

# GMA SERIES

## High Voltage Power Supply

The GMA Series of proportional DC to DC high-voltage power supply modules provides designers a miniature low-cost PCB mount solution with a nominal performance HV output.

The GMA Series operates from an input voltage of 1.2VDC to 12VDC or 2.4 to 24VDC. By proportionally controlling the input voltage to the module over this input range, an output range of 10% to 100% is generated. The 8 models in the GMA series range from 10V to 100VDC through 300V to 3kV output voltage with 0 to 1.5 watts of output power.

Optional Isolation of the HV output from the LV input is available at 100V, allowing the designer to ground the HV output at a remote point and to introduce a current sense resistor if needed. Optional low noise models deliver  $\leq 0.1\%$  pk-pk ripple through the use of an output filter & shielded enclosure.

GMA Series units are protected against reversed polarity inputs, output short circuit and open circuit conditions. These converters are fully encapsulated in UL Listed GE RTV627 and are 100% tested before shipment.

Typical applications for this series include the following:

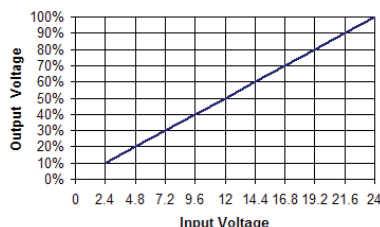
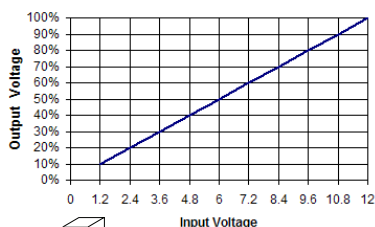
**Drivers** for pulse generators, PZT actuators, MEMS devices, laser & electro-optic modulation, ink jet printing and electrophoresis.

**Bias Supply** for general purposes, detectors, Geiger-Muller tubes, Avalanche Photo Diode (APD), PMT, SiD, beam deflection and focusing in mass spectrometry (Ion Beam) and electron microscopes (E-Beam).



- 8 models from 10V to 100VDC through 300V to 3kV DC
- Proportional – HV output tracks the input to within 10%
- Output power of 0 to 1.5 Watts - No minimum load!
- Output ripple of  $\leq 1.0\%$  Vpk-pk,  $< 0.1\%$  with "-F-M" option
- Output regulation 10% typical, 20% max
- 100V of isolation from input to output ("-ISN" option)
- No heat sink or electrical derating required
- Efficiency  $> 50\%$  at full load
- See the PXS & RS Series for higher performance.
- $> 280,000$  hour MTBF @40°C per Mil-HDBK-217F-N2
- UL/cUL Recognized Component; CE Mark (LVD & RoHS)

PARAMETER	CONDITIONS	MODELS								UNITS
INPUT		12V				24V				
Voltage Range	Full Power	1.2 to 12				2.4 to 24				VDC
Current	No Load, Nominal Eout	Typically 33mA to 56mA for 12V Units; 19mA to 32mA for 24V Units								mA
Current	Nominal Load, Nominal Eout	Typically 225mA for 12V Units; Typically 125mA for 24V Units								mA
OUTPUT		100V	200V	300V	500V	1000V	1500V	2000V	3000V	
Voltage	Nominal Input	10 to 100	20 to 200	30 to 300	50 to 500	100 to 1,000	150 to 1,500	200 to 2,000	300 to 3,000	VDC
Power	Nominal Input, Max Eout	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	W
Current	out Entire Output Voltage Range	15	7.5	5	3	1.5	1	0.75	0.5	mA
OUTPUT		ALL TYPES								
Voltage Adjust	Proportional	Input Voltage of 10% to 100% programs the Output Voltage 10% to 100% $\pm 10\%$ full scale								V
Ripple	Full Load, Max Eout	$\leq 1\%$								%V p-p
Ripple with "-F-M" Option	Full Load, Max Eout, 300pF bypass cap, 25% to 50% reduction	$\leq 0.1\%$								%V p-p
Line Regulation	Nom. Input, Max Eout, Full Power	Output is proportional to input over a 10% to 100% input range, with a variation of $+10\%$ of rated output voltage								VDC
Static Load Regulation	No Load to Full Load, Max Eout	Typically $< 10\%$ (for a zero to 1.5W Load Change) maximum 20%								VDC
Stability	30 Min. warmup, per 8 hr/ per day	$< 0.10\%$								VDC
ENVIRONMENTAL		ALL TYPES								
Operating	Full Load, Max Eout, Case Temp.	-20 to +60								°C
Temperature Coefficient	Over the Specified Temperature	400								PPM/°C
Storage	Non-Operating, Case Temp.	-40 to +85								°C
Humidity	Non-Condensing	0 to 90% Non-Condensing								-



Specifications subject to change without notice.



Making High Voltage Easier!®

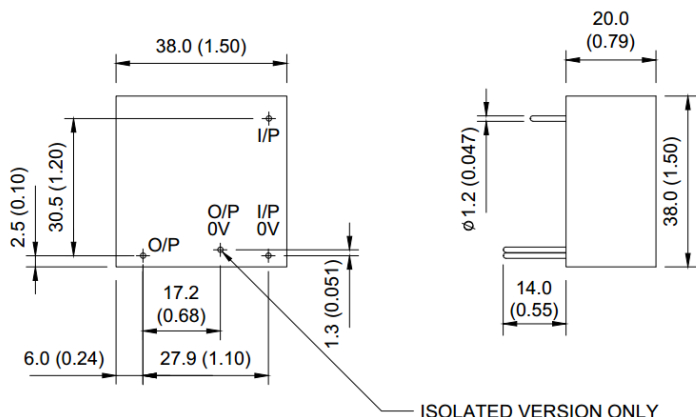
Higher Service, Higher Performance, Higher Reliability

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## High Voltage Power Supply

### STANDARD VERSION



### CONSTRUCTION

Black ABS case  
 Insulation: Fully Encapsulated in RTV silicon.

### SIZE

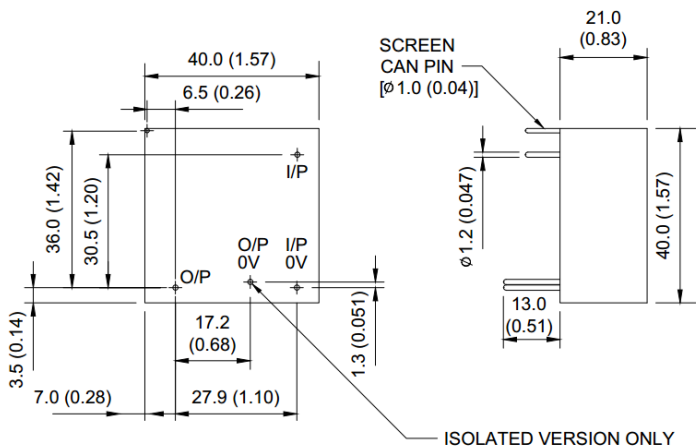
Dimensions:  
 Standard: 1.5" x 1.5" x 0.79" [38mm x 38mm x 20mm]  
 Shielded: 1.58" x 1.58" x 0.86" [40mm x 40mm x 21mm]

Volume: 1.77 in<sup>3</sup> [28.88 CC]  
 Weight: 2oz [60g]

Tolerance:  
 TBD

NOTES:  
 Isolated version 100V maximum.

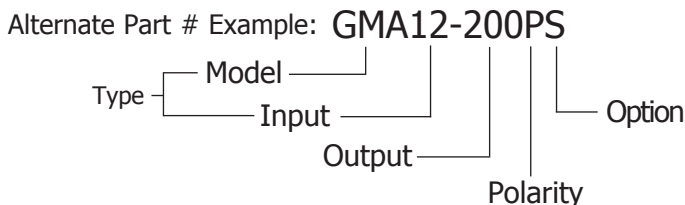
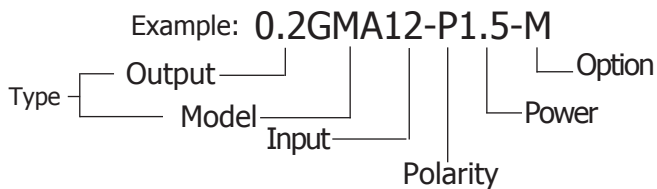
### SHIELDED VERSION



ORDERING INFORMATION		P/N	ALT P/N
Output	0 to 100 VDC	0.1	100
	0 to 200 VDC	0.2	200
	0 to 300 VDC	0.3	300
	0 to 500 VDC	0.5	500
	0 to 1,000 VDC	1	1k
	0 to 1,500 VDC	1.5	1k5
	0 to 3,000 VDC	3	3k
Model	Series Name	GMA	GMA
Input	12 V	12	12
	24 V	24	24
Polarity	Positive Output	-P	-P
	Negative Output	-N	-N
Power	0 to 1.5W Output	1.5	
Options	Ripple Stripper Output Filter & Shielded Case	-F-M	-S
	100V Input / Output Isolation	-ISN	-I

Contact the factory for other output requirements!

CONNECTIONS	
PIN	FUNCTION
I/P	Input Power
I/P 0V	Input Power Ground
O/P 0V	HV Output Power Ground (Isolated Version)
O/P	HV Output



**CE** These component power supplies meet the requirements of EC Directive 73/23/EEC (LVD)

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

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1800 Ocean Avenue, Ronkonkoma, NY 11779  
 Phone: 1-631-471-4444 Fax: 1-631-471-4696 www.ultravolt.com