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## nV300LF NanoVerter Series

82.5-120 Watts  
300 VDC Input  
1/2 Brick

The nV300LF NanoVerter modules are high density DC-DC converters with an input range of 220-400 VDC. These supplies utilize metal PC boards, planar transformers, and surface mount construction to produce up to 120 watts in a small package with maximum reliability. The converters are board mountable with isolation of 4500 VDC (input to output), are fully encapsulated with base-plate cooled operation up to 100°C and have been qualified to international safety standards including the latest Lead-Free and RoHS requirements. These converters are ideal for customers who need reliable power conversion in a compact, conduction cooled package.

### Operational Features

- Lead-Free / RoHS Compliant Design
- Small Footprint of only 2.30 x 2.40"
- Low Profile of only 0.42" or 0.32" (recessed mounting)
- Extremely Low Thermal Resistance
- -40 ~ 100°C Baseplate Operation
- Parallelable with Current Sharing
- Secondary Referenced Controls
- Auxiliary (housekeeping) Supply Output (PV pin)
- Logic On-Off
- Safety Agency Approved to UL/cUL 60950 (pending)
- Two Year Warranty

### Typical Applications

- Aerospace
- Civil Avionics
- Military / COTS
- Industrial Control
- Telecommunication



### Model Selection

Model Number	Input Range (VDC)	Output Voltage (VDC)	Output Current (Amps)
nV300-3LF	220-400	3.3	25
nV300-5LF	220-400	5.0	20
nV300-12LF	220-400	12	10
nV300-15LF	220-400	15	8
nV300-24LF	220-400	24	5



CE Mark (LVD)  
(pending)



UL / cUL 60950  
(pending)



Lead  
Free



RoHS  
Compliant

[www.roassoc.com](http://www.roassoc.com)

# nV300LF

82.5-120 Watt / 300 VDC Input / Half Brick



## Specifications:

CATEGORY	SPECIFICATION	MIN	TYP	MAX	CONDITIONS	
INPUT	Input voltage (VDC)	220	300	400		
	Input reflected ripple		10%		full load, nominal line	
	Input ripple rejection		60dB		@120Hz	
	No load power dissipation		1.5W		nominal line	
	Logic disabled power in		0.8W		nominal line	
OUTPUT	Set point accuracy		±0.5%	1%	full load	
	Load regulation		0.1%	0.2%	0 - full load	
	Line regulation		0.1%	0.2%	220-400 VDC	
	Ripple / Noise			1%	3%	0 - 20MHz, 3.3V / 5V outputs
				1%	2%	0 - 20MHz, 12V / 15V / 24V outputs
	Trim range	±10%*			+5%, -10% for 3V	
	Remote sense compensation	0.5V			OVP Limited on 3V model	
	OVP (non shutdown auto. rec.)		105%	110%	120%	3V outputs
			110%	115%	130%	5V / 12V / 15V / 24V outputs
	Current Limit (auto recovery)			115%		full load
	Short circuit current			130%		full load
	Current sharing (automatic)			±1%	±5%	full load
	Transient response - Excursion			3%		20 - 80% FL, 1/2 A/μs
Transient response - Recovery Time			50μs	200μs	Vout 1%	
Temperature drift				0.02%/°C		
EFFICIENCY	See Curves		80-86%		full load, nominal line	
CONTROL	Turn on time (power applied)		150ms		full load, nominal line	
	Logic turn on time		2ms		full load, nominal line	
	Logic disabled current		20μA			
PV OUTPUT	2mA PV load		10.3V		main output @ full load	
	10mA PV load		9.3V		main output @ full load	
	2mA PV load		10.3V		main output disabled	
ISOLATION	Input to output	4500VDC				
	Input to case	2500VDC				
	Output to case	500VDC				
	Input to output capacity	5200pF				
THERMAL	Operating temperature	-40°C		+100°C	Baseplate Temperature	
	Automatic shut down temperature	+100°C	+105°C	+110°C	Baseplate Temperature	
	Thermal resistance case to ambient		6.6 °C/watt			
	Storage temperature	-55°C		+110°C	Ambient Temperature	
WEIGHT	3.4oz. (96 grams)					
SIZE	0.42 x 2.40 x 2.30" / (10.70 x 60.96 x 58.42mm)					

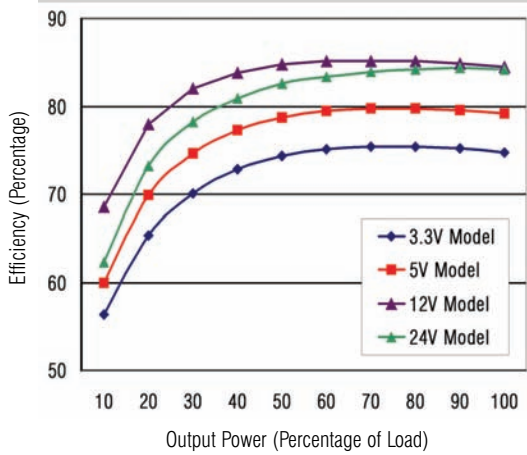
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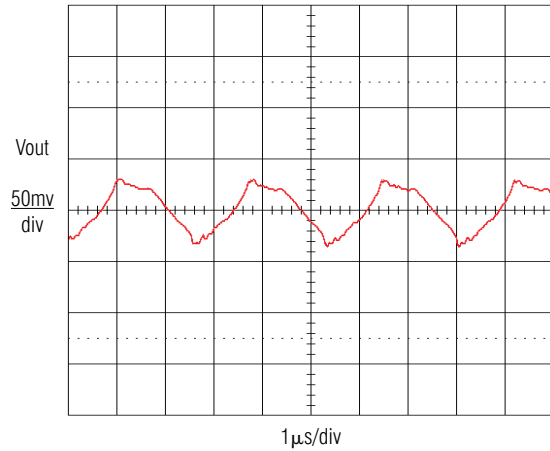
## Efficiency Curves

(300VDC Nominal Input)



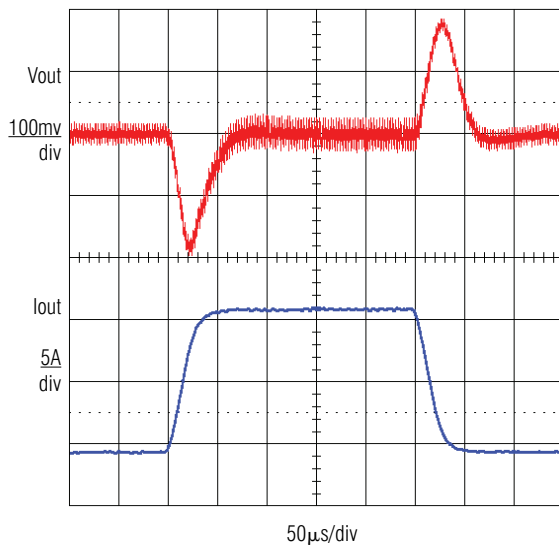
## Output Ripple

5V Model, 300V Input, 20A Output

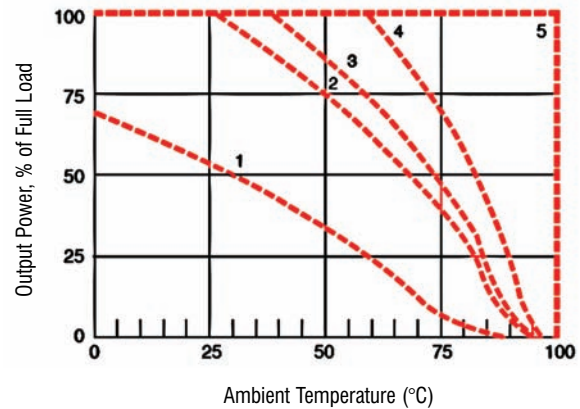


## Transient Response

5V Model, 4-16-4A, Current Slew Rate 0.5/μs



## Thermal Performance



- 1 - With no Heatsink or airflow
- 2 - With 2003 Heatsink and no airflow (or 2.9C°/W Heatsink)
- 3 - With 2003 Heatsink and 200 LFM airflow (or 2.4C°/W Heatsink)
- 4 - With 2003 Heatsink and 400 LFM airflow (or 1.6C°/W Heatsink)
- 5 - Output Power vs. Case Temperature, No De-Rating <100°C

A wide variety of evaluation boards are available for your evaluation requirements. Our application notes provide circuit design and board layout details to simplify your design processes.

Our experienced application engineering team is available for "free engineering evaluation" of your schematic and board layout to ensure your design is right the first time.

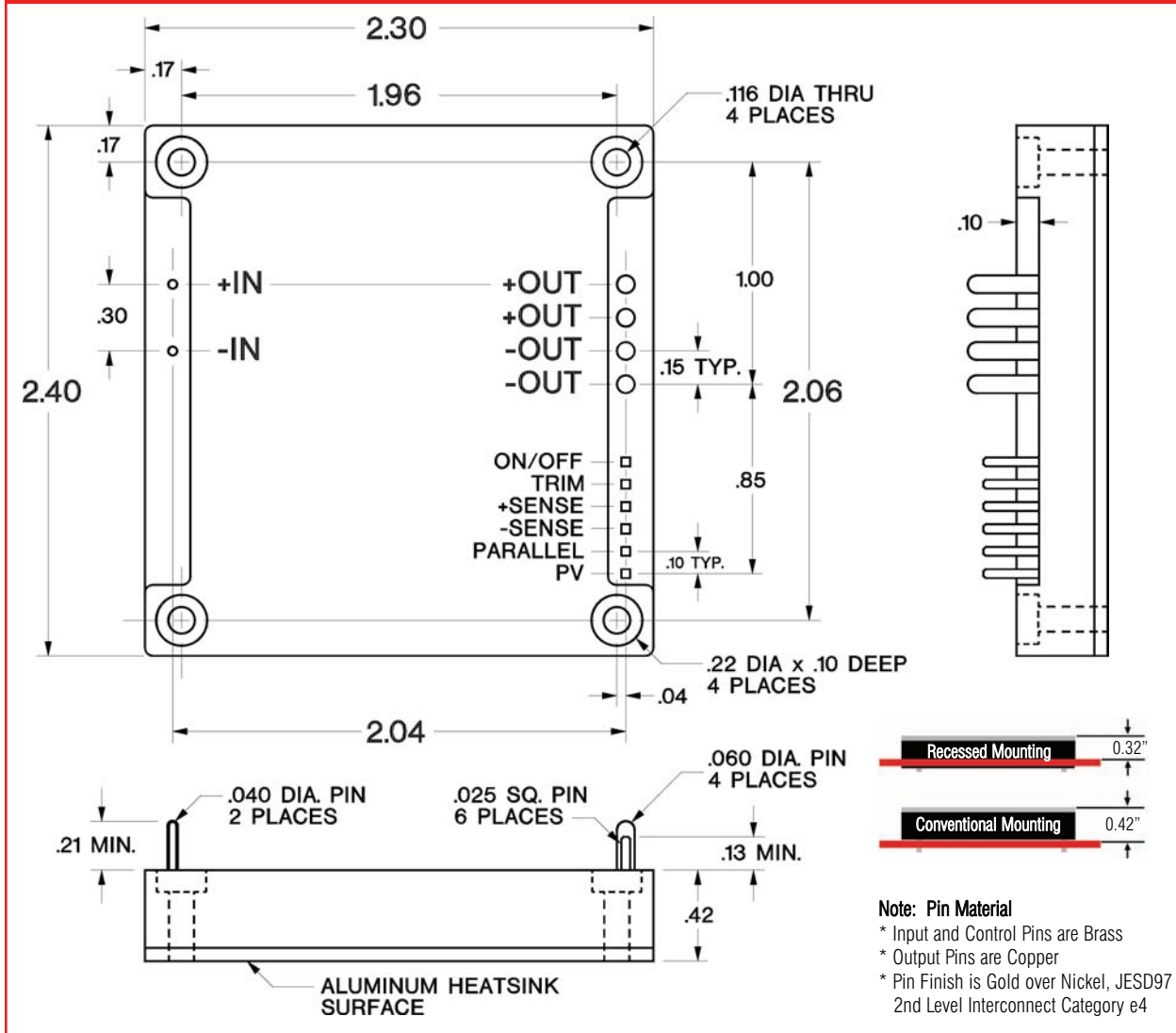


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## Mechanical Drawing



## Note:

Specifications are subject to change without notice

REV 060223-A

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