

HIGH POWER 8C-30C SERIES

8kV to 30kV High Voltage Cap-Charging Supplies

This High Power line of high-voltage regulated DC to DC converters is an extension of the C Series, directly addressing the high power density needs of >30 watt applications. High Power 8C - 30C units provide up to 60/125/250 watts. This high power density is especially suited to high-energy systems with large capacitances, fast repetition rates, or high continuous-DC-power requirements. See Application Note 10 for more changing information. Typical applications for the High Power 8C-30C Series include the following: laser, cap-charger, pulse generators, Q-switch, and TDR test equipment.

- 7 models from 0 to 8kV through 0 to 30kV
- 60, 125, or 250 watts of output power
- Maximum Iout capability down to 0 Volts
- Maximum Iout during charge/rise time
- Output short-circuit protection
- Very fast rise with very low overshoot



- High efficiency
- High power to voltage density
- Very low profile
- Output current & voltage monitors
- >200,000 hour MTBF @65°C
- Fixed-frequency, low-stored-energy design
- UL/cUL Recognized Component; CE Mark (LVD & RoHS)

| PARAMETER | CONDITIONS | ALL TYPES | | | | | | | | | | | | | | | | | | | | UNITS | | | | | | | | | | | | | | | | |
|-----------------------------------|---|--|----------|----------|----------|----------|-------------|----------|----------|---------|----------|-------------|---------|----------|---------|---------|-------------|---------|--------|---------|--------|-------------|----|-----|-----|----|-------------|-----|----|-----|-----|-------------|-----|-----|----|-----|-------|-------|
| INPUT | | ALL TYPES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Voltage Range | Full Power | + 23 to 30 | | | | | | | | | | | | | | | | | | | | VDC | | | | | | | | | | | | | | | | |
| Voltage Range | Derated Power Range | 60W, 125W: + 11 to 30, 250W: 15-30 | | | | | | | | | | | | | | | | | | | | VDC | | | | | | | | | | | | | | | | |
| Current | Standby / Disable | < 40 | | | | | | | | | | | | | | | | | | | | mA | | | | | | | | | | | | | | | | |
| Current | No Load, Max Eout | 8C to 15C < 500, 20C to 25C < 600 | | | | | | | | | | | | | | | | | | | | mA | | | | | | | | | | | | | | | | |
| Current | Max Load, Max Eout | 60W: 3.25, 125W: 6.5, 250W: 13 | | | | | | | | | | | | | | | | | | | | A | | | | | | | | | | | | | | | | |
| AC Ripple Current | Nominal Input, Full Load | < 50 | | | | | | | | | | | | | | | | | | | | mA p-p | | | | | | | | | | | | | | | | |
| OUTPUT | | 8C | | | | | 10C | | | | | 12C | | | | | 15C | | | | | 20C | | | | | 25C | | | | | 30C | | | | | | |
| Voltage Range | Nominal Input | 0 to 8,000 | | | | | 0 to 10,000 | | | | | 0 to 12,000 | | | | | 0 to 15,000 | | | | | 0 to 20,000 | | | | | 0 to 25,000 | | | | | 0 to 30,000 | | | | | VDC | |
| Power | Nominal Input, Max Eout | 60 | 125 | 250 | 60 | 125 | 250 | 60 | 125 | 250 | 60 | 125 | 250 | 60 | 125 | 250 | 60 | 125 | 250 | 60 | 125 | 250 | 60 | 125 | 250 | 60 | 125 | 250 | 60 | 125 | 250 | 60 | 125 | 250 | 60 | 125 | 250 | Watts |
| Current | Iout, Entire Output Voltage Range | 7.5 | 15.5 | 31.2 | 6 | 12.5 | 25 | 5 | 10.5 | 20.8 | 4 | 8.3 | 16.7 | 3 | 6.25 | 12.5 | 2.4 | 5 | 10 | 2 | 4.17 | 8.33 | | | | | | | | | | | | | | | | mA |
| Current Scale Factor | Full Load | 4.7 | 14.2 | 6.25 | 4.1 | 10.9 | 5 | 4.0 | 7.4 | 4.17 | 4.0 | 7.5 | 3.33 | .65 | .653 | 2.5 | .65 | .650 | 2 | .65 | .642 | 1.67 | | | | | | | | | | | | | | | mAV | |
| Voltage Monitor Scaling | | 60W & 125W Models - 1000:1 ± 2% into 10MΩ; 250W Models - 10,000:1 ± 2% | | | | | | | | | | | | | | | | | | | | - | | | | | | | | | | | | | | | | |
| Internal Capacitance | Capacitance / 95% Decay (50Meg Load) | 4400/659 | 2200/330 | 1500/225 | 2933/439 | 1467/220 | 1500/225 | 2933/439 | 1467/220 | 750/112 | 2200/330 | 1100/165 | 750/112 | 1320/200 | 880/132 | 750/112 | 1100/165 | 733/110 | 500/75 | 825/125 | 550/85 | 500/75 | | | | | | | | | | | | | | | pF/mS | |
| Ripple | Full Load, Max Eout | < 1% | | | | | | | | | | | | | | | | | | | | V p-p | | | | | | | | | | | | | | | | |
| Rise Time | Max Iout, Various C Loads & Eout | Figure A | | | | | | | | | | | | | | | | | | | | - | | | | | | | | | | | | | | | | |
| Storage Capacitance | Internal | 4400 | 2200 | 1500 | 2933 | 1467 | 1500 | 2933 | 1467 | 750 | 2200 | 1100 | 750 | 1320 | 880 | 750 | 1100 | 733 | 500 | 825 | 550 | 500 | | | | | | | | | | | | | | pF | | |
| Overshoot | C Load, 0 Eout to Full Eout | < 1% | | | | | | | | | | | | | | | | | | | | V pk | | | | | | | | | | | | | | | | |
| Line Regulation | Nom. Input, Max Eout, Full Power | < 0.01% | | | | | | | | | | | | | | | | | | | | VDC | | | | | | | | | | | | | | | | |
| Static Load Regulation | No Load to Full Load, Max Eout | < 0.01% | | | | | | | | | | | | | | | | | | | | VDC | | | | | | | | | | | | | | | | |
| Stability | 30 Min. warmup, per 8 hr/ per day | < 0.01% / < 0.02% | | | | | | | | | | | | | | | | | | | | VDC | | | | | | | | | | | | | | | | |
| PROGRAMMING & CONTROLS | | ALL TYPES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Input Impedance | Nominal Input | + Output Models 1.1MΩ to GND, - Output Models 1.1MΩ to +5 Vref | | | | | | | | | | | | | | | | | | | | MΩ | | | | | | | | | | | | | | | | |
| Adjust Resistance | Typical Potentiometer Values | 10K to 100K (Pot across Vref. & Signal GND, Wiper to Adjust) | | | | | | | | | | | | | | | | | | | | Ω | | | | | | | | | | | | | | | | |
| Adjust Logic | 0 to +5 for +Out, +5 to 0 for - Out | +4.64 VDC for +Output or +0.36 for -Output = Nominal Eout | | | | | | | | | | | | | | | | | | | | - | | | | | | | | | | | | | | | | |
| Output Voltage & Impedance | T=+25°C | + 5.00VDC ± 1%, Zout = 464Ω ± 1% | | | | | | | | | | | | | | | | | | | | - | | | | | | | | | | | | | | | | |
| Enable/Disable | | 0 to +0.8V Disable, +2.0 to 32 Enable (Default = Enable) | | | | | | | | | | | | | | | | | | | | VDC | | | | | | | | | | | | | | | | |
| ENVIRONMENTAL | | ALL TYPES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operating | Full Load, Max E out, Case Temperature | -40 to +65 | | | | | | | | | | | | | | | | | | | | °C | | | | | | | | | | | | | | | | |
| Coefficient | Over the Specified Temperature | ±50 (±25 Optional) | | | | | | | | | | | | | | | | | | | | PPM/°C | | | | | | | | | | | | | | | | |
| Thermal Shock | Mil-Std-810, Method 503-4, Proc. II | -40 to +65 | | | | | | | | | | | | | | | | | | | | °C | | | | | | | | | | | | | | | | |
| Storage | Non-Operating, Case Temp. | -55 to +105 | | | | | | | | | | | | | | | | | | | | °C | | | | | | | | | | | | | | | | |
| Humidity | All Conditions, Standard Package | 0 to 95% non-condensing | | | | | | | | | | | | | | | | | | | | - | | | | | | | | | | | | | | | | |
| Altitude | Standard Package, All Conditions | Sea Level through 70,000 | | | | | | | | | | | | | | | | | | | | ft | | | | | | | | | | | | | | | | |
| Shock | Mil-Std-810, Method 516.5, Proc. IV | 20 | | | | | | | | | | | | | | | | | | | | G's | | | | | | | | | | | | | | | | |
| Vibration | Mil-Std-810, Method 514.5, Fig.514.5C-3 | 10 | | | | | | | | | | | | | | | | | | | | G's | | | | | | | | | | | | | | | | |

C = uF
V = Volts
I = mA
T = mS

$$T = \frac{C \times V}{I}$$

C = uF
V = kV
I = mA
F = Hz

$$I = C \times V \times F$$

C = uF
V = kV
I = mA
F = Hz

$$F = \frac{I}{C \times V}$$

Specifications subject to change without notice.

C = uF
E² = kV
J = Ws

$$J = \frac{C \times E^2}{2}$$

Figure A - Rise Time Formulas

NOTES: Capacitance must include HVPS internal Capacitance.



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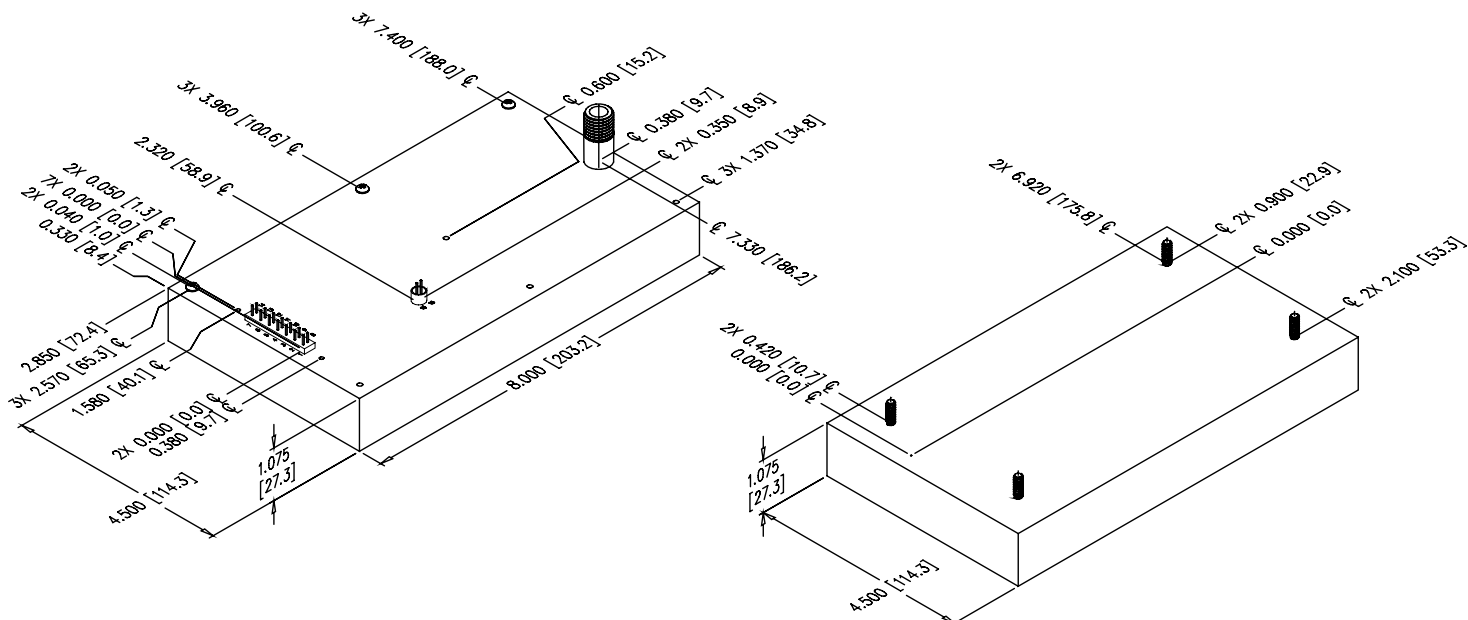
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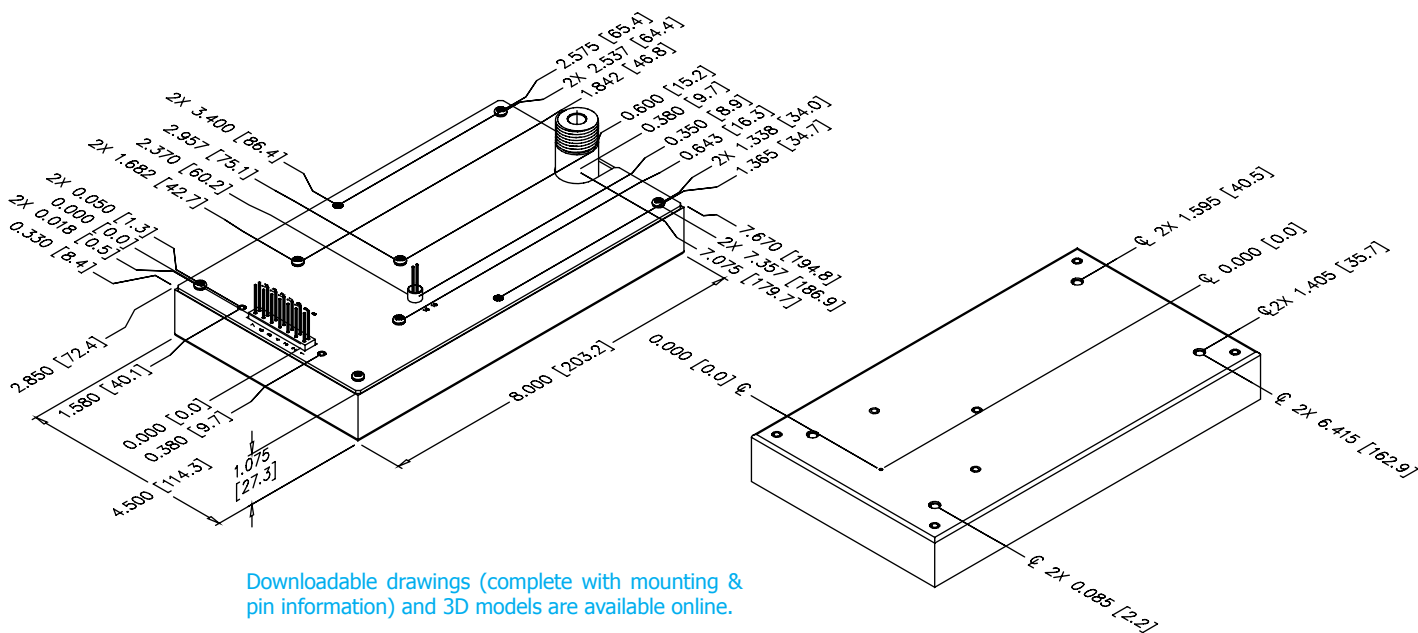
HIGH POWER 8C-30C SERIES

8kV to 30kV High Voltage Cap-Charging Supplies

8C TO 15C - 60/125W



20C TO 30C - 60/125W



Downloadable drawings (complete with mounting & pin information) and 3D models are available online.



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HIGH POWER 8C-30C SERIES

8kV to 30kV High Voltage Cap-Charging Supplies

| CONNECTIONS | |
|--------------|----------------------------|
| PIN | FUNCTION |
| 1 & 8 | Input-Power Ground Return |
| 2 & 9 | Positive Power Input |
| 3 | Iout Monitor |
| 4 | Enable/Disable |
| 5 | Signal Ground Return |
| 6 | Remote Adjust Input |
| 7 | +5VDC Reference Output |
| 10 | N/C (or Arc Detect option) |
| 11, 12, & 13 | N/C |
| 14 | Eout Monitor |
| 15 & 16 | HV Ground Return |

All grounds joined internally. Power-supply mounting points isolated from internal grounds by >100kΩ, .01uF / 500V (Max).

| ORDERING INFORMATION | | |
|----------------------|-----------------------------------|--------|
| Type | 0 to 8,000 VDC Output | 8C |
| | 0 to 10,000 VDC Output | 10C |
| | 0 to 12,000 VDC Output | 12C |
| | 0 to 15,000 VDC Output | 15C |
| | 0 to 20,000 VDC Output | 20C |
| | 0 to 25,000 VDC Output | 25C |
| | 0 to 30,000 VDC Output | 30C |
| Input | 24VDC Nominal | 24 |
| Polarity | Positive Output | -P |
| | Negative Output | -N |
| Power | 60 Watts Output | 60 |
| | 125 Watts Output | 125 |
| | 250 Watts Output | 250 |
| Heat Sink | .400" High (sized to fit case) | -H |
| PCB Support | (5) 0.187" standoffs on top cover | -Z11 |
| Enhanced Interface | 5V Controls and Monitors | -I5 |
| | 10V Control and Monitors | -I10 |
| Options | Arc Detect | -AD |
| | Arc Quench | -AQ |
| | 25PPM Temperature Coefficient | -25PPM |

Note: For more information on the enhanced interface options, download the [I5/I10 Option datasheet](#).



Popular accessories ordered with this product include CONN-KIT-HP, BR-7 and BR-8 mounting bracket kits and our full range of high voltage output connectors (see Accessories & Connectors datasheet).



Non-RoHS compliant units are available. Please contact the factory for more information.

Manufactured in USA



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Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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