

## International Power Sources, Inc.

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## DC/DC Converters



SHOWN  
 ACTUAL  
 SIZE

### NMA SERIES 1 WATT

### FEATURES

- 0.18 in<sup>2</sup> board space
- 80% Efficiency
- 15 Watts per in<sup>3</sup>
- 5, 12, 24 and 48 VDC Inputs
- SIP and DIL Packages
- 1000 VDC Isolation

### MODELS CHART

OUTPUT VOLTAGE(S)	OUTPUT CURRENT(S)	PART NUMBERS			
		5VDC INPUT	12VDC INPUT	24VDC INPUT	48VDC INPUT
±5VDC	±100mA	NMA0505	NMA1205	NMA2405	NMA4805
±9VDC	±56mA	NMA0509	NMA1209	NMA2409	NMA4809
±12VDC	±40mA	NMA0512	NMA1212	NMA2412	NMA4812
±15VDC	±30mA	NMA0515	NMA1215	NMA2415	NMA4815

Add suffix "S" for single-in-line package, suffix "D" for dual-in-line package.

### ELECTRICAL SPECIFICATIONS

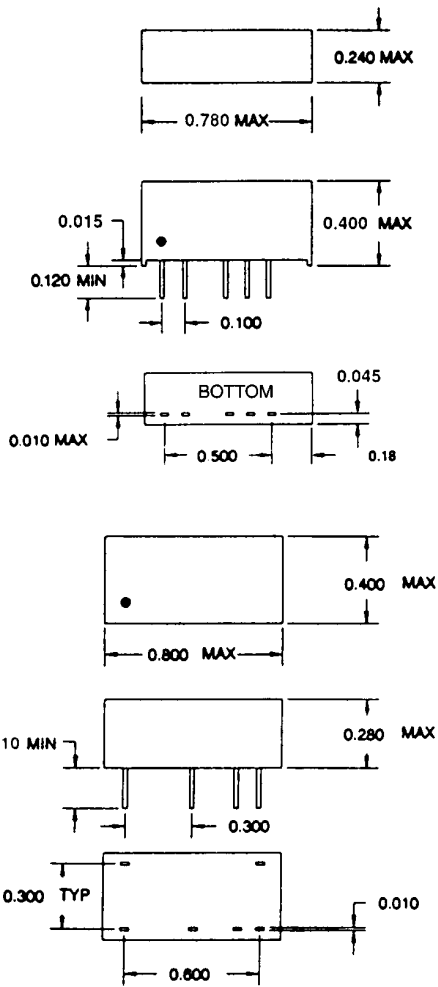
All specifications typical at nominal line, full load and 25°C

Input voltage range	±10%
Input reflected noise (20MHz BW)	80mV p-p max.
Output voltage accuracy	±5%
Line regulation (10% to 100% Load)	1.2%/1% of Vin
Load regulation (10% to 100% Load)	±10%
Output ripple and noise (20 MHz BW)	75mV p-p max.
Efficiency at full load, 9V, 12V and 15V outputs	80% typical, 70% min.
Efficiency at full load, 5V outputs	70% typical, 65% min.
Total output power (any output)	1 watt
Short circuit protection	1 second max.
Switching frequency	100 KHz
Input output isolation	1000VDC (1000 megohms) min.
Temperature coefficient	0.03% per °C max
Operating temperature range, 5V and 12V inputs	-40°C to 85°C (no derating)
Operating temperature range, 24V and 48V inputs	0°C to 70°C (no derating)
Storage temperature range	-55°C to 150°C

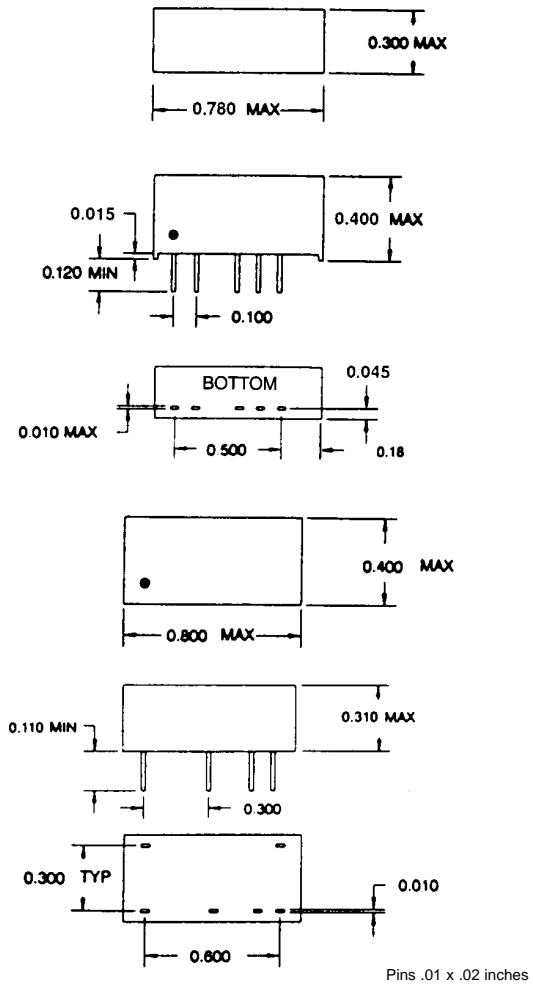
Specifications subject to change. Unit requires 10mm of air space.

## MECHANICAL SPECIFICATIONS

### 5, 12 & 24VDC INPUT MODELS

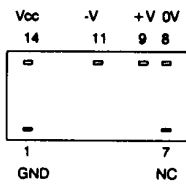


### 48VDC INPUT MODELS

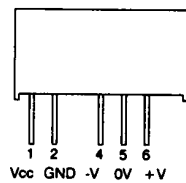


### PIN CONNECTIONS

#### DUAL-IN-LINE PACKAGE (TOP VIEW)



#### SINGLE-IN-LINE PACKAGE



### DERATING CURVE

