SERIES HVP
HI VOLTAGE PROGRAMMABLE
PLUG-IN MODULES

0 - 100Vdc to 0 - 6000Vdc
5 Watt Positive and Negative Output Voltages

The HVP Series miniature precision 5 Watt High Voltage Converters are encased in a six side shielded case measuring only 2.55"x1.30"x0.50"(h). The low profile enables them as PCB mountable components in customer applications.

FEATURES:
• Accessible Calibration Trimmer
• 5 Watt Output
• Precision Regulated
• Low Ripple
• Low Temperature Coefficient
• 0 to 100% Output Programmable
• Wide Input Range: 11 to 16 Vdc
• Voltage Monitor and Reference Outputs
• Input Over Voltage Protection
• Output Arc, Over Current and Short Circuit Protection
• Remote Shutdown
• Operating Temperature Range: -25°C to +70°C
• Miniature 6 side shielded low profile case (0.500")
• PCB mountable

PHYSICAL CHARACTERISTICS:
• Size: 2.55"(w) x 1.3" (d) x 0.5"(h)
• Weight: 50 grams
• Case: 6 side Metal Shield
• Pins: 0.04" diameter, 0.40" length

TYPICAL CHARACTERISTICS:
• Input Voltage: 11 to 16Vdc.
• Input Current: 150mA max. no load -- 650mA max. full load
• Input voltage Shutdown: 18V, latching
• Programming Voltage: 0 to 5Vdc -- shdn @ Vprog < 0.25V
• Internal Programming Voltage Limit: 5.5 Vdc typical
• Voltage Monitor: 0 to 5V for 0 to 100%V out
• Reference Voltage: 5Vdc +/- 2%, 1mA max.
• Linearity: <1% (10% to 100% Vout)
• Output Current Limit: Iout, Max +30% typ.
• Output Power: 5W max.
• Efficiency: 70% typical
• Internal Overtemperature Shutdown: 95°C, latching
• Line Regulation: <0.005% Vout
• Load Regulation: <0.01% Vout (for 0 to 100% Load change)
• Output Ripple: <0.007% Vout, peak - peak
• Converter Frequency: 55 to 110kHz
• Calibration Adjustment Range: >1%
• Stability: <0.005%/hr
• Temperature Coefficient: <50ppm/°C
• Operating Temperature Range: -25°C to +70°C
• Storage Temperature Range: -55°C to +125°C
<table>
<thead>
<tr>
<th>SERIES HVP</th>
<th>OUTPUT</th>
<th>REGULATION</th>
<th>RIPPLE*** FULL LOAD PEAK - PEAK (%)typical</th>
<th>PRICE (US $)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Volt</td>
<td>Current</td>
<td>Line (%)</td>
<td>Load (%)</td>
</tr>
<tr>
<td>HVP0.1P</td>
<td>0 to +100</td>
<td>50</td>
<td>&lt;0.005</td>
<td>&lt;0.01</td>
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<tr>
<td>HVP0.1N</td>
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<td>50</td>
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<td>10</td>
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<tr>
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<td>10</td>
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<tr>
<td>HVP1P</td>
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<td>5</td>
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<td>&lt;0.01</td>
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<tr>
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<td>5</td>
<td>&lt;0.005</td>
<td>&lt;0.01</td>
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<tr>
<td>HVP2P</td>
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<tr>
<td>HVP2N</td>
<td>0 to -2kV</td>
<td>2.5</td>
<td>&lt;0.005</td>
<td>&lt;0.01</td>
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<tr>
<td>HVP3P</td>
<td>0 to +3kV</td>
<td>1.67</td>
<td>&lt;0.005</td>
<td>&lt;0.01</td>
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<tr>
<td>HVP3N</td>
<td>0 to -3kV</td>
<td>1.67</td>
<td>&lt;0.005</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>HVP4P</td>
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<td>1.25</td>
<td>&lt;0.005</td>
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<tr>
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<td>0 to -4kV</td>
<td>1.25</td>
<td>&lt;0.005</td>
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<tr>
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<td>&lt;0.005</td>
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<tr>
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<tr>
<td>HVP6P</td>
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<td>0.84</td>
<td>&lt;0.005</td>
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<td>HVP6N</td>
<td>0 to -6k</td>
<td>0.84</td>
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NOTES:
All specifications are given under the following conditions: +25°C ambient, 12Vdc Input at Full Load
Measurements taken after 1 hour warm-up
Load regulation given for 0 to 100% load change
For negative output units (suffix N), Vmonitor returns a buffered signal of the internal programming voltage
For expanded temperature range or non-standard features, please consult factory
***FOR LOWER RIPPLE APPLICATIONS CONSULT FACTORY: 800-431-1064

SERIES HVP

**PIN DESCRIPTION:**

**Pin #1 (+IN):** Input Voltage to the unit, 11Vdc to 16Vdc. Input Voltage of 18Vdc and higher will cause the unit to shut-down. To restore operation, Input Over Voltage condition should be removed and input power recycled.

**Pin #2 (MON):** Returns a voltage proportional to the actual output voltage within 0 to 5Vdc range. Useful to identifying an overload condition by comparing with Vprog. For negative output units, Vmon returns a buffered signal of the internal programming voltage.

**Pin #3 (REF):** 5V ref generated on board. Range: 4.90Vdc to 5.10Vdc (±2%). Current sourcing capability: <1mA.

**Pin #4 (PROG):** Programming Voltage 0 to 5Vdc controls the output within 0 to 100% Vout max. A programming voltage limiter is designed in to prevent internal programming voltage from exceeding 5.5Vdc. Input impedance at Pin # 4 to Gnd is higher than 100 Kohm (if Vprog doesn't exceed 5Vdc). When pulled below 0.25Vdc, the unit will shut-down, non-latching.

**Pin #5 (COM IN):** Return of the Input Voltage to the unit. Internally connected with COM OUT.

**Pin #6 (COM OUT):** Return of HV Out. Connected with COM IN, represents the common point of input and output voltages.

**Pin #7 (Out):** High Voltage Output