



**MISSION-CRITICAL
HIGH VOLTAGE COMPONENTS
FOR MASS SPECTROMETRY SYSTEMS**
THE WORLD LEADER IN PRECISION POWER CONVERSION
NOW POWERS MASS SPECTROMETRY TECHNOLOGY



HiTek Power and UltraVolt, pioneers of today's cutting edge high voltage power, have teamed together under Advanced Energy®.

The Value We Bring

Advanced Energy® has devoted more than three decades to perfecting power. Our precision power and control technologies, along with our applications know-how, inspire close partnerships and perpetual innovation.

With the expertise and technology of UltraVolt and HiTek Power, **AE delivers premier high voltage power performance to mass spectrometry applications.**

CUSTOMIZATION AND INTEGRATION

- CLOSE CUSTOMER PARTNERSHIP FROM CONCEPT THROUGH PRODUCTION AND INTEGRATION
- 40+ YEARS OF DESIGN AND APPLICATION EXPERTISE
- FAST TURNAROUND ON CUSTOM DESIGNS

WORLD-CLASS OPERATIONS AND SUPPORT

- BEST-IN-CLASS MANUFACTURING AND QUALITY
- GLOBAL REACH, GLOBAL SUPPORT, GLOBAL EXPERTISE

Extensive selection

With standard-configurable and custom-designed products, **we offer a comprehensive selection of high voltage components.**

REVERSIBLE FAST SWITCHING	PRECISION HIGH STABILITY LOW RIPPLE	MICRO-SIZED PCB-MOUNTABLE	SPECIALTY	GENERAL
MSRF SERIES <ul style="list-style-type: none"> › ±10 to 10,000 V › 100 to 200 ppm ripple › 20 ms switching speed › 0.05% stability 	MSRL SERIES <ul style="list-style-type: none"> › ±10 to 30,000 V › 10 ppm ripple › 0.05% stability › Reversible, latching, high stability 	US SERIES <ul style="list-style-type: none"> › 0 to 500 V (+ or -) › 100 ppm ripple › < 0.01% stability › Miniature, PCB-mount 	MSRD SERIES <ul style="list-style-type: none"> › 0 to ±12,000 V › 17 to 40 ppm ripple › 150 mS switching speed › 0.01% stability › Reversible › High stability › Floating detector 	MSS SERIES <ul style="list-style-type: none"> › 50 to 20,000 V (+ or -) › 200 ppm ripple › 0.03% stability › Small footprint
MSRZ SERIES <ul style="list-style-type: none"> › ±10 to 10,000 V › 35 to 60 ppm ripple › 20 to 50 ms switching speed › 0.05% stability 	E SERIES <ul style="list-style-type: none"> › 0 to 15,000 V (+ or -) › 10 ppm ripple › 0.001% stability › Precision 	AA SERIES <ul style="list-style-type: none"> › 0 to 6000 V › 100 to 730 ppm ripple › 0.01% stability › PCB-mount 	MSQ SERIES <ul style="list-style-type: none"> › ±430 V and ±800 V or ±1350 V › 500 ppm ripple › 0.25% stability › Quad lens HVPS › Dual bipolar 	10A-25A-F-M SERIES <ul style="list-style-type: none"> › 0 to 25,000 V (+ or -) › 80 to 730 ppm › 0.01% stability › PCB-mount › High stability
	MSP SERIES <ul style="list-style-type: none"> › 0 to 20,000 V (+ or -) › 5 to 10 ppm ripple › 0.05% stability › Precision, high stability 	V & M SERIES <ul style="list-style-type: none"> › 0 to 3000 V (+ or -) › 100 ppm ripple › < 0.01% stability › Micro-sized › Arc protection 	EFL LVPS SERIES <ul style="list-style-type: none"> › 5 to 24 V (+ or -) › 0.02% stability › 4 floating outputs 	30A-40A-F-M SERIES <ul style="list-style-type: none"> › 0 to 40,000 V (+ or -) › 70 to 530 ppm ripple › 0.01% stability › PCB-mount › High stability
	PM10 SERIES <ul style="list-style-type: none"> › 10 to 5000 V (+ or -) › 4 to 10 ppm ripple › 0.005% stability › Full range control and monitoring 	D SERIES <ul style="list-style-type: none"> › 0 to 6000 V (+ or -) › 200 ppm ripple › < 0.01% stability › Micro-sized 	FL LVPS SERIES <ul style="list-style-type: none"> › 5 to 24 V (+ or -) › 0.02% stability › 3 floating outputs 	A-F-M SERIES <ul style="list-style-type: none"> › 0 to 6000 V (+ or -) › 3 to 138 ppm ripple › 0.01% stability › PCB-mount › High stability
		XS SERIES <ul style="list-style-type: none"> › 0 to 100 V (+ or -) › 500 ppm ripple › < 0.01% stability › Ultra-micro-sized 	HVA BIPOLAR SERIES <ul style="list-style-type: none"> › 0 to ±5000 V › 25 to 125 ppm ripple › < 0.01% stability › High voltage amplifier 	
		PXS SERIES <ul style="list-style-type: none"> › ±25 to 150 V › 5% stability › Ultra-miniature › Bipolar dual-output 	HVA SERIES <ul style="list-style-type: none"> › 0 to 10,000 V (+ or -) › 25 to 125 ppm ripple › < 0.01% stability › High voltage amplifier 	
		RS SERIES <ul style="list-style-type: none"> › 25 to 700 V (+ or -) › 2% stability › Low cost › PCB-mount › Dual output 		



AE PRODUCT FAMILY	DESCRIPTION	VOLTAGE (V) MIN	VOLTAGE (V) MAX	RIPPLE AT MAX VOLTAGE PK TO PK (PPM)	RIPPLE AT MAX VOLTAGE PK TO PK (%)	RIPPLE AT MAX VOLTAGE PK TO PK (MV)	REVERSAL SPEED (MS) TO 99% VOLTAGE	STABILITY (% PER HR)*	STABILITY (% PER 8 HR)*	TEMP COEFFICIENT (PPM/°C) AT MAX VOLTAGE	POWER MAX (W)
MSP	Precision, high stability, 10 V to 20 kV output voltages (fixed + or -), 5 to 10 ppm ripple	10	20,000	5 to 10	0.001	50 to 200	NA	0.01	0.05	25	10
MSRD	Reversible, high stability with floating detector, 4 quadrant output stage bias, 20 to 40 ppm ripple-bias	0	±12,000	17 to 40	0.0017 to 0.004	> 200	150	0.01	0.02	25	1.8
	Detector	0	3000	1000	0.1	3000	NA	0.1	0.1	300	1.2
MSQ	Quad output (dual bipolar) rail supply, ±400 V to ±1.5 kV, 85 W	430 (±)	1350 (±)	500	0.05	215 to 675	NA	0.25	0.25	250	85
MSRF	Reversible, fast switching (20 ms), zero crossing, 10 V to 10 kV voltage output, 100 to 200 ppm ripple	±10	±10,000	100 to 200	0.01 to 0.02	500 to 1000	20	0.01	0.05	25	3.2
MSRZ	Reversible, fast switching (20 to 50 ms), zero crossing, 10 V to 10 kV voltage output, 35 to 60 ppm ripple	±10	±10,000	35 to 60	0.0027 to 0.006	60 to 350	20 to 50	0.01	0.05	10 or 25	3.2
MSRL	Reversible latching, high stability, ±10 V to ±30 kV output voltages, 5 to 10 ppm ripple	±10	±30,000	10	0.001	10 to 300	NA	0.01	0.05	25	10
E	Precision, high stability bias supply, 0 to 15 kV (fixed + or -)	0	15,000	10	0.001	10 to 150	NA	< 0.001	0.001	10	30
PM10	Versatile detector, electrostatic lens, and spectrometer supply (fixed + or -); high stability, full range control and monitoring	10	5000	4 to 10	0.0004 to 0.001	10 to 20	NA	0.005	0.005	25	10
A-F-M	PCB mount, high stability bias supply, 0 to 6 kV, (F-M option is ripple stripper.)	0	6000	3 to 138	0.0003 to 0.0138	1.2 to 104	NA	< 0.01	0.01	25	30
10A-25A-F-M	PCB mount, high stability bias supply, 0 to 25 kV, (F-M option is ripple stripper.)	0	25,000	80 to 730	0.008 to 0.073	800 to 10,950	NA	< 0.01	0.01	25 or 50	30
30A-40A-F-M	PCB mount, high stability bias supply, 0 to 40 kV, (F-M option is ripple stripper.)	0	40,000	70 to 530	0.007 to 0.053	2800 to 21,200	NA	< 0.01	0.01	25	30
AA	PCB mount, high stability bias supply, 0 to 6 kV (fixed + or -)	0	6000	100 to 730	0.01 to 0.073	18.6 to 2760	NA	< 0.01	0.01	25	30
HVA	High voltage amplifier, 0 to 10 kV, < 3 kHz (fixed + or -)	0	10,000	25 to 125	0.0025 to 0.0125	125 to 500	NA	< 0.01	0.01	15	1
HVA Bipolar	Bipolar high voltage reversible amplifier, 0 to 5 kV	0	±5000	75 to 125	0.0075 to 0.0125	125 to 500	10	< 0.01	0.01	15	1
MSS	Small footprint, 50 V to 20 kV output voltages (fixed + or -)	50	20,000	200	0.02	1000 to 4000	NA	0.03	0.03	300	5
EFL (24 V input) LVPS	4 floating outputs, isolated sub-system, 5 V, up to 30 kV isolation	5.1	24	NA	NA	200 to 360	NA	< 0.02	0.02	10	36
FL	3 floating outputs, isolated sub-system, 5 V, up to 15 kV isolation	5.1	24	NA	NA	50 to 300	NA	< 0.02	0.02	100	24
V	Vertical, micro-sized, self-restoring, arc-protection bias supply, 0 to 3 kV (fixed + or -)	0	3000	100	0.01	60 to 300	NA	< 0.01	0.01	100	1
M	Micro-sized, self restoring, arc-protection bias supply, 0 to 3 kV (fixed + or -)	0	3000	100	0.01	60 to 300	NA	< 0.01	0.01	100	1
D	Ultra-compact, low-profile, PCB-mount bias supply, 0 to 6 kV (fixed + or -)	0	6000	200	0.02	200 to 1200	NA	< 0.01	0.01	100	6
XS	Super micro-sized, PCB-mount bias supply, 0 to 100 V (fixed + or -)	0	100	500	0.05	50	NA	< 0.01	0.01	50	0.1
US	Miniature, PCB-mount, arc-protection bias supply, 0 to 500 V (fixed + or -)	0	500	100	0.01	20 to 50	NA	< 0.01	0.01	50	0.1
RS	Low-cost, PCB- or chassis-mount, dual-output (bipolar) rail supply, ±50 to ±0.7 kV, 15 W	±25	±700	NA	NA	125 to 3500	NA	< 2	2	150	10
PXS	Ultra-miniature, PCB-mount, dual-output (bipolar) rail supply, ±25 to ±150 V output	±25	±150	NA	NA	250 to 1500	NA	< 5	5	200	1.5



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