



ULTRAVOLT® A SERIES
HIGH VOLTAGE BIASING SUPPLY





High voltage biasing supplies

The A Series consists of miniature, PCB-mount, high voltage, regulated DC-DC converters. Designed and built utilizing state-of-the-art power-conversion topology, these units feature surface-mount technology and encapsulation techniques that provide high reliability and performance.

- › Eight models from 0 to 62 V through 0 to 6 kV
- › 4, 20, or 30 W of output power
- › Maximum load capability down to 0 V
- › Wide input voltage range
- › Available with Ripple Stripper® filter (-F option)
- › Indefinite output short-circuit protection
- › Output current monitor
- › Fixed-frequency, low-stored-energy design
- › > 430,000 hour MTBF at 65°C (149°F)
- › UL/cUL recognized component; CE Mark (LVD and RoHS)

Typical Applications

- › Bias supplies
- › Electrostatic detectors
- › Mass spectrometers
- › Photomultiplier tubes (PMTs)



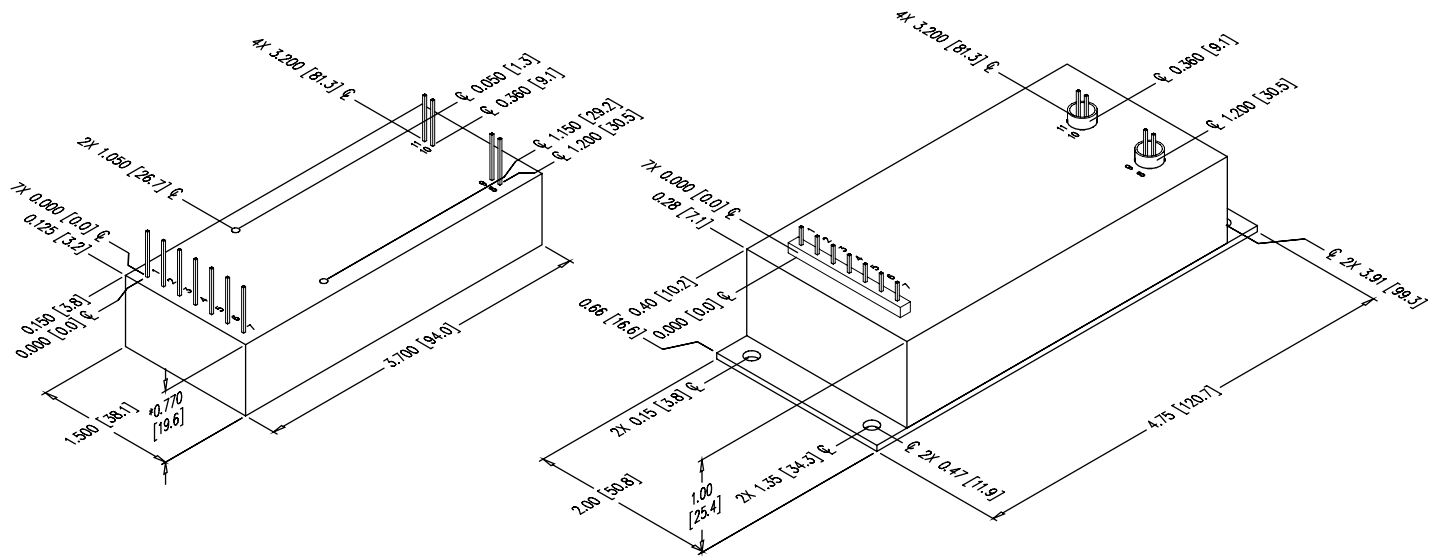


PARAMETER	CONDITIONS	MODELS								
Input		12 V								
Voltage Range	Full Power	+11 to 16								
Voltage Range	Derated Power Range	+9 to 32								
Current	Standby / Disable	< 30								
Current	No Load, Max Eout	< 100								
Current	Max Load, Max Eout	~ 400								
AC Ripple Current	Nominal Input, Full Load	< 80								
Output		1/16A			1/8A			1/4A		
Voltage Range	Nominal Input	0 to 62			0 to 125			0 to 250		
Nominal Input Voltage		12	24	24	12	24	24	12	24	24
Power	Nominal Input, Max Eout	4	20	30	4	20	30	4	20	30
Current	Iout Entire Output Voltage Range	64	320	480	32	160	240	16	80	120
Current Monitor Scaling	Full Load	0.985	3.90	7.40	438.4	1860.5	2891.5	213.3	1000	1481.5
Voltage Monitor Scaling	With -Y5 option	10:1 ± 2% into 10 MΩ								
Ripple	Full Load, Max Eout	0.02	0.03	0.05	0.013	0.015	0.016	0.01	0.04	0.048
Ripple with -F-M Option*	Full Load, Max Eout, 300 pF Bypass Cap	0.002	0.004	0.006	0.0048	0.0056	0.006	0.0052	0.0028	0.005
Dynamic Load Regulation	½ to Full Load, Max Eout per 0.1 mA	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.12	< 0.20	< 0.20	< 0.20
Line Regulation	Nom. Input, Max Eout, Full Power	< 0.01 %								
Static Load Regulation	No Load to Full Load, Max Eout	< 0.01%								
Stability	30 Min. warmup, per 8 hr/ Per Day	< 0.01%/< 0.02%								
Programming & Controls		All Types								
Input Impedance	Nominal Input	+ output models 1.1 MΩ to GND, - output models 1.1 MΩ to +5 Vref								
Adjust Resistance	Typical Potentiometer Values	10 to 100 K (Pot. across Vref. and signal GND, wiper to adjust)								
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	+ 5.00 VDC ± 2%, Zout = 464 Ω ± 1%								
Enable/Disable		0 to +0.5 disable, +2.4 to 32 enable (default = enable)								
Environmental		Standard								
Operating	Full Load, Max Eout, Case Temp.	-40 to +65								
Coefficient	Over the Specified Temperature	±50								
Thermal Shock	Mil-Std 810, Method 503-4, Proc. II	-40 to +65								
Storage	Non-Operating, Case Temp.	-55 to +105								
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)								
Vibration	Mil-Std-810, Method 514.5, Fig.14.5C-3	10 (standard), 20 (-C option)								

* For additional information on the reduced ripple option, see -F Option datasheet.



															UNITS
24 V															
+23 to 30															VDC
+9 to 32															VDC
< 30															mA
< 90															mA
- 1350															mA
< 80															mA p-p
1/2A			1A			2A			4A			6A			
0 to 500			0 to 1000			0 to 2000			0 to 4000			0 to 6000			VDC
12	24	24	12	24	24	12	24	24	12	24	24	12	24	24	VDC
4	20	30	4	20	30	4	20	30	4	20	30	4	20	30	W
8	40	60	4	20	30	2	10	15	1	5	7.5	0.67	3.3	5	mA
123.1	506.3	740.7	55.56	243.9	400	31.75	129.9	211.3	16.4	66.7	85.2	12.9	48.5	56.8	mA/V
100:1 ±2% into 10 MΩ															-
0.001	0.02	0.017	0.038	0.071	0.15	0.01	0.05	0.065	0.019	0.057	0.022	0.018	0.073	0.112	%V p-p
0.001	0.0138	0.0016	0.001	0.0008	0.002	0.0007	0.0038	0.004	0.0004	0.0088	0.0026	0.0003	0.0012	0.004	%V p-p
< 0.50	< 0.50	< 0.50	< 1.0	< 1.0	< 1.0	< 2.0	< 2.0	< 2.0	< 4.0	< 4.0	< 4.0	< 6.0	< 6.0	< 6.0	V pk
															VDC
															VDC
															VDC
															MΩ
															Ω
															-
															-
															VDC
-25PPM Option															
+10 to +45															°C
+25															PPM/°C
															°C
															°C
															-
															-
															Gs
															Gs



PHYSICAL SPECIFICATIONS

Construction	Epoxy-filled DAP box certified to ASTM-D-5948 with -C Option: Aluminum Alloy 5052-H32, Finish: MIL-A-8625 Type II (Anodizing)
Volume	4.30in ³ (70.5cc), w/ -C Option: 8.00in ³ (131.1cc)
Weight	5.0oz (142g), w/ -C Option: 10.0oz (284g)

Notes: 20 W and 30 W versions are an additional 1.57 mm (0.062") in height.

-M equipped units are an additional 0.76 mm (0.030") for each dimension.

Contact AE for drawings of models equipped with -E or -H options.

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	+5 VDC Reference Output
8	HV Ground Return
9	HV Ground Return or Eout Monitor (-Y5)
10 & 11	HV Output

All grounds joined internally. Power-supply mounting points isolated from internal grounds by $> 100 k$, $0.01 \mu F/50 V$ (Max) on all models except -M (20 W and above), -M-E, -M-C, and -M-H configurations which are 0Ω . Popular accessories ordered with this product include CONN-KIT and BR-1 mounting bracket kit.



ORDERING INFORMATION

Type	0 to 62 VDC Output	1/16A
	0 to 125 VDC Output	1/8A
	0 to 250 VDC Output	1/4A
	0 to 500 VDC Output	1/2A
	0 to 1000 VDC Output	1A
	0 to 2000 VDC Output	2A
	0 to 4000 VDC Output	4A
	0 to 6000 VDC Output	6A
Input	12 VDC Nominal	12
	24 VDC Nominal	24
Polarity	Positive Output	-P
	Negative Output	-N
Power	Watts Output (12 V Only)	4
	Watts Output (24 V Only)	20
	Watts Output (24 V Only)	30
Case	Plastic Case - Diallyl Phthalate	(Standard)
	'Eared' Chassis Mounting Plate	-E
	RF-Tight Aluminum Case	-C
Heat Sink	0.400" High (Sized to Fit Case)	-H
Ripple Stripper®	Integral Output Filter*	-F
Shield	Six-Sided Mu-Metal Shield	-M
Voltage Monitor	Optional Eout Monitor	-Y5
Iout Monitor Boost	Boosted Iout Monitor Signal Level	-Y10
Temp. Coefficient	25 PPM Temperature Coefficient	-25PPM
Enhanced Interface	5 V Control and Monitors	-I5
	10 V Control and Monitors (24 Vin only)	-I10
Option	Flying Lead for HV Output	-W
	Shielded Flying Lead for HV Output	-WS

* For additional information on the reduced ripple option, see -F Option datasheet.



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





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