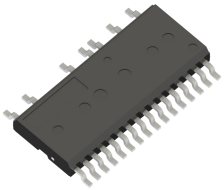
Description

CRMT5004E1 is 3-phase Integrated Power Modules (IPM) designed for advanced appliance motor drive applications such as energy efficient fans and pumps.
This module Integrated 6 fast recovery MOSFETs and 3 high voltage gate drivers in a familiar package. This module is optimized for low EMI characteristics.

Features

- 500V 3-phase inverter including high voltage gate drivers
- HVIC Temperature-Sensing Built-In for temperature Monitoring
- Works with 3.3V/5V MCU, Active-High interface
- HVIC for Under-voltage Protection
- Integrated bootstrap functionality
- Isolation Rating 1500V



SOP-23A

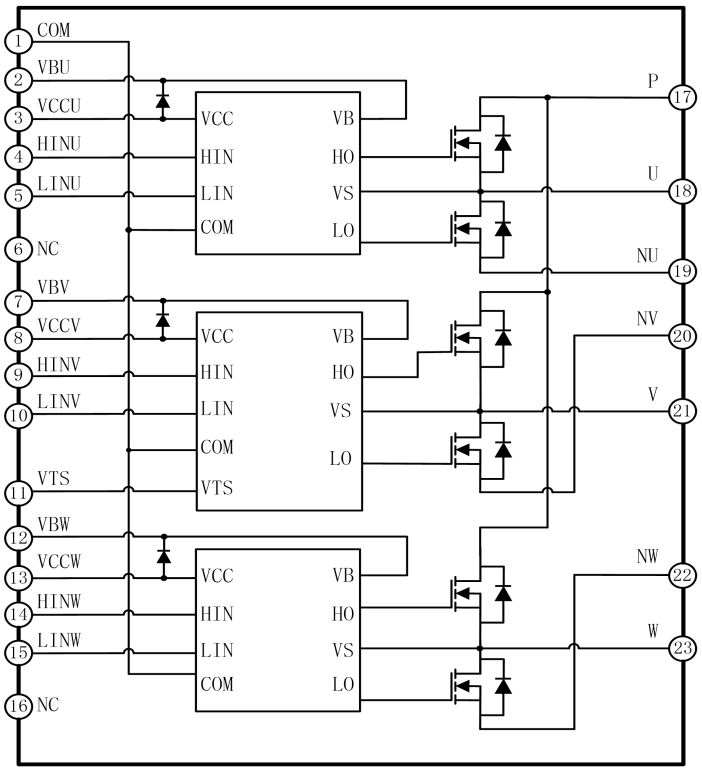
Applications

- Energy efficient fans
- Pumps

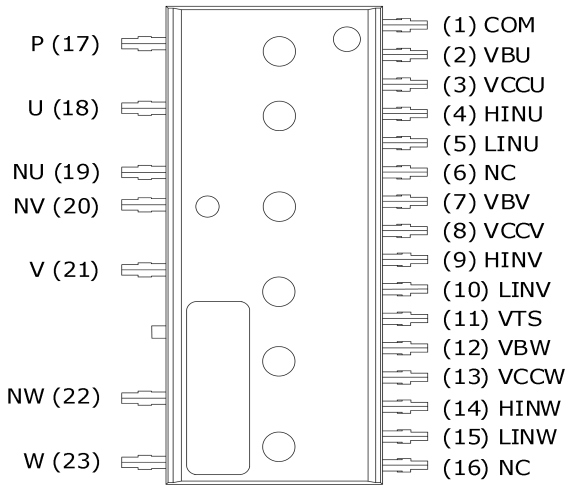
Package Marking and Ordering Information

Part #	Marking	Package	Packing	Quantity	V_{TS}
CRMT5004E1	CRMT5004E1	SOP-23A	Tube	340/640	Yes

Internal Electrical Schematic



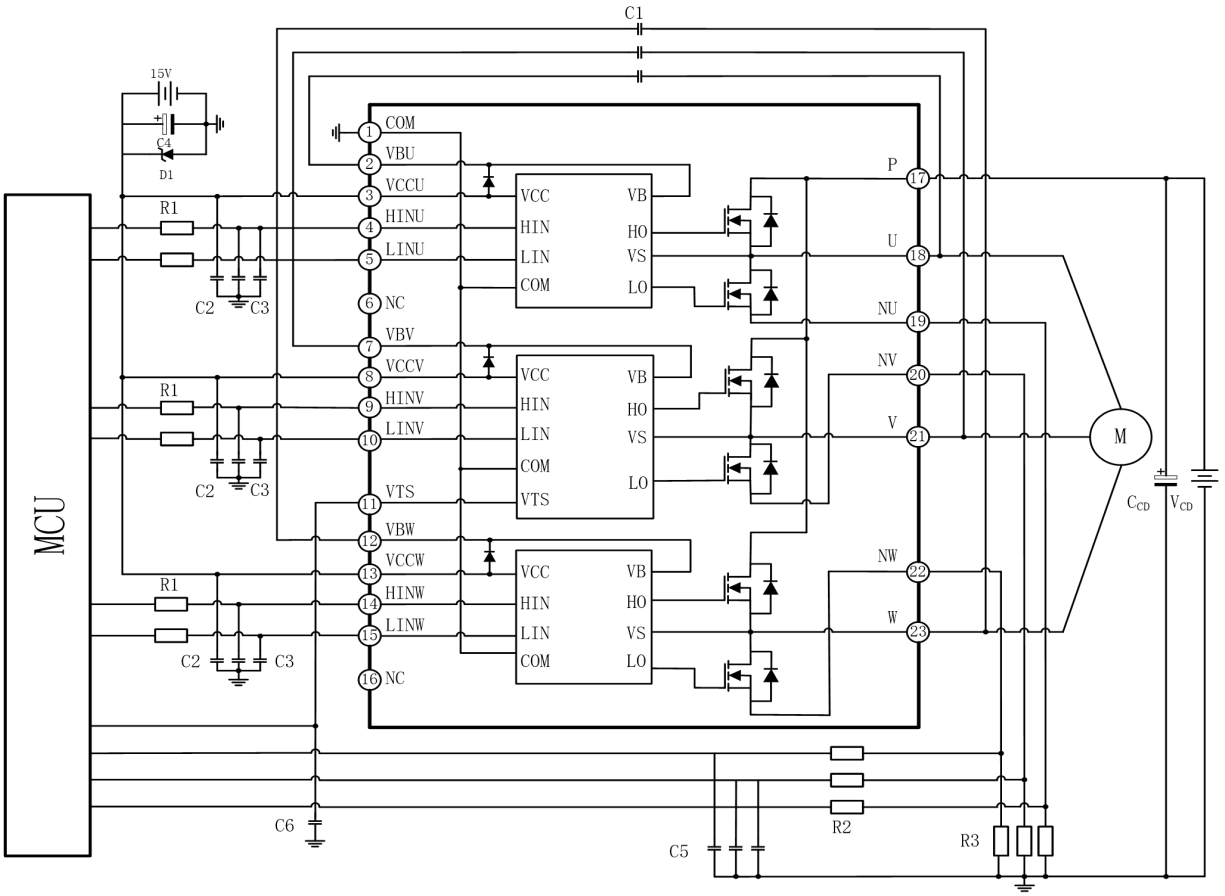
Module Pin-Out Description



Top view

Pin Number	Pin Name	Description
1	COM	Logic Ground
2	VBU	High Side Floating Supply Voltage U
3	VCCU	Low Side Supply Voltage U
4	HINU	Logic Input for High Side Gate Driver - Phase U
5	LINU	Logic Input for Low Side Gate Driver - Phase U
6	NC	Not Connected
7	VBV	High Side Floating Supply Voltage V
8	VCCV	Low Side Supply Voltage V
9	HINV	Logic Input for High Side Gate Driver - Phase V
10	LINV	Logic Input for Low Side Gate Driver - Phase V
11	VTS	Temperature-sensing Voltage Output
12	VBW	High Side Floating Supply Voltage W
13	VCCW	Low Side Supply Voltage W
14	HINW	Logic Input for High Side Gate Driver - Phase W
15	LINW	Logic Input for Low Side Gate Driver - Phase W
16	NC	Not Connected
17	P	DC Bus Voltage Positive
18	U	Output - Phase U, High Side Floating Supply Offset U
19	NU	Phase U Low Side Source
20	NV	Phase V Low Side Source
21	V	Output - Phase V, High Side Floating Supply Offset V
22	NW	Phase W Low Side Source
23	W	Output - Phase W, High Side Floating Supply Offset W

Application Circuit



Remark:

1、Input drive is High-Active type.To prevent malfunction, the wiring of each input should be as short as possible.

When using RC coupling circuit, make sure the input signal level meet the turn-on and turn-off threshold voltage.

2、Thanks for HVIC inside modules, direct coupling to MCU without any opto-coupler or transformer isolation is possible.

3、 The terminals of VTS is used to temperature detection, if you don't want to use it, please pull-down the terminal with a 100 KΩ resistor to GND. No connection is forbidden.

4、All capacitors should be mounted as close to the terminals of the IPM as possible.

5、The HIN and LIN have internal pull-down resistors. Additional pull-down resistors can be connected if necessary.

6、Bootstrap negative electrodes should be connected to U, V, W terminals directly and separated from the main output wires.

7、High frequency capacitor C1(greater than 2.2μF) is used as the bootstrap-up capacitor to absorb high frequency ripple.

Package Outline

SOP-23A

UNIT:mm

