

10A-25A SERIES

10kV to 25kV High Voltage Biasing Supplies

The 10A-25A Series of regulated, high-voltage DC-DC converters are an extension of the A Series, directly addressing the needs of the miniature PCB or chassis-mount $\geq 10\text{kV}$ application. Designed and built utilizing state-of-the-art power conversion topology, these units feature surface-mount technology and encapsulation techniques providing high reliability and low cost. Typical applications for the 10A-25A Series include the following: electrophoresis, mass spectroscopy, electron microscopes, plasma and cathode ray tubes (CRT).

- 0 to 10kV, 15kV, 20kV, or 25kV output
- 4, 15 or 30 watts of output power
- Maximum Iout capability down to 0 Volts
- Wide input voltage range
- Indefinite output short-circuit protection



- Output current & voltage monitors
- Fixed-frequency, low-stored-energy design
- >450,000 hour MTBF @65°C
- UL/cUL Recognized Component; CE Mark (LVD & RoHS)

| PARAMETER | CONDITIONS | MODELS | | | | | | | | | | | | UNITS |
|----------------------------|---|--|-------|-------|-------------|-------|-------|--|-------|-------|-------------|-------|-------|------------|
| INPUT | | 12V | | | | | | 24V | | | | | | |
| Voltage Range | Full Power | + 11 to 16 | | | | | | + 23 to 30 | | | | | | VDC |
| Voltage Range | Derated Power Range | + 9 to 32 | | | | | | + 9 to 32 | | | | | | VDC |
| Current | Standby / Disable | < 30 | | | | | | < 30 | | | | | | mA |
| Current | No Load, Max Eout | 10A < 0.20, 15A/20A/25A < 0.25 | | | | | | 10A < 0.17, 15A < 0.20, 20A < 0.21, 25A < 0.25 | | | | | | A |
| Current | Max Load, Max Eout | ~ 500 | | | | | | ~ 1600 | | | | | | mA |
| AC Ripple Current | Nominal Input, Full Load | < 80 | | | | | | < 80 | | | | | | mA p-p |
| OUTPUT | | 10A | | | 15A | | | 20A | | | 25A | | | |
| Voltage Range | Nominal Input | 0 to 10,000 | | | 0 to 15,000 | | | 0 to 20,000 | | | 0 to 25,000 | | | VDC |
| Nominal Input Voltage | | 12 | 24 | 24 | 12 | 24 | 24 | 12 | 24 | 24 | 12 | 24 | 24 | VDC |
| Power | Nominal Input, Max Eout | 4 | 15 | 30 | 4 | 15 | 30 | 4 | 15 | 30 | 4 | 15 | 30 | Watts |
| Current | Iout Entire Output Voltage Range | 0.40 | 1.5 | 3.0 | 0.26 | 1.0 | 2.0 | 0.20 | 0.75 | 1.5 | 0.16 | 0.60 | 1.2 | mA |
| Current Scale Factor | Full Load | 0.167 | 0.184 | 0.381 | 0.158 | 0.181 | 0.378 | 0.152 | 0.178 | 0.184 | 0.145 | 0.175 | 0.183 | mA/V |
| Voltage Monitor Scaling | | 1000:1 \pm 2% into 10M Ω | | | | | | | | | | | | - |
| Ripple | Full Load, Max Eout, 300pF bypass Cap. | 0.012 | 0.039 | 0.076 | 0.024 | 0.043 | 0.080 | 0.020 | 0.031 | 0.080 | 0.020 | 0.080 | 0.051 | %V p-p |
| Ripple with -F-M Option | Full Load, Max Eout, 300pF bypass Cap. | 0.008 | 0.034 | 0.072 | 0.021 | 0.028 | 0.073 | 0.010 | 0.018 | 0.039 | 0.010 | 0.040 | 0.040 | %V p-p |
| Dynamic Load Regulation | 1/2 to Full Load, Max Eout per 0.1mA | <5.0 | <5.0 | <5.0 | <7.5 | <7.5 | <7.5 | <10.0 | <10.0 | <10.0 | <10.0 | <10.0 | <10.0 | 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 1.1M Ω to GND, - Output Models 1.1M Ω to +5 Vref | | | | | | | | | | | | M Ω |
| 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 \pm 2%, Zout = 464 Ω \pm 1% | | | | | | | | | | | | - |
| Enable/Disable | | 0 to +0.5 Disable, +2.4 to 32 Enable (Default = Enable) | | | | | | | | | | | | VDC |
| ENVIRONMENTAL | | STANDARD | | | | | | -25PPM | | | | | | |
| Operating | Full Load, Max Eout, Case Temp. | -40 to +65 | | | | | | +10 to +45 | | | | | | °C |
| Coefficient | Over the Specified Temperature | \pm 50 | | | | | | \pm 25 | | | | | | 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 Vacuum (Vacuum may require -P2 option, contact factory for details.) | | | | | | | | | | | | - |
| Shock | Mil-Std-810, Method 516.5, Proc. IV | 20 (Standard), 40 (-C Option) | | | | | | | | | | | | G's |
| Vibration | Mil-Std-810, Method 514.5, Fig.514.5C-3 | 10 (Standard), 20 (-C Option) | | | | | | | | | | | | G's |

Specifications subject to change without notice.



Making High Voltage Easier!®

Higher Service, Higher Performance, Higher Reliability

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10A SERIES STANDARD CASE



20A SERIES STANDARD CASE



15A SERIES STANDARD CASE



25A SERIES STANDARD CASE



CONSTRUCTION

Epoxy-filled DAP box certified to ASTM-D-5948 with -C Option:
Aluminum Alloy 5052-H32, Finish: MIL-A-8625 Type II (Anodizing)

SIZE

Volume:

10A: 4.90 in³ (80.31cc), w/-C Option 8.80 in³ (144.23cc)
15A: 6.35 in³ (104.08cc), w/-C Option 11.00 in³ (180.29cc)
20A: 8.55 in³ (140.13cc), w/-C Option 14.40 in³ (236.02cc)
25A: 11.70 in³ (191.76cc), w/-C Option 20.00 in³ (327.80cc)

Weight:

10A: 6.00 oz (170.10g), w/-C Option 11.50 oz (326.02g)
15A: 8.00 oz (226.80g), w/-C Option 14.00 oz (396.89g)
20A: 11.00 oz (311.84g), w/-C Option 19.00 oz (538.64g)
25A: 15.00 oz (425.24g), w/-C Option 22.00 oz (623.69g)

TOLERANCE

Overall ± 0.050 " (1.27)
Pin to Pin ± 0.015 " (0.38)
Mounting hole locations ± 0.025 " (0.64)

NOTES

Standard case length, width, and height specs are ± 0.050 " (1.27)
-C Option case length, width and height specs are ± 0.025 " (0.635)
15W and 30W versions are an additional 0.070" (1.78) in height.
-M equipped units are an additional 0.030" (0.76) for each dimension.
Contact [UV Customer Service](#) for drawings of models equipped with -E, -C, or -H options.

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



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| CONNECTIONS | |
|-------------|---------------------------|
| PIN | FUNCTION |
| 1 | Input-Power Ground Return |
| 2 | Positive Power Input |
| 3 | Iout Monitor |
| 4 | Enable/Disable |
| 5 | Signal Ground Return |
| 6 | Remote Adjust Input |
| 7 | +5VDC Reference Output |
| 8 | HV Ground Return |
| 9 | Eout Monitor |

All grounds joined internally. Power-supply mounting points isolated from internal grounds by >100k Ω , .01 μ F / 50V (Max) on all models except -M (15W and above), -M-E, -M-C, and -M-H configurations which are 0 Ω .

| ORDERING INFORMATION | | |
|--------------------------------------|---|------------|
| Type | 0 to 10,000 VDC Output | 10A |
| | 0 to 15,000 VDC Output | 15A |
| | 0 to 20,000 VDC Output | 20A |
| | 0 to 25,000 VDC Output | 25A |
| Input | 12VDC Nominal (4W only) | 12 |
| | 24VDC Nominal (15W and 30W only) | 24 |
| Polarity | Positive Output | -P |
| | Negative Output | -N |
| Power | Watts Output (12Vin Only) | 4 |
| | Watts Output (24Vin Only) | 15 |
| | Watts Output (24Vin Only) | 30 |
| Case | Plastic Case - Diallyl Phthalate | (Standard) |
| | 'Eared' Chassis Mounting Plate (Plastic Case) | -E |
| | RF-Tight Aluminum Enclosure | -C |
| Heat Sink | .400" High (sized to fit case) | -H |
| Shield | Six-sided Mu-Metal Shield | -M |
| Ripple Stripper [®] | Integral Output Filter (See -F Option Datasheet) and Mu-Metal | -F-M |
| Options | Shielded Flying Lead for HV Output | -WS |
| Lead Options | Protected Flying Lead | -AP |
| | Terminated Flying Lead (Contact Customer Service) | -ATxx |
| Temp. Coefficient | 25PPM Temperature Coefficient | -25PPM |
| Enhanced Interface (10A models only) | 5V Control and Monitors | -I5 |
| | 10V Control and Monitors | -I10 |



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

Manufactured in USA



Popular accessories ordered with this product include CONN-KIT, BR-2, BR-3, and BR-5 mounting bracket kits, and our full range of high voltage output connectors (see Accessories & Connectors datasheet).



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- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
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- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
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JONHON

«JONHON» (основан в 1970 г.)

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