

PXD Series (dual output) DC-DC Converters

The PXD is a DC-DC converter which provides a fully isolated and regulated output at power levels up to 20 watts. It accepts a wide range DC input. The converter may be operated with or without the input and output pins grounded.

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General Safety Instructions

These products are designed to be PCB mounted and for use within other equipment or enclosures. For safe installation and operation, carefully follow the instructions below:

1. Do not install, test, or operate the products near water or spill liquid on them.
2. Do not operate these products unless they are securely fastened.
3. These products must be installed in a restricted access location accessible to authorized personnel only.
4. These products must be professionally installed in accordance with the prevailing electrical wiring regulations and safety standards.
5. The output power taken from the unit must not exceed the ratings stated in the catalog datasheet.
6. Ensure adequate ventilation is provided to allow air to circulate.
7. This product has functional insulation between input and output and therefore the DC source to this product must be reinforced or double insulated to the AC input in accordance with IEC/EN 60950-1 to achieve SELV output.

Fusing

External ceramic sand-filled fuse, 250V, F5A, HBC.

Installation Method

The unit can be mounted in any direction. Position single or multiple units with proper spacing to allow for adequate air ventilation. The case temperature of each unit should not exceed the temperature range as noted in the data sheet.

Avoid placing PCB traces for the DC input and DC output directly under the unit to limit the possibility of unwanted conducted noise.

Soldering and Cleaning

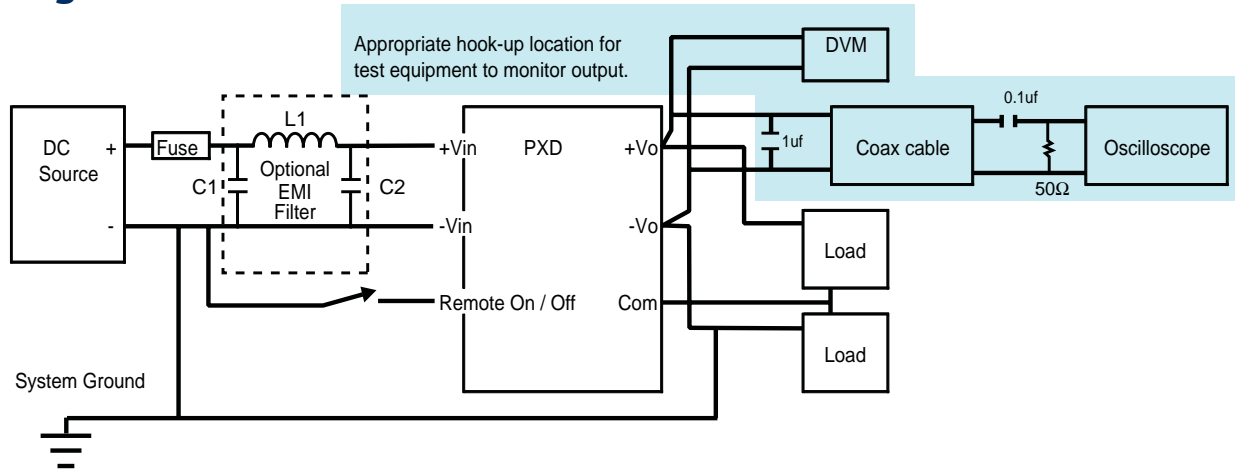
Flow soldering : $260 \pm 10^\circ\text{C}$ less than 15 seconds
Soldering iron : $370 \pm 10^\circ\text{C}$ less than 5 seconds

Note: The pins of this module are coated with Tin. To assure the solder-ability, modules should be kept in their original shipping containers to provide adequate protection. Also, the storage environment should be controlled to prevent oxidation of the pins.

Following wave solder, the converters should be given an opportunity to cool to within 10°C of the cleaning solution temperature. Cleaning while at a higher temperature may increase the risk of vacuum absorption of the solution into the converter between the pins and potting material during cooling.

It is recommended that during the wash process, the date code screening is protected to avoid erasure.

Block Diagram



EMI Filter (Optional)

Input filter components (C1, C2, L1) are used to help meet special conducted emissions requirements for the PXD product. These components should be mounted as close as possible to the DC-DC converter; and all leads should be minimized to decrease radiated noise.

	C1	L1	C2
PXD10	22 μ F 100v Electrolytic	3.3 μ H	22 μ F, 100V Electrolytic
PXD15, PXD20	1 μ F, MLC	5.5 μ H	39 μ F 100V Electrolytic

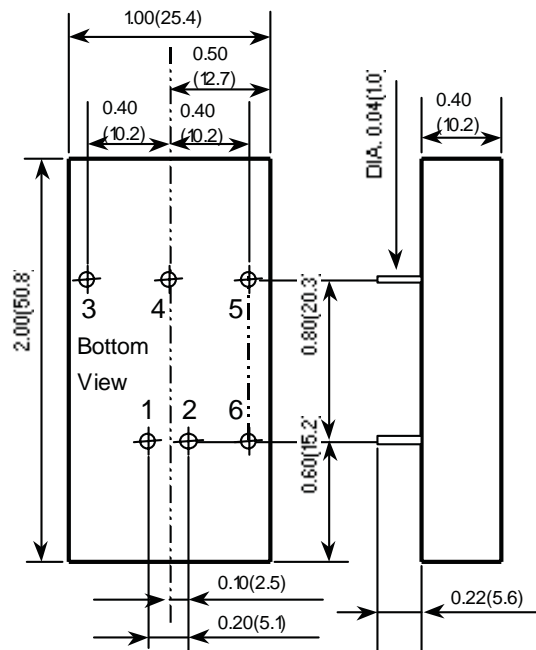
Minimum Load

A 10% (of full load) minimum load is required on output to meet the performance specifications. These models do not maintain regulation and operate properly under a no-load condition.

Pin Assignments

Pin	Connection
1	+ Input
2	- Input
3	+ Output
4	Common
5	- Output
6	Remote On / Off

Outline Drawing



1. All dimensions in Inches (mm)
2. Pin Pitch tolerance $\pm 0.014(0.35)$

Pin Diameter: 1mm (0.04")

Remote On-Off Control

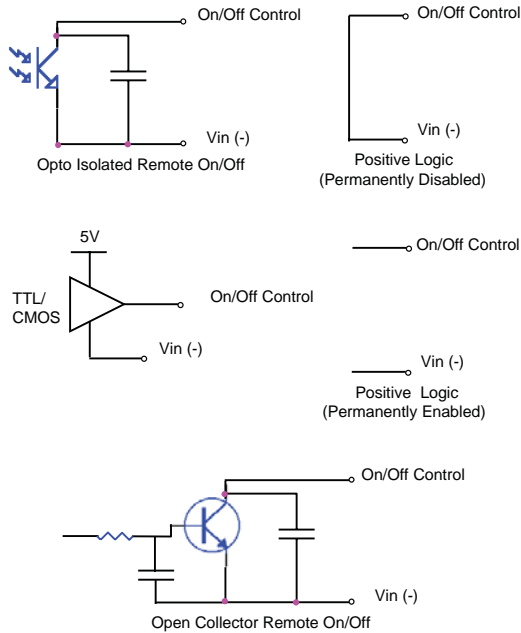
Negative Logic

To turn the module on and off, the user must supply a switch (or equivalent circuit below) to control the voltage between the on/off terminal $V_{on/off}$ and the $V_i(-)$ input terminal. With an open circuit, the module is normally off. To turn the module on, the voltage on the $V_{on/off}$ pin needs to be 0V-1.2V. The maximum current $I_{on/off}$ should be limited to less than 200 μ A.

Positive Logic

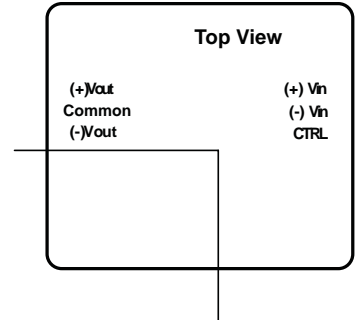
To turn the module on and off, the user must supply a switch (or equivalent circuit below) to control the voltage between the on/off terminal $V_{on/off}$ and the $V_i(-)$ input terminal. With an open circuit the module is normally on. To turn the module off, the voltage on the $V_{on/off}$ pin needs to be 0V-1.2V. The maximum current $I_{on/off}$ should be limited to less than 100 μ A.

Below are five possible circuits for driving the ON/OFF Pin:



Thermal Consideration

The power module operates in a variety of thermal environments; however, sufficient cooling should be provided to help ensure reliable operation of the unit. Heat is removed by conduction, convection, and radiation to the surrounding environment. Proper cooling can be verified by measuring the case temperature. The case temperature (T_c) should be measured at the position indicated in figure to the right.



When operating the module, adequate cooling must be provided to maintain the case temperature at or below 100°C. Maintaining a lower temperature will yield higher reliability of the device. Optimum cooling is obtained with forced convection.

Flow Rate	Θ
Convection*	16.20°C/W
100LFM	12.98
200LFM	10.47
300LFM	8.47
400LFM	6.61
500LFM	6.12
Heatsink**	10.00

* Mounted vertically
 ** Optional heatsink 7G0020A (includes adhesive pad)