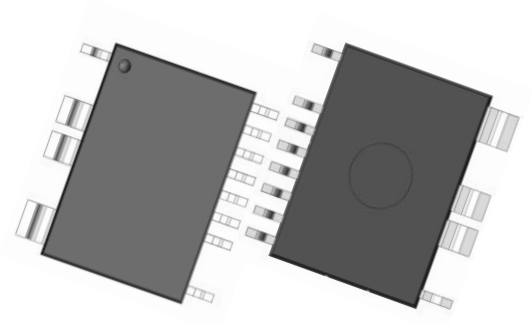
Description

CRM60TE04HA is half-bridge Modules (IPM) designed for advanced appliance motor drive applications such as energy efficient air conditioner and fans.
CRM60TE04HA Integrated 2 fast recovery MOSFETs and 1 high voltage gate driver in SOP-11 package. The module is optimized for low EMI characteristics.

Features

- 600V half-bridge including high voltage gate driver
- Internal integrated temperature detection output
- Signal high level valid,compatible with 3.3V and 5V MCU
- Built-in Under-voltage Protection
- Built-in bootstrap diode
- Built-in high accurate short-circuit current protection
- Built-in enable shut down function
- Built-in cross-conduction prevention logic
- Isolation Rating 1500V



SOP-11

Applications

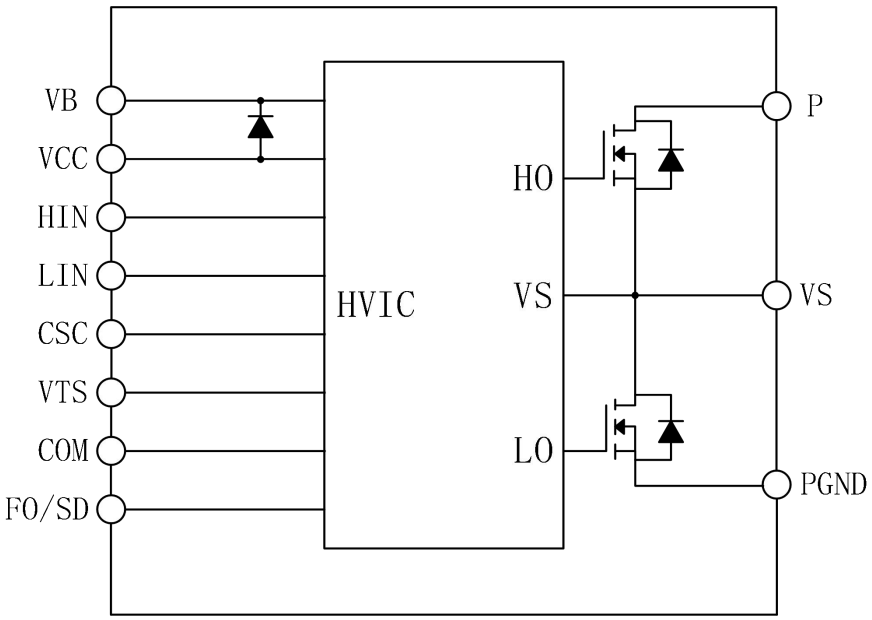
•Air conditioner

• Fans

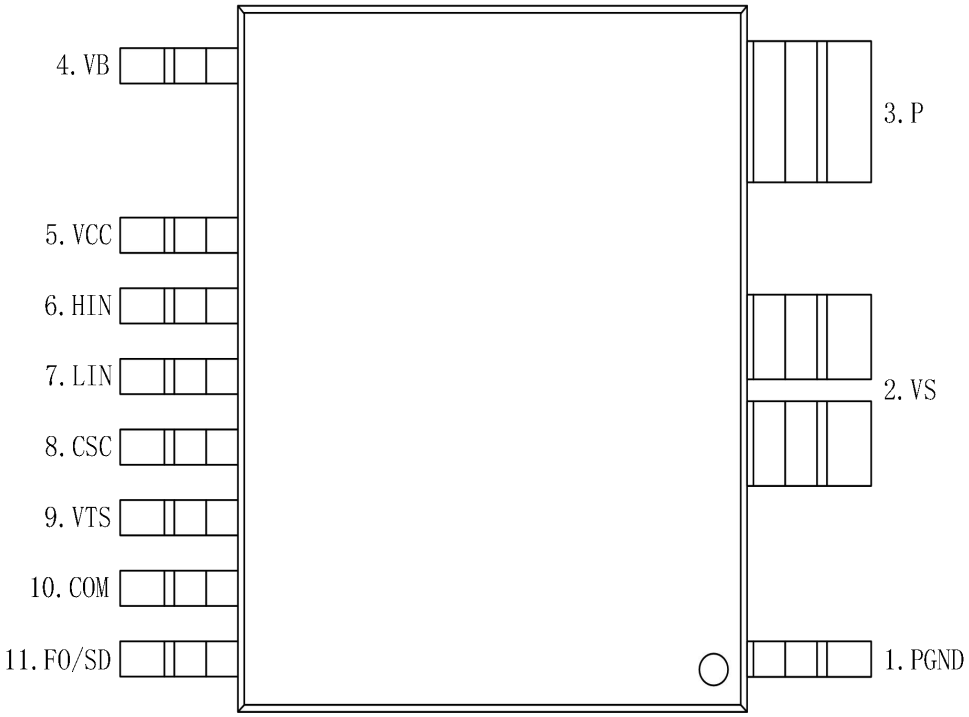
Package Marking and Ordering Information

Part #	Marking	Package	Packing	Quantity
CRM60TE04HA	CRM60TE04HA	SOP-11	Taping	3000

Internal Electrical Schematic

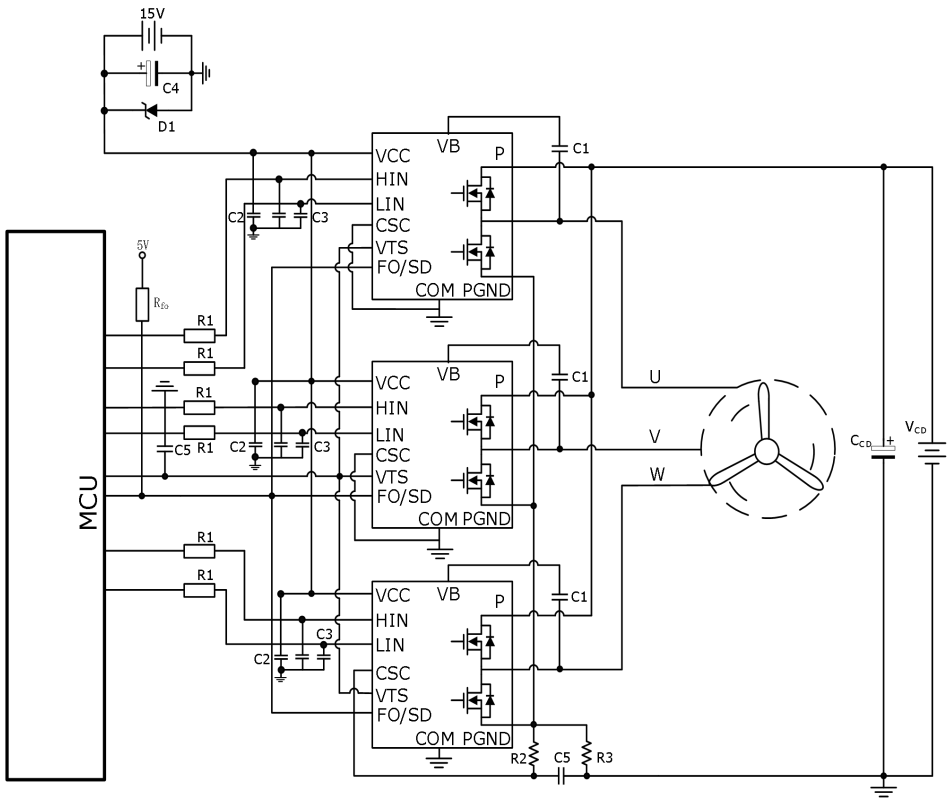


Module Pin-Out Description



Pin Number	Pin Name	Description
1	PGND	Source for low side MOSFET
2	VS	High Side Floating Offset Voltage
3	P	DC Bus Voltage Positive
4	VB	High Side Floating Supply Voltage
5	VCC	Power supply for low side
6	HIN	Logic Input for High Side Gate Driver
7	LIN	Logic Input for Low Side Gate Driver
8	CSC	External capacitance,short-circuit current input
9	VTS	Temperature Output
10	COM	Logic Ground
11	FO/SD	Fault output,shut down

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 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.

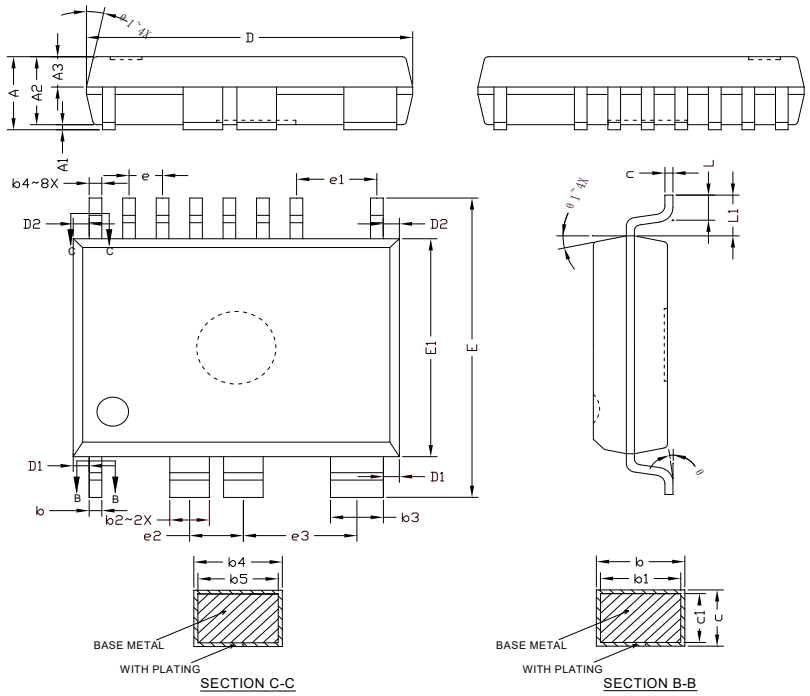
6、Bootstrap negative electrodes should be connected to U, V, W terminals directly and separated from the main output wires.

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

Package Outline

SOP-11

UNIT:mm



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	--	--	2.615
A1	0.125	--	0.225
A2	2.29	2.34	2.39
A3	0.993	1.043	1.093
b	0.37	--	0.47
b1	0.36	0.40	0.46
b2	--	--	1.25
b3	--	--	1.67
b4	0.35	--	0.45
b5	0.34	0.38	0.44
c	0.25	--	0.29
c1	0.24	0.25	0.26
D	10.20	10.30	10.40
D1	0.502(BSC)		
D2	0.515(BSC)		
E	10.106	10.306	10.506
E1	7.40	7.50	7.60
e	1.058(BSC)		
e1	2.54(BSC)		
e2	1.69(BSC)		
e3	3.60(BSC)		
L	0.75	--	0.97
L1	1.403(REF)		
θ	0°	~	8°
θ1	6°	~	15°