

# 4000HN series

26 to 40 watts



## Key Features:

- **Unencapsulated construction**
- **Single, Dual & Triple Output Models**
- **Industry Standard 2.0" x 2.0" x .50" Footprint**

## Ideally Suited For:

- **Telecom equipment**
- **Mixed analog/digital subsystems**
- **Distributed power networks**

## Input Characteristics

|                               |   |
|-------------------------------|---|
| Input Voltage Range:          | 9-18, 18-36, 36-75 VDC                  |
| Input Under Voltage Shutdown: | 8V (9-18), 16V (18-36), 33V (36-75) VDC |
| Input Over Voltage Shutdown:  | 20V (12Vin), 40V (24Vin), 80V (48Vin)   |
| Input Filtering:              | Pi filter                               |
| Efficiency:                   | See Available Models Chart              |
| No Load Input Current:        | 20mA                                    |

## Output Characteristics

|  |   |
|--|---|
| Output Voltage Accuracy (Singles & Duals): | +/-1%   |
| Output Voltage Accuracy (Triples):         | +/-1% (V1), +/-3% (V2 & V3)                               |
| Output Voltage Adjustment:                 | +/-10%  |
| Total Error Band (Singles & Duals):        | +/-2% Max. (Singles), +/-3% Max. (Duals)                  |
| Total Error Band (Triples):                | +/-3% Max (V1), +/-5% Max (V2 & V3)                       |
| Minimum Load Requirements:                 | 10% (Duals & Triples)                                     |
| Line Regulation:                           | +/-0.5% Low Line to High Line                             |
| Load Regulation (Singles & Duals):         | +/-0.5% (Singles), +/-2.0% (Duals), Min Load to Full Load |
| Load Regulation (Triples):                 | +/-1% (V1), +/-5% (V2 & V3), Min Load to Full Load        |
| Ripple and Noise:                          | 50mV or 1% pk-pk, 20MHz Bandwidth                         |
| Transient Response/Recovery Time:          | 200µs, 25% Load Step                                      |
| Temperature Coefficient:                   | +/-0.02% / °C   |
| Short Circuit Protection:                  | Continuous (Hiccup Mode)                                  |
| Over Voltage Protection:                   | Standard  |

## Environmental Characteristics

|  |   |
|--|---|
| Operating Temperature Range (Ambient): | -40°C to +85°C, See 4000HN Series Data Sheet for Derating curves. |
| Storage Temperature Range:             | -55°C to +125°C   |
| Maximum Case Temperature:              | 105°C Baseplate   |
| Thermal Shutdown:                      | 115°C Baseplate   |
| Humidity:                              | Up to 95%, Non-condensing   |
| Vibration:                             | 5Grms, 5Hz to 2KHz  |
| Reliability (MTBF per Mil-HDBK-217):   | >1,000,000 hours, +25°C, Ground Benign                            |

## General Characteristics

|                              |  |
|------------------------------|--|
| Switching Frequency:         | 400KHz, Fixed  |
| Isolation (Input to Output): | 1500VDC minimum (1 minute)                           |
| Isolation Capacitance:       | 1200pF   |
| Weight:                      | 1.2oz (34g)  |
| Case Material:               | Aluminum baseplate with black anodized aluminum case |
| Agency Approvals:            | UL, CSA, TUV and CE (LVD, 48 Vin Models)             |

## Additional Features

|                      |                  |
|----------------------|------------------|
| Remote Shutdown      |                  |
| Supply On:           | Open or >3.5 VDC |
| Supply Off:          | <0.8 VDC         |
| Output voltage trim: | +/-10%           |

**Distributed By:**  
**B. J. Wolfe Enterprises**  
**(800) 554-1224**  
**Fax (818) 889-8417**

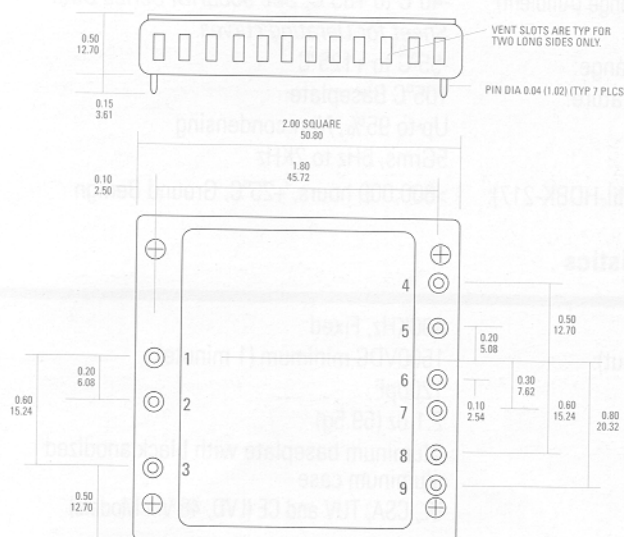
## Available Models

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| Model        | Nominal Input Voltage (VDC) | Input Voltage Range (VDC) | Output Voltage (VDC) | Max. Output Current (mA) | Efficiency @ Full-Load (%) |
|--------------|-----------------------------|---------------------------|----------------------|--------------------------|----------------------------|
| 4003S12HN    | 12                          | 9-18                      | 3.3                  | 8000                     | 80                         |
| 4005S12HN    | 12                          | 9-18                      | 5.0                  | 6000                     | 81                         |
| 4012S12HN    | 12                          | 9-18                      | 12.0                 | 2500                     | 86                         |
| 4015S12HN    | 12                          | 9-18                      | 15.0                 | 2000                     | 87                         |
| 4005D12HN    | 12                          | 9-18                      | +/-5.0               | +/-4000*                 | 80                         |
| 4012D12HN    | 12                          | 9-18                      | +/-12.0              | +/-1600*                 | 83                         |
| 4015D12HN    | 12                          | 9-18                      | +/-15.0              | +/-1200*                 | 84                         |
| 4005/12T12HN | 12                          | 9-18                      | +5 / +/-12           | 5000 / +/-800*           | 82                         |
| 4005/15T12HN | 12                          | 9-18                      | +5 / +/-15           | 5000 / +/-650*           | 83                         |
| 4003S24HN    | 24                          | 18-36                     | 3.3                  | 8000                     | 80                         |
| 4005S24HN    | 24                          | 18-36                     | 5.0                  | 6000                     | 83                         |
| 4012S24HN    | 24                          | 18-36                     | 12.0                 | 2500                     | 87                         |
| 4015S24HN    | 24                          | 18-36                     | 15.0                 | 2000                     | 88                         |
| 4005D24HN    | 24                          | 18-36                     | +/-5.0               | +/-5000*                 | 81                         |
| 4012D24HN    | 24                          | 18-36                     | +/-12.0              | +/-2000*                 | 83                         |
| 4015D24HN    | 24                          | 18-36                     | +/-15.0              | +/-1500*                 | 84                         |
| 4005/12T24HN | 24                          | 18-36                     | +5 / +/-12           | 6000 / +/-1000*          | 83                         |
| 4005/15T24HN | 24                          | 18-36                     | +5 / +/-15           | 6000 / +/-800*           | 84                         |
| 4003S48HN    | 48                          | 36-75                     | 3.3                  | 8000                     | 80                         |
| 4005S48HN    | 48                          | 36-75                     | 5.0                  | 6000                     | 84                         |
| 4012S48HN    | 48                          | 36-75                     | 12.0                 | 2500                     | 88                         |
| 4015S48HN    | 48                          | 36-75                     | 15.0                 | 2000                     | 89                         |
| 4005D48HN    | 48                          | 36-75                     | +/-5.0               | +/-5000*                 | 83                         |
| 4012D48HN    | 48                          | 36-75                     | +/-12.0              | +/-2000*                 | 85                         |
| 4015D48HN    | 48                          | 36-75                     | +/-15.0              | +/-1500*                 | 86                         |
| 4005/12T48HN | 48                          | 36-75                     | +5 / +/-12           | 6000 / +/-1000*          | 84                         |
| 4005/15T48HN | 48                          | 36-75                     | +5 / +/-15           | 6000 / +/-800*           | 84                         |

\*Total output power not to exceed 40W (30W for 12Vin models).

## Outline Drawing



## Pinout Chart

| Pin | Single Output  | Dual Output   | Triple Output |
|-----|----------------|---------------|---------------|
| 1   | +Input         | +Input        | +Input        |
| 2   | -Input         | -Input        | -Input        |
| 3   | Remote On/Off  | Remote On/Off | Remote On/Off |
| 4   | No Connection  | No Connection | +Output (V2)  |
| 5   | - Output Sense | Trim          | V2/V3 Common  |
| 6   | +Output Sense  | No Connection | Output (V3)   |
| 7   | +Output        | +Output (V1)  | +Output (V1)  |
| 8   | Common         | Common        | -Output (V1)  |
| 9   | Trim           | -Output (V2)  | Trim          |

All specifications are typical at 25 degrees C with nominal input voltage and full output unless otherwise noted. Specifications are subject to change without notice. All dimensions are typical.