

● Description

WPM3DT502QTA1 is half-bridge Modules (IPM) designed for advanced appliance motor drive applications such as energy efficient fans and pumps.

These modules Integrated 2 MOSFET and 1 high voltage gate driver in a familiar package.



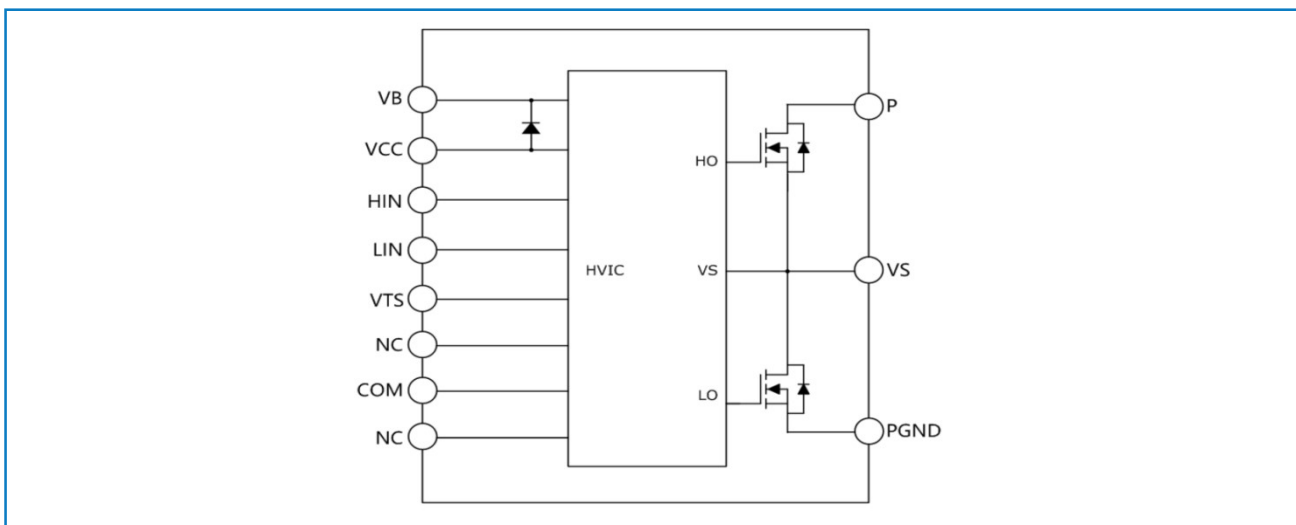
● Features

- 500V half-bridge including high voltage gate drivers
- Works with 3.3V/5V MCU, Active-High interface
- Integrated bootstrap functionality
- HVIC for Under-voltage Protection
- HVIC Temperature-Sensing Built-In for temperature Monitoring

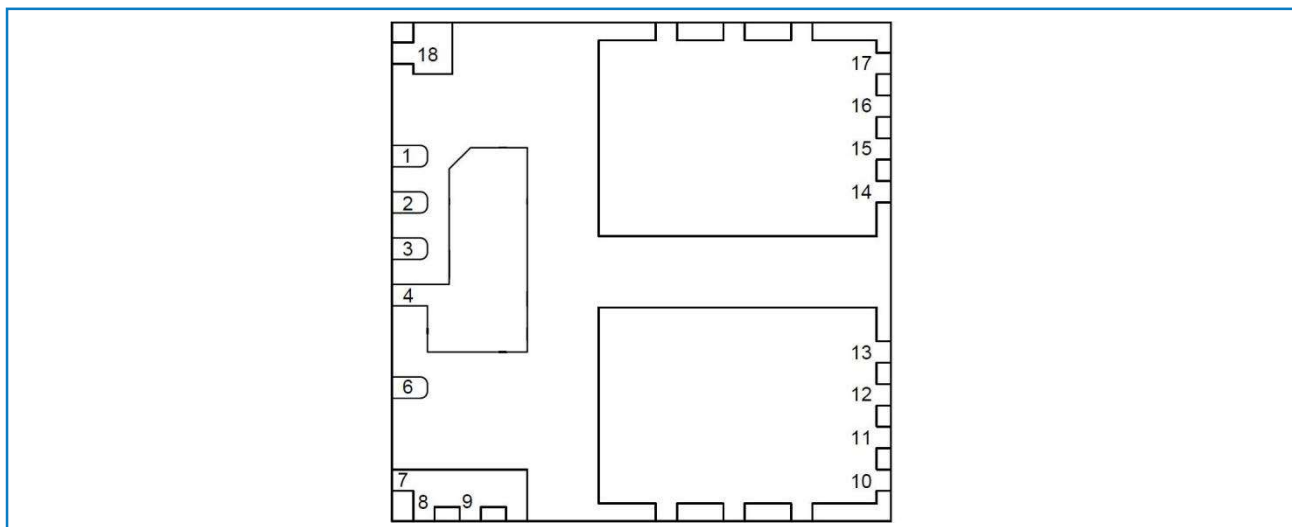
● Applications

- Energy efficient fans
- Pumps
- High speed hair dryer

● Internal Electrical Schematic

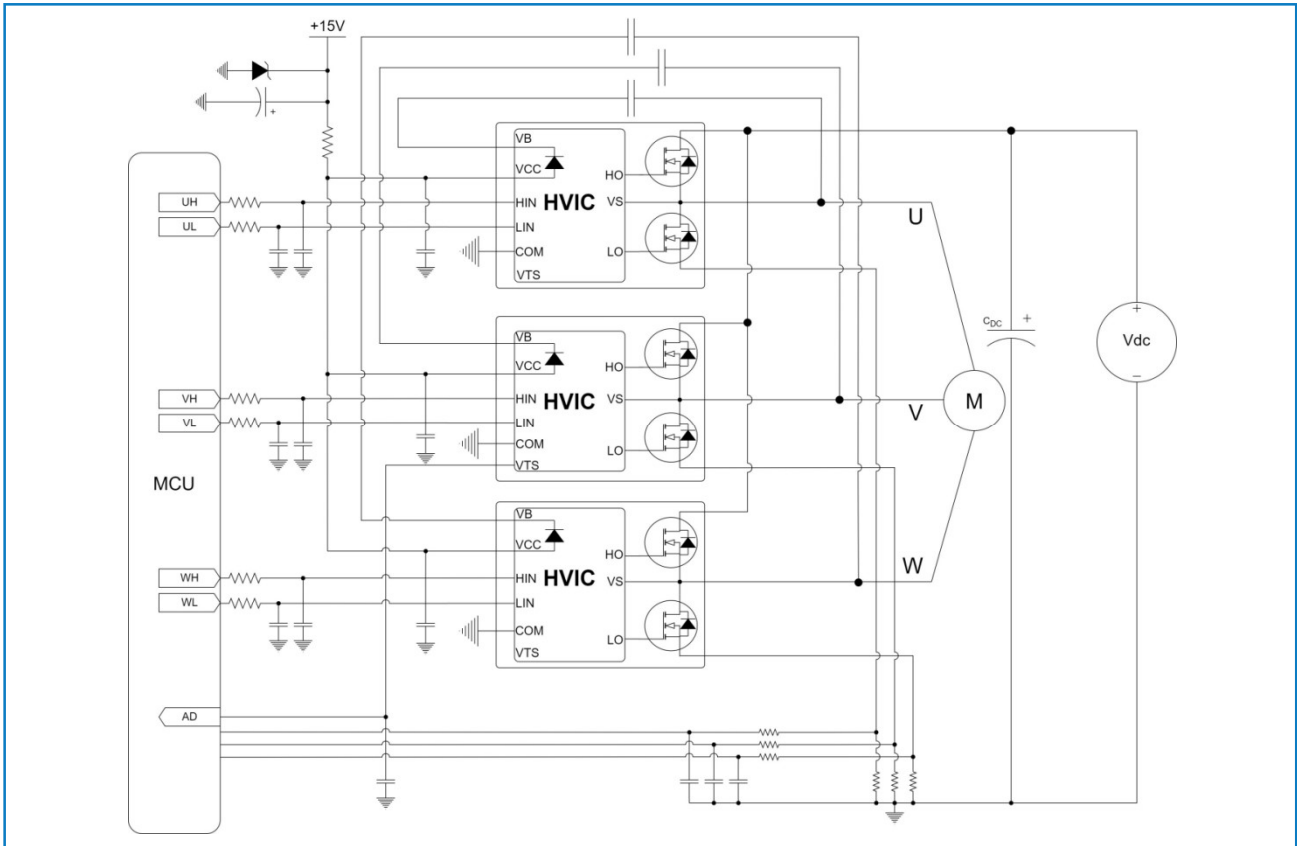


● Module Pin-Out Description



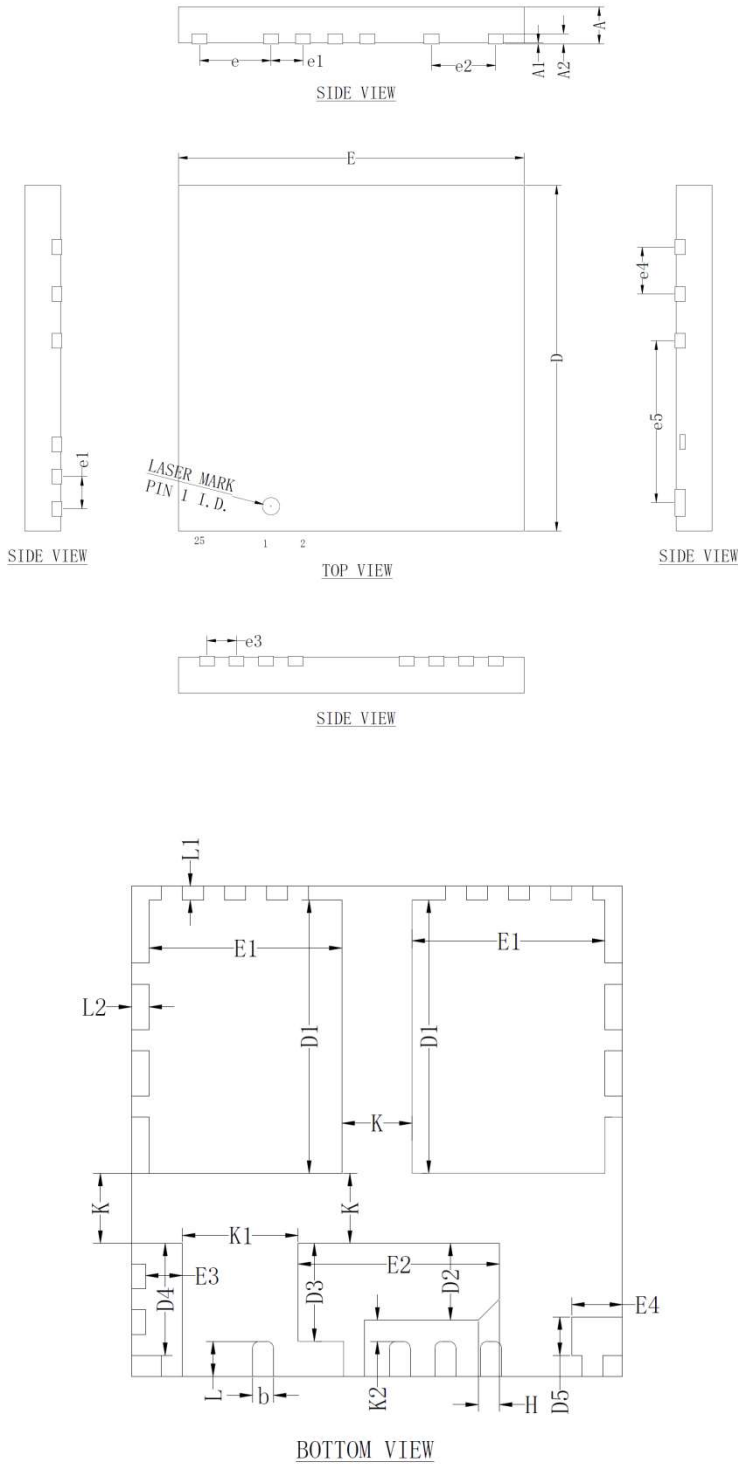
Pin Number	Pin Name	Pin Description
1	VCC	Power Supply for Low Side
2	HIN	Logic Input for High Side Gate Driver
3	LIN	Logic Input for Low Side Gate Driver
4	COM	Logic Ground
5	VTS	Temperature-sensing Voltage Output
7,8,9	PGND	Source for Low Side MOSFET
10,11,12,13	VS	High Side Floating Offset Voltage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

● **Example of Application Circuit**



Mechanical Dimensions for QFN7X7-25L

UNIT:mm



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.70	0.75	0.80
A1	--	0.02	0.05
A2	0.203REF		
b	0.25	0.30	0.35
D	6.90	7.00	7.10
E	6.90	7.00	7.10
D1	3.80	3.90	4.00
E1	2.65	2.75	2.85
D2	1.00	1.10	1.20
D3	1.30	1.40	1.50
E2	2.77	2.87	2.97
D4	1.50	1.60	1.70
E3	0.42	0.52	0.62
D5	0.45	0.55	0.65
E4	0.63	0.73	0.83
e	1.44BSC		
e1	0.65BSC		
e2	1.30BSC		
e3	0.60BSC		
e4	0.95BSC		
e5	3.27BSC		
H	0.25	0.30	0.35
K	1.00REF		
K1	1.65REF		
K2	0.30REF		
L	0.45	0.50	0.55
L1	0.15	0.20	0.25
L2	0.20	0.25	0.30

- **Ordering Information**

Part	Package	Marking	QTY(PCS)	Packing method
WPM3DT502QTA1	QFN7X7-25L	WPM3DT502QTA1	TBD	Tape and reel

Contact Information

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For additional information, please contact your local Sales Representative.

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Product Specification Statement

1.The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

2.The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. WAYON shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and WAYON assumes no responsibility for the application of the product.

3.WAYON strives to provide accurate and up-to-date information to the best of our ability. However, due to technical, human, or other reasons, WAYON cannot guarantee that the information provided in the product specification is entirely accurate and error-free. WAYON shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications. WAYON reserves the right to revise or update the product specification and the products at any time without prior notice, and the user's continued use of the product specification is considered an acceptance of these revisions and updates. Prior to purchasing and using the product, users should verify the above information with WAYON to ensure that the product specification is the most current, effective, and complete. If users are particularly concerned about product parameters, please consult WAYON in detail or request relevant product test reports. Any data not explicitly mentioned in the product specification shall be subject to separate agreement.

4.Users are advised to pay attention to the parameter limit values specified in the product specification and maintain a certain margin in design or application to ensure that the product does not exceed the parameter limit values defined in the product specification. This precaution should be taken to avoid exceeding one or more of the limit values, which may result in permanent irreversible damage to the product, ultimately affecting the quality and reliability of the system or equipment.

5.The design of the product is intended to meet civilian needs and is not guaranteed for use in harsh environments or precision equipment. It is not recommended for use in systems or equipment such as medical devices, aircraft, nuclear power, and similar systems, where failures in these systems or equipment could reasonably be expected to result in personal injury. WAYON shall assume no responsibility for any consequences resulting from such usage.

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