

Section 15

## DC TO DC LOW VOLTAGE 2V TO 9V HIGH POWER SERIES

Pioneer Magnetics introduces a new breed of High Efficiency, Low Voltage and High Power DC to DC Series that provide full output power with DC Input ranging from 90VDC to 750VDC. Designed to support both standalone and parallel configurations, these models are configured in standard Non-Plug and Hot Plug I/O interfaces. The Premium Quality front ends are rugged, reliable, designed for high performance and come in the traditional 5" x 5" package. With power density up to 25.8watts/in<sup>3</sup>, these units are featured with internal forced air-cooling and built-in protection from electrical over-loads.

A single module provides continuous full power over operating temperatures of 0°C to +50°C.

### Product Matrix

| MODEL              | PM3336 | PM3337 | PM3338 | PM3339           | PM33310          | PM33311       |
|--------------------|--------|--------|--------|------------------|------------------|---------------|
| <b>MAX POWER</b>   | 1000W  | 1200W  | 1500W  | 2000W            | 2500             | 3000          |
| <b>OUTPUT Vout</b> | lout   | lout   | lout   | lout             | lout             | lout          |
| <b>2V</b>          | 200A   | 240A   | 300A   | 400A             | 500A             | 600A          |
| <b>3.3V</b>        | 200A   | 240A   | 300A   | 400A             | 500A             | 600A          |
| <b>5V</b>          | 200A   | 240A   | 300A   | 400A             | 500A             | 600A          |
| <b>6V</b>          | 167A   | 200A   | 250A   | 333A             | 416A             | 500A          |
| <b>9V</b>          | 111A   | 133A   | 167A   | 222A             | 277A             | 333A          |
| <b>Non-Plug</b>    | 5"     | 5"     | 11.25" | 5" x 6.25" x 13" | 5" x 6.25" x 13" | 5" x 8" x 13" |
| <b>Hot Plug</b>    | 5"     | 5"     | 14"    | 5" x 6.25" x 15" | 5" x 6.25" x 15" | 5" x 8" x 15" |
| <b>DC Input</b>    | 90V    | to     | 350V   | 180V             | to               | 350V          |

Notes: All Models are available with wide DC input range 90 to 350V or high input 180 to 350VDC

### Features:

- ◆ Power Factor Correction
- ◆ 0°C to +50°C at Full Load
- ◆ De-rated @ 70°C
- ◆ Standard 5" x 5" Case
- ◆ Outputs Fully Floating
- ◆ Over Current Protection
- ◆ Over Voltage Protection
- ◆ Remote Sense
- ◆ Over Temperature Protection
- ◆ Internal Forced Air Cooling

### Options:

- ◆ (-128L) DC OK with LED indicator
- ◆ (-1UL) DC Input Monitor with LED indicator
- ◆ (-2T) Unit enable/disable
- ◆ (-5LO) ±10% Output voltage adjust
- ◆ (-6B) Single wire current sharing
- ◆ (-6D) Slope/Droop current sharing
- ◆ (-20C) Isolation diodes
- ◆ (-25) Constant current limit
- ◆ (-33) Current monitor

Note: Refer to Section 26 for list of all standard options



5" x 5" x 11.25"  
Up to 2000W  
DC Terminal Block  
AC Terminal Block  
Option Connector DB25



5" x 5" x 11.5"  
Up to 3000W  
Elcon lower Drawer  
Hot Plug Connector

## SPECIFICATION

### Inputs

**RANGE:**

Up to 1500W - 90 To 350VDC

> 1500W - 180 to 350VDC

**INRUSH CURRENT:** <25A/40A averaged over 10msec

**REVERSE POLARITY PROTECTION:** Reverse voltage within rating will not damage power supply.

**INPUT FUSING:** External Fuse Required

**HOLD UP TIME:** At least 20msec from loss of input to loss of regulation.

### Environmental

**AUDIBLE NOISE:** 63dBA/70dbA max at 1 meter

**TEMPERATURE:** Operating: 0°C to +50°C at full load.

Storage: -55°C to +85°C.

**HUMIDITY:** 20% to 95% non-condensing.

**ALTITUDE:** Operating: 5,000 feet. De-rates to 70% at 15,000 feet. Non-Operating: To 30,000 feet.

**VIBRATION:** Operating: From 5 to 27 Hz, 0.02 in double amplitude; from 27 Hz to 500 Hz, 0.75G, 3 Axes, 3 min per octave sweep, dwell 15 min at resonance. Non-operating: From 5 to 17 Hz, 0.10 in double amplitude, from 17 to 500Hz, 1.5G peak; 3 axes, 5 min per octave sweep; dwell 15 min at resonance.

**SHOCK:** Operating: 5G, half sine, 11msec, 3 axes. Non-Operating: 15G, half sine, 11msec, 3 axes.

**COOLING:** Forced air, internal fan. Airflow exits at connector end.

### Safety

**SAFETY:** UL1950, CSA22.2 No 950 and TUV to EN60950. CE Mark (LVD)

**EMI:** Conducted & Radiated: EN55022 Level A  
CE Certification is Optional

### Output

**ADJUSTMENT RANGE:** ±10% of nominal output voltage.

**POLARITY:** Output is isolated. It may be referenced plus/minus as required.

**REMOTE SENSE:** Compensates for up to 0.5V total loop drop, in the output line.

**STATIC REGULATION:**

Line: ±0.25% over full line range.

Load: ±0.25% zero load to full load.

**VOLTAGE STABILITY:** ±0.1% for 24 hour period after 30 minute warm up.

**TEMP COEFFICIENT:** ±0.02%/°C from 0°C to +50°C.

**P-P RIPPLE AND NOISE:**

1% (20Hz to 50MHz Bandwidth).

**MINIMUM LOAD:** Not Required.

**TURN ON DELAY:** 1sec max from application of DC line.

### Internal Protection

**OVER VOLTAGE PROTECTION:** 125% ±5% of nominal. OVP shutdown is latched until the input line is removed for 30 seconds and then reapplied. OVP sensing is done at the output terminals.

**OVER CURRENT PROTECTION:** Current Limit Point: 110% to 120% of full load.

**SHORT CIRCUIT CURRENT:** Fold back type to 40%-80% of full rated current. Unit will recover when overload is removed.

**REVERSE VOLTAGE PROTECTION:** Protected to rated load with the fan running.

**OVER TEMPERATURE PROTECTION:** The unit automatically shuts down in the event of an over temperature condition. After cool down, power must be recycled to restart unit. Optionally, non-latchable protection is also available.