

Description

CRM25TD07R1 is half-bridge Modules (IPM) designed for advanced appliance motor drive applications such as American and Japanese standard hair dryer and water pump.

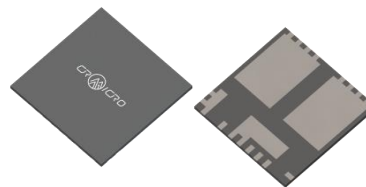
CRM25TD07R1 Integrated 2 fast recovery MOSFETs and 1 high voltage gate driver in QFN7x7 package. The module is optimized for low EMI characteristics.

Features

- 250V three-phase inverter
- 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
- Isolation Rating 1500V

Applications

- hair dryer
- water Pumps

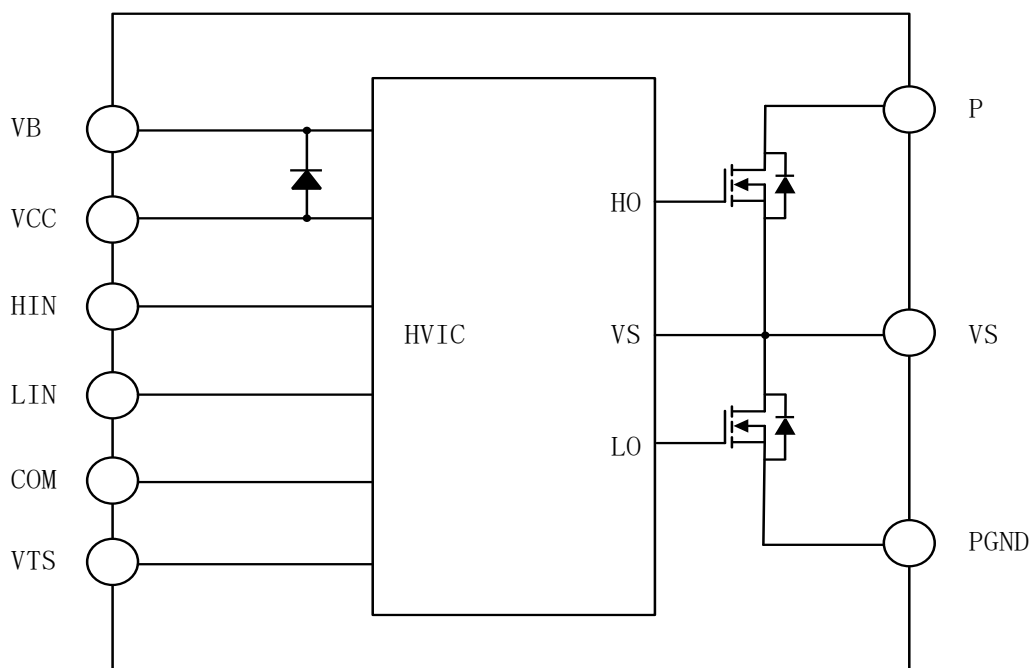


QFN7x7

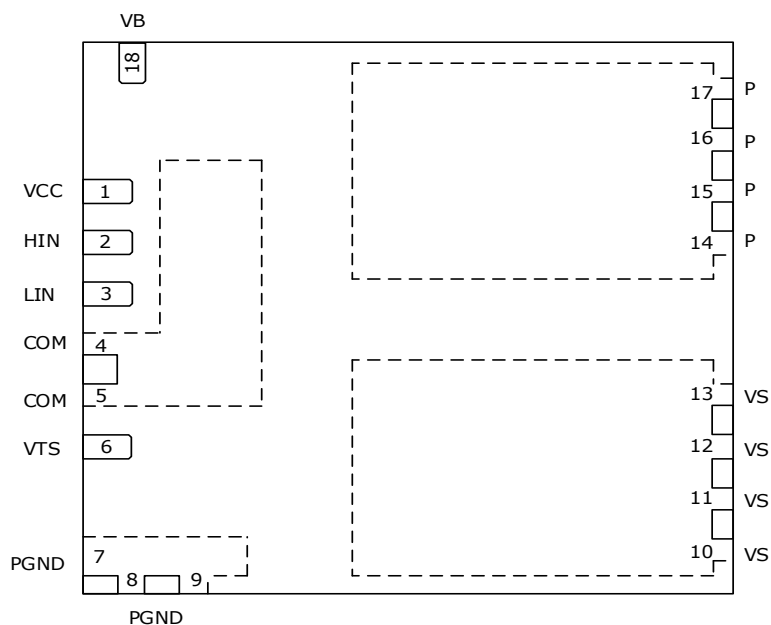
Package Marking and Ordering Information

Part #	Marking	Package	Packing	Quantity	V _{TS}	Green
CRM25TD07R1	CRM25TD07R1	QFN7x7	Taping	3000	Yes	RoHS

Internal Electrical Schematic



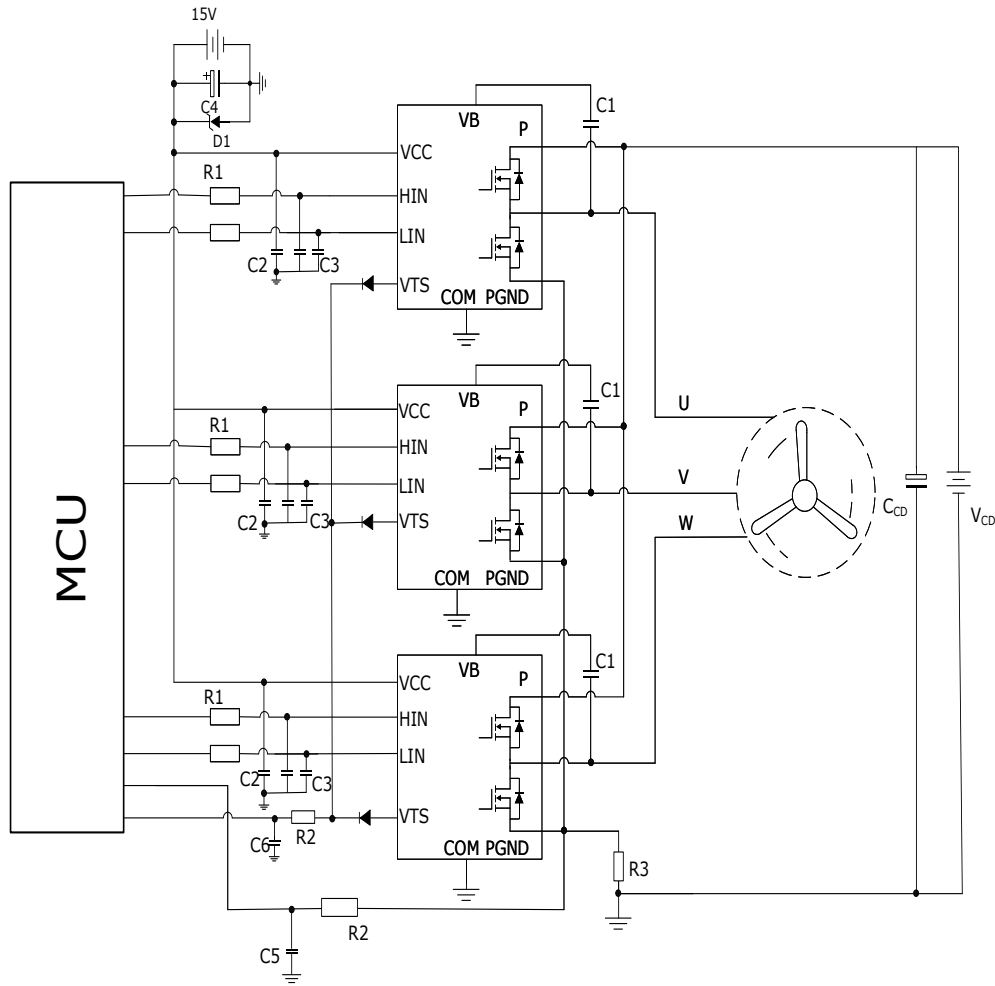
Module Pin-Out Description



TOP View

Pin Number	Pin Name	Description
1	VCC	Power supply for Low side
2	HIN	Logic Input for High Side Gate Driver
3	LIN	Logic Input for Low Side Gate Driver
4,5	COM	Logic Ground
6	VTS	Temperature-sensing Voltage Output
7,8,9	PGND	Source for low side MOSFET
10,11,12,13	VS	High Side Floating Offset Voltage
14,15,16,17	P	DC Bus Voltage Positive
18	VB	High Side Floating Supply Voltage

Application Circuit



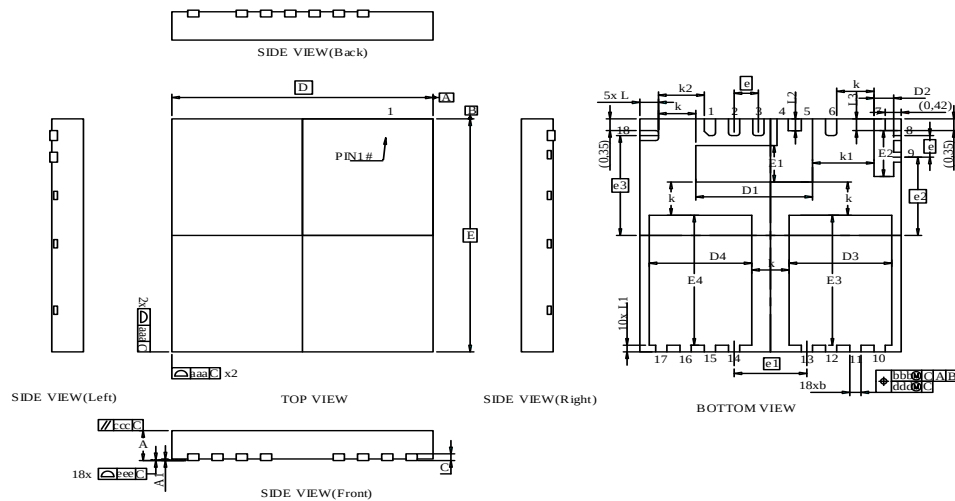
Remark:

- 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 K Ω 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 2.2 μ F) is used as the bootstrap-up capacitor to absorb high frequency ripple.

Package Outline

QFN7x7

UNIT:mm



DIM SYMBOL	MIN.	NOM.	MAX.	DIM SYMBOL	MIN.	NOM.	MAX.
A	0.80	0.90	1.00	e1	1.95BSC		
	0.75	0.85	0.95	e2	2.35BSC		
C	-	0.203 REF	-	e3	3.00BSC		
A1	-	-	0.05	L	0.45	0.50	0.55
b	0.25	0.30	0.35	L1	0.15	0.20	0.25
D	7.00 BSC			L2	0.305	0.355	0.405
E	7.00 BSC			L3	0.30	0.35	0.40
D1	3.025	3.125	3.225	k	-	1.00	-
E1	0.996	1.096	1.196	k1	-	1.65	-
D2	0.425	0.525	0.625	k2	-	1.225	-
E2	1.28	1.38	1.48	aaa	0.15		
D3	2.65	2.75	2.85	bbb	0.10		
E3	3.804	3.904	4.004	ccc	0.10		
D4	2.65	2.75	2.85	ddd	0.05		
E4	3.804	3.904	4.004	eee	0.08		
e	0.65 BSC				-		