

# product mini-catalog

High Voltage Modules

Precision HV Power Supplies

High Voltage Amplifiers

Test Fixtures

High Voltage Systems

Microsize/Micropower HV

Accessories



**1-800-9HV-POWER**

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 **ULTRAVOLT**  
*Making High Voltage Easier!®*

### Do you have a high-voltage power supply that meets all of your needs?

UltraVolt offers a cost-effective solution to most high-voltage needs, while maintaining a level of flexibility rivaling custom designs. Our product line includes over 600 models with output voltage from **0 to 62V to 0 to 40kV** at output power from **100mW to 250W**. Modified standards are available and may include features such as an optional voltage monitor, enhanced current monitor, reduced ripple and re-ranged power levels. There are no NRE costs, no minimum order quantities, and lead times are as low as 10 business days.

### Do you have the highly reliable, high performance power supply you need?

UltraVolt has the only high-voltage power supplies available with precision long-term stability. In addition, UltraVolt power supplies are rated at up to 2 million hours mean time before failure (MTBF) - that's over 228 years between failures!

### Do you have the best partner working with you on your high-voltage needs?

Our expert applications engineers are ready to assist with any of your specific high-voltage application requirements. UltraVolt is committed to providing quality product that meets industry safety standards. Most UltraVolt HV power supplies are safety agency approved through component listing programs UL/CUL, with CB test certifications supporting the UL/CUL, CE, and DEMKO marks. UltraVolt's high voltage modules are also fully RoHS compliant.

**UltraVolt is Making High Voltage Easier!® with  
Higher Service, Higher Performance, Higher Reliability**

## SINGLE OUTPUT HIGH VOLTAGE MODULES

### A SERIES and AA SERIES

Our A Series and AA Series provide 0 to 62V through 0 to 6kV at 4W, 20W, or 30W in only 4.30in<sup>3</sup> (A Series) and 3.34in<sup>3</sup> (AA Series).



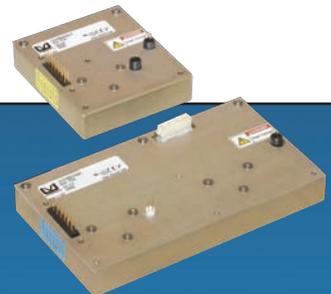
### C SERIES

Our C Series models are designed for fast rise time capacitor charging applications from 0 to 62V through 0 to 6kV at 20W or 30W.



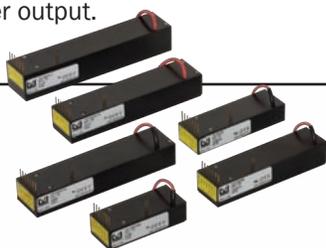
### HIGH POWER C SERIES

Our High Power C Series units extend the 0 to 125V through 0 to 6kV C Series to 60W, 125W, or 250W.



### 10A-25A SERIES and 30A-40A SERIES

Our 10A-40A Series extends the A Series to 0 to 10kV through 0 to 40kV with the same 4W to 30W power output.



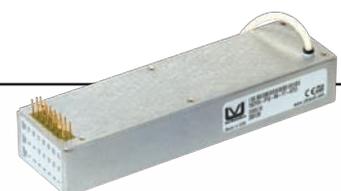
### HIGH POWER 8C-30C SERIES

Our High Power 8C-30C Series of high power density high voltage power supplies provide 0 to 8kV through 0 to 30kV at 60W & 125W.



### CP SERIES

Our CP Series has the unique capability of operating in constant-voltage, constant-current, or constant-power modes. Outputs range from 0 to 15kV at 10W of output power.



## PRECISION HVPS

### E SERIES

Our E Series operates from 0 to 1kV through 0 to 15kV at 4W, 15/20W or 30W. This series offers PPM level temperature coefficients, line and load regulation, and ripple.



## HV AMPLIFIERS

### HVA SERIES

Our HVA Series high voltage amplifier line can both source and sink current. Bipolar models available at 0 to  $\pm 5$ kV at 1W; unipolar modules available at 0 to 10kV at 1W.



## MULTI-OUTPUT HVPS

### BIPOLAR HIGH POWER C SERIES

Our Bipolar High Power C Series units feature dual independent HV outputs from 0 to  $\pm 125$ Vdc through 0 to  $\pm 6$ kV at 0 to 125W (62W x 2) and 250W (125W x 2).



## MICROSIZE SINGLE OUTPUT HIGH VOLTAGE MODULES

### XS SERIES and US SERIES

Our XS Series and US Series lines provide 0 to 100V (XS Series) or 0 to 500V (US Series) at 100mW of power in only 0.08in<sup>3</sup> (XS Series) or 0.35in<sup>3</sup> (US Series).



### D SERIES

Our D Series models offer a light weight design with excellent voltage regulation. Output voltages range from 0 to 6kV at 0 to 6W of power and a volume starting at 2.22in<sup>3</sup>.



### V SERIES and M SERIES

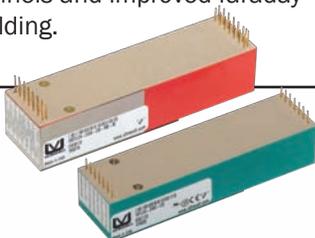
Our V Series and M Series offer 0 to 1.5kV at 0 to 1W of power in a volume of only 0.84in<sup>3</sup> (V Series) or 1.28in<sup>3</sup> (M Series).



## ISOLATED LVPS

### FL SERIES and EFL SERIES

Our FL and EFL Series provide floating LV power supplies with isolated controls, allowing HV power supplies, filaments, and electronics to operate while floating on up to 15kV. The EFL Series provides two precision analog channels and improved faraday shielding.



## FILAMENT SUPPLIES

### FIL SERIES

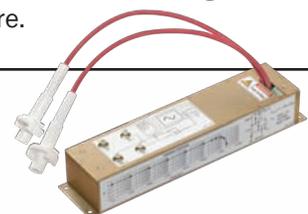
Our FIL Series is a precision, center-tapped, non-isolated low-voltage filament supply rated for 0 to 5VDC at 0 to 3 Amps. It offers excellent linearity and accuracy of control, allowing users to properly operate the filament to maximize performance and life.



## TEST FIXTURES

### TF SERIES

Our TF Series of test fixtures provides convenient inline measurement of HV power supplies and HV system performance in only 27.75in<sup>3</sup>. When coupled with an oscilloscope or conventional meter it becomes a stand alone test fixture, which can measure ripple, noise, pulses, absolute DC, DC stability, DC line regulation, DC load regulation, and more.



## HIGH VOLTAGE POWER SYSTEMS

### HV RACK® SERIES RACK MOUNT POWER SYSTEM

Our HV Rack® Series is configurable with up to 4 independent channels, selected from among our over 600 standard HVPS, for a 4W to 1kW total HV output capability. Features include local and remote controls, preset before and during bias, CV/CC regulation auto-cross over, and simultaneous voltage and current monitoring of all channels. Configuration options include floating channels, green meters, and the USB Interface.



### BT SERIES SINGLE CHANNEL POWER SYSTEM

Our BT Series is a 7.83" benchtop system with a single positive or negative output. BT Series modules are configurable from 62V to 15kV of output voltage at 100mW to 20W of output power, and have a universal 85-264VAC input. This compact power system offers stand-alone and remote operation modes. USB control and monitoring is also available. Features include current and voltage monitoring and protection against overloading, short circuiting, and arcing.



### MMS-eB SERIES MULTI-MODULE E-BEAM SYSTEM

Our MMS-eB Series provides all the power sources needed to operate a variety of industry-standard precision electron guns and is available with PPM level temperature coefficient, ripple, regulation, and stability. Systems are configurable as 3-, 4-, or 5-bias electron gun HVPS for beam, filament, extractor, suppressor, and lens voltages. MMS-eB systems utilize UltraVolt's off-the-shelf high voltage power supplies and accessories ranging from 0 to 15kV at 4W to 30W.



Contact the factory to learn more about our systems integration capabilities at [csd@ultravolt.com](mailto:csd@ultravolt.com) or +1 (631) 471-4444.

## ACCESSORIES AND OPTIONS

#### -H OPTION

Heat Sink for PCB mounted >4W AA, A, 10A-40A, FIL, C, High Power C, High Power 8C-30C, and Bipolar C Series units.



#### -E OPTION

Eared Mounting Plate for chassis mounting AA, A, 10A-40A, FL, EFL, FIL, and C Series plastic package units.



#### -M OPTION

Mu-Metal Shield attenuates EMI, RFL, and HV electrostatic fields. Available on the AA, A, 10A-40A, FIL, FL, EFL, and C Series.



#### -C OPTION

RF-Tight aluminum enclosure for ruggedized chassis mounting of any 4W to 30W A & C Series units.



#### -F OPTION

Ripple Stripper Output Filter® reduces ripple 10 to 100 times on the A Series and 10A-40A Series units.



#### BR- ACCESSORY

Case mounting bracket kits for chassis mounting A & C Series plastic package units.



#### -25PPM OPTION

25PPM temperature coefficient on both the output voltage and output voltage monitor for the A, AA, & 10A-40A Series.



#### -I5 / -I10 OPTION

Enhanced interface options for the AA and High Power C Series (60W/125W only).



# QUICK SELECT CHART - HVPS MODULES

## MICROSIZE SINGLE OUTPUT MODULES

| Model Number | Output Voltage (kV) | 100 mW (mA) | Model Number | Model Number | Output Voltage (kV) | 500 mW (mA) | 800 mW (mA) | 1 Watt (mA) | Model Number | Output Voltage (kV) | 1 Watt (mA) | 2 Watt (mA) | 4 Watt (mA) | 6 Watt (mA) |
|--------------|---------------------|-------------|--------------|--------------|---------------------|-------------|-------------|-------------|--------------|---------------------|-------------|-------------|-------------|-------------|
| 0.1XS5       | 0 to 0.1            | 1           | 0.6V12       | 0.6M12       | 0 to 0.6            | .830        |             |             | 1D15         | 0 to 1              | 1           | 2           | 4           | 6           |
| 0.2US5       | 0 to 0.2            | .500        | 0.6V15       | 0.6M15       |                     |             | 1.33        |             | 1D24         |                     | 1           | 2           | 4           | 6           |
| 0.2US12      |                     | .500        | 0.6V24       | 0.6M24       |                     |             |             | 1.66        | 2D15         | 0 to 2              | .500        | 1           | 2           | 3           |
| 0.3US5       | 0 to 0.3            | .330        | 1V12         | 1M12         | 0 to 1.0            | .500        |             |             | 2D24         |                     | .500        | 1           | 2           | 3           |
| 0.3US12      |                     | .330        | 1V15         | 1M15         |                     |             | .800        |             | 4D15         | 0 to 4              | .250        | .500        | 1           | 1.5         |
| 0.4US5       | 0 to 0.4            | .250        | 1V24         | 1M24         |                     |             |             | 1.00        | 4D24         |                     | .250        | .500        | 1           | 1.5         |
| 0.4US12      |                     | .250        | 1.25V12      | 1.25M12      | 0 to 1.25           | .400        |             |             | 6D15         | 0 to 6              | .166        | .333        | .666        | 1           |
| 0.5US5       | 0 to 0.5            | .200        | 1.25V15      | 1.25M15      |                     |             | .640        |             | 6D24         |                     | .166        | .333        | .666        | 1           |
| 0.5US12      |                     | .200        | 1.25V24      | 1.25M24      |                     |             |             | .800        |              |                     |             |             |             |             |
|              |                     |             | 1.5V12       | 1.5M12       | 0 to 1.5            | .330        |             |             |              |                     |             |             |             |             |
|              |                     |             | 1.5V15       | 1.5M15       |                     |             | .530        |             |              |                     |             |             |             |             |
|              |                     |             | 1.5V24       | 1.5M24       |                     |             |             | .660        |              |                     |             |             |             |             |

## STANDARD SINGLE OUTPUT MODULES

| Model Number | Output Voltage (kV) | 4 Watt (mA) | 20 Watt (mA) | 30 Watt (mA) | 60 Watt (mA) | 125 Watt (mA) | 250 Watt (mA) | PCB Mount Plastic Case | Chassis Mount Metal Case | Model Number | Output Voltage (kV) | 4 Watt (mA) | 15 Watt (mA) | 30 Watt (mA) | 60 Watt (mA) | 125 Watt (mA) | PCB Mount Plastic Case | Chassis Mount Metal Case |
|--------------|---------------------|-------------|--------------|--------------|--------------|---------------|---------------|------------------------|--------------------------|--------------|---------------------|-------------|--------------|--------------|--------------|---------------|------------------------|--------------------------|
| 1/16A12      | 1/16AA12            | 0 to .062   | 64           |              |              |               |               | STD                    |                          | 8C24         | 0 to 8              |             |              | 7.5          | 15.5         |               | STD                    |                          |
| 1/16A24      | 1/16AA24            |             |              | 320          | 480          |               |               | STD                    |                          | 10A24        |                     |             | 5            | 3            |              |               | STD                    |                          |
|              | 1/16C24             |             |              | 320          | 480          |               |               | STD                    |                          | 10C24        |                     |             |              |              | 6            | 12.5          |                        | STD                      |
| 1/8A12       | 1/8AA12             | 0 to .125   | 32           |              |              |               |               | STD                    |                          | 10E24        | 0 to 10             | .400        | 1.5          | 3            |              |               |                        | STD                      |
| 1/8A24       | 1/8AA24             |             |              | 160          | 240          |               |               | STD                    |                          | 12C24        | 0 to 12             |             |              |              | 5            | 10            |                        | STD                      |
|              | 1/8C24              |             |              | 160          | 240          |               |               | STD                    |                          | 15A12        | 0 to 15             | .260        |              |              |              |               |                        | STD                      |
|              | 1/8C24              |             |              |              |              | 480           | 1000          | 2000                   | STD                      | 15A24        |                     |             | 1            | 2            |              |               |                        | STD                      |
| 1/4A12       | 1/4AA12             | 0 to .250   | 16           |              |              |               |               | STD                    |                          | 15C24        |                     |             |              | 4            | 8.3          |               |                        | STD                      |
| 1/4A24       | 1/4AA24             |             |              | 80           | 120          |               |               | STD                    |                          | 15E24        | 0 to 15             | .267        | 1            | 2            |              |               |                        | STD                      |
|              | 1/4C24              |             |              | 80           | 120          |               |               | STD                    |                          | 20A12        | 0 to 20             | .200        |              |              |              |               |                        | STD                      |
|              | 1/4C24              |             |              |              |              | 240           | 500           | 1000                   | STD                      | 20A24        |                     |             | .750         | 1.5          |              |               |                        | STD                      |
| 1/2A12       | 1/2AA12             | 0 to .500   | 8            |              |              |               |               | STD                    |                          | 20C24        |                     |             |              | 3            | 6.25         |               |                        | STD                      |
| 1/2A24       | 1/2AA24             |             |              | 40           | 60           |               |               | STD                    |                          | 25A12        | 0 to 25             | .160        |              |              |              |               |                        | STD                      |
|              | 1/2C24              |             |              | 40           | 60           |               |               | STD                    |                          | 25A24        |                     |             | .600         | 1.2          |              |               |                        | STD                      |
|              | 1/2C24              |             |              |              |              | 120           | 250           | 500                    | STD                      | 25C24        |                     |             |              |              | 2.4          | 5             |                        | STD                      |
| 1A12         | 1AA12               | 0 to 1      | 4            |              |              |               |               | STD                    |                          | 30A12        | 0 to 30             | .133        |              |              |              |               |                        | STD                      |
| 1A24         | 1AA24               |             |              | 20           | 30           |               |               | STD                    |                          | 30A24        |                     |             | .500         | 1            |              |               |                        | STD                      |
|              | 1C24                |             |              | 20           | 30           |               |               | STD                    |                          | 30C24        |                     |             |              |              | 2            | 4.17          |                        | STD                      |
|              | 1C24                |             |              |              |              | 60            | 125           | 250                    | STD                      | 35A12        | 0 to 35             | .110        |              |              |              |               |                        | STD                      |
|              | 1E24                |             | 4            | 20           | 30           |               |               |                        | STD                      | 35A24        |                     |             | .420         | .840         |              |               |                        | STD                      |
| 2A12         | 2AA12               | 0 to 2      | 2            |              |              |               |               | STD                    |                          | 40A12        | 0 to 40             | .100        |              |              |              |               |                        | STD                      |
| 2A24         | 2AA24               |             |              | 10           | 15           |               |               | STD                    |                          | 40A24        |                     |             | .375         | .750         |              |               |                        | STD                      |
|              | 2C24                |             |              | 10           | 15           |               |               | STD                    |                          |              |                     |             |              |              |              |               |                        |                          |
|              | 2C24                |             |              |              |              | 30            | 62            | 125                    | STD                      |              |                     |             |              |              |              |               |                        |                          |
|              | 2E24                |             | 2            | 10           | 15           |               |               |                        | STD                      |              |                     |             |              |              |              |               |                        |                          |
| 4A12         | 4AA12               | 0 to 4      | 1            |              |              |               |               | STD                    |                          |              |                     |             |              |              |              |               |                        |                          |
| 4A24         | 4AA24               |             |              | 5            | 7.5          |               |               | STD                    |                          |              |                     |             |              |              |              |               |                        |                          |
|              | 4C24                |             |              | 5            | 7.5          |               |               | STD                    |                          |              |                     |             |              |              |              |               |                        |                          |
|              | 4C24                |             |              |              |              | 15            | 31            | 62                     | STD                      |              |                     |             |              |              |              |               |                        |                          |
|              | 4E24                |             | 1            | 5            | 7.5          |               |               |                        | STD                      |              |                     |             |              |              |              |               |                        |                          |
| 6A12         | 6AA12               | 0 to 6      | .660         |              |              |               |               | STD                    |                          |              |                     |             |              |              |              |               |                        |                          |
| 6A24         | 6AA24               |             |              | 3.3          | 5            |               |               | STD                    |                          |              |                     |             |              |              |              |               |                        |                          |
|              | 6C24                |             |              | 3.3          | 5            |               |               | STD                    |                          |              |                     |             |              |              |              |               |                        |                          |
|              | 6C24                |             |              |              |              | 10            | 21            | 41                     | STD                      |              |                     |             |              |              |              |               |                        |                          |
|              | 6E24                |             | .667         | 3.3          | 5            |               |               |                        | STD                      |              |                     |             |              |              |              |               |                        |                          |

Specifications are subject to change without notice.

# QUICK SELECT CHART - SPECIALTY PRODUCTS

## HIGH VOLTAGE AMPLIFIERS

| Model | Output Voltage      | Features                                   |
|-------|---------------------|--|
| 1HVA  | 0 to 1kV, 0 to ±1kV | Unipolar or Bipolar Precision HV Amplifier |
| 2HVA  | 0 to 2kV, 0 to ±2kV | Unipolar or Bipolar Precision HV Amplifier |
| 4HVA  | 0 to 4kV, 0 to ±4kV | Unipolar or Bipolar Precision HV Amplifier |
| 5HVA  | 0 to ±5kV           | Bipolar Precision HV Amplifier             |
| 6HVA  | 0 to 6kV            | Unipolar Precision HV Amplifier            |
| 10HVA | 0 to 10kV           | Unipolar Precision HV Amplifier            |

## CONSTANT POWER HIGH VOLTAGE

| Model | Output Voltage | Features                        |
|-------|----------------|---------------------------------|
| 1CP   | 0 to 1kV       | Constant 10W from 0.1kV to 1kV  |
| 2CP   | 0 to 2kV       | Constant 10W from 0.2kV to 2kV  |
| 4CP   | 0 to 4kV       | Constant 10W from 0.4kV to 4kV  |
| 6CP   | 0 to 6kV       | Constant 10W from 0.6kV to 6kV  |
| 10CP  | 0 to 10kV      | Constant 10W from 1kV to 10kV   |
| 15CP  | 0 to 15kV      | Constant 10W from 1.5kV to 15kV |

## BIPOLAR HIGH VOLTAGE POWER SUPPLIES

| Model      | Output Voltage          | Output Power    | Features                                |
|------------|-------------------------|-----------------|---|
| 1/8C to 6C | 0 to ±125V to 0 to ±6kV | NP-125 & NP-250 | Independently controllable dual outputs |

## FILAMENT SUPPLIES

| Model     | Features   |
|-----------|--|
| FIL-5V-3A | Output load regulation is <0.5% in constant voltage mode, no load to full load; <0.05% in constant current mode, short circuit to full load. Output line regulation is <0.01% in CV or CC mode (+21.6VDC to +26.4VDC). Accuracy ±0.1% & linearity error of <0.01%. |

## ISOLATED LOW VOLTAGE POWER SUPPLIES

| Model   | Floating Output Voltage         | Features   |
|---------|---------------------------------|--|
| 15FL12  | +12VDC, -12VDC, +5VDC           | Floating Low Voltage Power Supply & Analog/Digital Controls          |
| 15FL24  | +24VDC, -12VDC, +5VDC           | Floating Low Voltage Power Supply & Analog/Digital Controls          |
| 15EFL12 | +12VDC, +15VDC, -15VDC, +5.1VDC | Enhanced Floating Low Voltage Power Supply & Analog/Digital Controls |
| 15EFL24 | +24VDC, +15VDC, -15VDC, +5.1VDC | Enhanced Floating Low Voltage Power Supply & Analog/Digital Controls |

## TEST FIXTURES

| Model          | Features   |
|----------------|--|
| 40TF-DCD       | Precision 10,000:1 divider, ±1%, ±25PPM per °C, voltage coefficient is <1% per 40kV. DC Loading is 1 GigΩ.   |
| 40TF-ACV&DCD   | 1:1 AC viewing capacitor, 35Hz to 10MHz (Monitor 10Hz to 20MHz), 1mV to 75V Pk, 1000:1 DC divider, ±2%, ±100 PPM per °C. DC Loading is 2 GigΩ. Capacitive loading is < 50pF                              |
| 40TF-DCD&CLOAD | Compensated 1,000:1 DC Divider, ±2%, ±100 PPM per °C, showing Trise, Tfall, overshoot & settling over a bandwidth of 35Hz to 10MHz (Monitor 10Hz to 20MHz), 300pF capacitive load, DC Loading is 1 GigΩ. |

## HIGH VOLTAGE SYSTEMS

| Model         | Model          | Features  |
|---------------|----------------|---|
| HV-RACK-1-250 | HV-RACK-3-750  | 19" Rack with 1 to 4 channels of meters & controls.<br>Individual CV/CC controls & limits. Floating channel configuration available.<br>Wide selection of HV output connectors.<br>Available with USB Interface and Labview drivers.<br>Configurable product to meet project-specific needs.  |
| HV-RACK-2-250 | HV-RACK-4-250  |   |
| HV-RACK-2-500 | HV-RACK-4-500  |   |
| HV-RACK-3-250 | HV-RACK-4-750  |   |
| HV-RACK-3-500 | HV-RACK-4-1000 |   |
| Model         | Model          | Features  |
| MMS-EB        |                | Provides Beam, Filament, Suppressor, Extractor, and Lens bias supplies. Precision control & monitoring, Low ripple & noise, tight stability. Convection cooled design for mounting near the source. Integral HV cables to reduce cost and increase reliability. Configurable product to meet product-specific needs.  |
| Model         | Model          | Features  |
| BT-2-XXXX     | BT-10-XXXX     | Compact high voltage AC-DC bench-top power supply with adjustable output voltage.<br>Single positive or negative output. Available in either analog or digital. Universal input 85-264VAC.<br>Configurable with microsize/micropower product line (XS, US, V, M, or D Series).<br>* When ordering, XXXX in the model number should be replaced by the selected UltraVolt HV power supply part number. |
| BT-4-XXXX     | BT-RS-XXXX     |   |
| BT-5-XXXX     | BT-USB-XXXX    |   |