V P Electronics
Total Solution of Power Electronics

DPM-HB

Half Bridge Power Module

Features

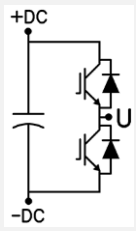
- IGBT and MOSFET Switches Option
- 350V DC Link, 1.2 kW Output Power
- Direct Interface with Gate Drive Modules
- Simple & Cost-Effective Solution
- DC Link Over Voltage Protection
- DC Link Safety Discharge & Indication
- TB & Banana Input, Output Connectors
- Test Points for Easy Testing

Description

The DPM-HB Series of Power Modules are simple and modular blocks that could be used for fastprototyping and validation of popular power converter circuits such as, Single & Multi-PhaseInverters, Buck/Boost Converters, Single & Multi-Phase Active Rectifiers and Modular Multi- Level Converters etc. It can cover wide range of applications such as Variable FrequencyDrives (VFDs), BLDC Motor Drives, PV inverters and converters in research and educationalenvironments.

User can connect Input and output terminals using pluggable terminal blocks or banana connectors, providing ease of use in labs. Test points are also available for pain free testing. DPM-HB Power Modules are fully compatible with gate drive modules made by Taraz Technologies. In addition, custom solutions could be provided upon request.

Basic Schematic



Applications

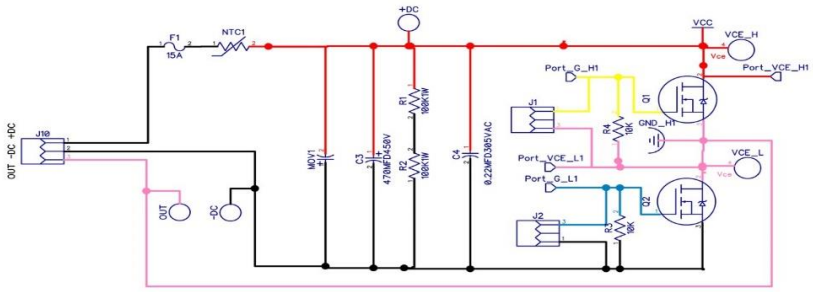
- Buck/Boost Converters
- PFC Active Rectifier
- Resonant Converters
- MPPT Converters

Ordering Information

DPM-HB-XXX

Options
MOS- *MOSFET Switch*
IGBT- *IGBT Switch*

Detailed Schematic



Specifications

Characteristics	Test Conditions/ Note	MOSFET	IGBT	Unit
DC Input Voltage	25C	350	350	V_{DC}
Over-Voltage Protection	Clamping Voltage	370	370	V_{DC}
Output Current	@ 2kHz, TA 25C	8.3	9.4	A_{RMS}
Output Power	@ 2kHz, 25C	0.9	1	kW
Overload Capacity	@ 2kHz, 25C, 10s	100	100	%
Gate Drive Voltage	Recommended	+15/0	+15/-8	V
Gate Drive Resistance	Minimum	4.7	10	Ω
Switching Frequency	Maximum	100	30	kHz
Dead-time	Minimum	1	3	µs
Short Circuit Withstand Time	Maximum	0	10	µs
Recommended Gate Driver		VP005837	VP005837	-
Weight			310	g

Performance Curves

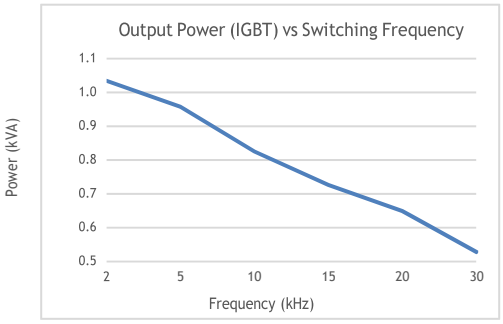


Fig 2: Output Power (IGBT) vs Switching Frequency

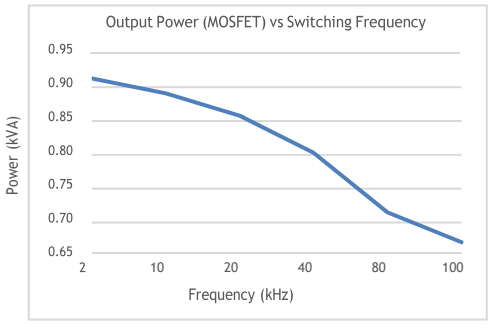


Fig 3: Output Power (MOSFET) vs Switching Frequency

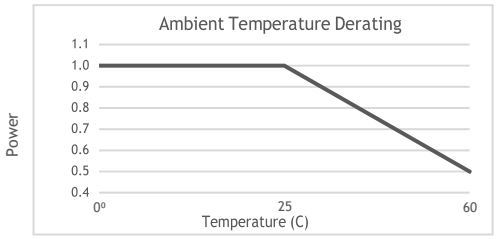
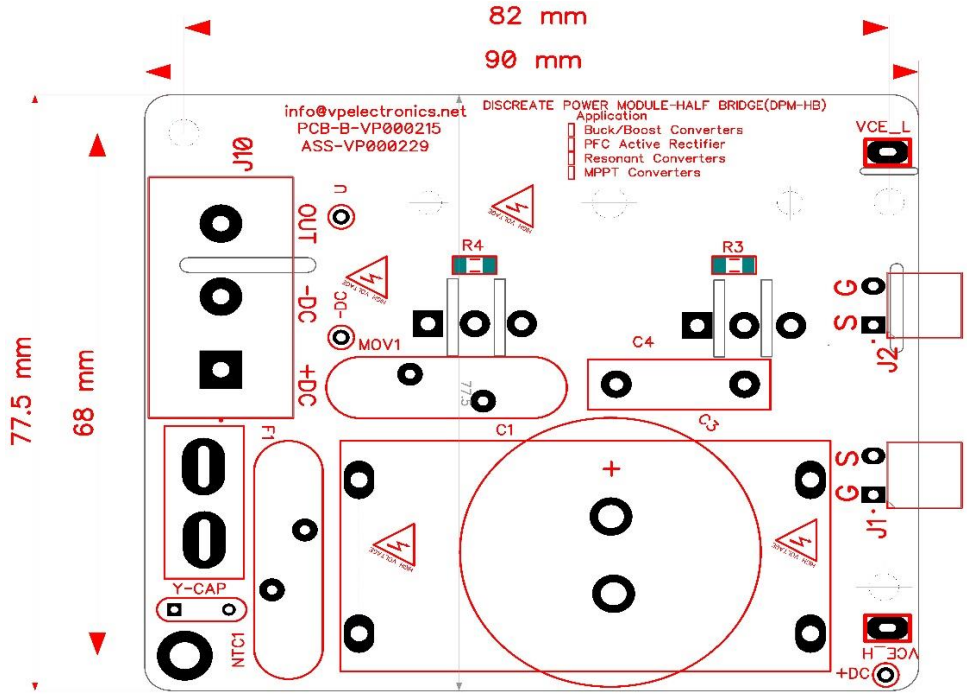


Fig 4: Output power derating factor with ambient temperature

Notes:

1) All output power curves are provided for 25ºC ambient and 100ºC heatsink temperatures.
2) Power ratings are for 350V DC-Link voltages, sinusoidal current output.
3) At 100 LFM forced cooling, output power is increased by 1.7x factor.
4) Temperature derating curve must be used if ambient temperature will go higher than 25ºC.



Pin Mapping & Mechanical Drawing

Name	Connector (Pin No.)	Description
Collector	VCE_H ,VCE_L	IGBT/MOSFTE collector/Drain terminals for connection of signals
Gate	J1(1) J2(2)	IGBT/MOSFTE gate terminals for connection of signals
Emitter	J1(2) J2(1)	IGBT/MOSFTE Emitter/Source terminals for connection of signals
DC Input	+DC,-DC	DC Input Terminal Block
Output	OUT	Output Terminal Block

SAFETY NOTICE!

ATTENTION PLEASE! THIS DEVICE IS ESD SENSITIVE AND NEEDS TO BE HANDLED WITH CARE. HIGH VOLTAGE CONDITION MAY OCCUR DURING OPERATION OF THE DEVICE, AND HENCE USER IS SOLELY RESPONSIBLE OF EQUIPMENT AND PERSONNEL SAFETY. VP ELECTRONICS SHALL NOT BE HOLD LIABLE FOR ANY DAMAGE TO PERSONNEL AND/OR PROPERTIES AS A RESULT OF USING THIS DEVICE. USER MUST TAKE ADEQUATE STEPS TO ENSURE ELECTRICAL AND MECHANICAL SAFETLY OF THE DEVICE IN USE.

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