

# 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%

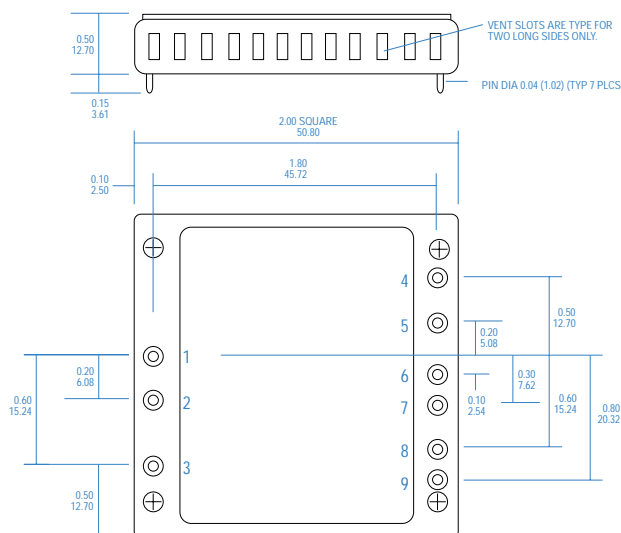


## Available Models

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.