

**FEATURES**

- 3kVDC Isolation (1 minute)
- Single or Dual Output
- Industry Standard Pinout
- Power Sharing on Dual Output
- Efficiency to 80%
- Power Density up to 0.90W/cm<sup>3</sup>
- 24V & 48V Input
- 5V, 9V, 12V and 15V Output
- Footprint from 1.17cm<sup>2</sup>
- UL 94V-0 Package Material
- No Heatsink Required
- Internal SMD Construction
- Toroidal Magnetics
- Fully Encapsulated
- No External Components Required
- Custom Solutions Available
- No Electrolytic or Tantalum Capacitors

**DESCRIPTION**

The NMV Series offers single or dual output versions in the same size package as the popular NMA series. The higher isolation is particularly useful in control type applications where the standard 1kV is not sufficient.

**SELECTION GUIDE**

Order Code	Nominal Input Voltage (V)	Output Voltage (V)	Output Current (mA)	Load Regulation (Max) (%)	Ripple & Noise (Max) mV p-p	Efficiency (%)	Isolation Capacitance (pF)	MTF <sup>1</sup> (kHrs)	Package Style
NMV2405DA	24	5	200	15	150	70	33	201	DIP
NMV2409DA	24	9	111	10	150	80	40	185	
NMV2412DA	24	12	84	10	150	80	55	163	
NMV2415DA	24	15	67	10	150	80	70	136	SIP
NMV2405SA	24	5	200	15	150	70	33	201	
NMV2409SA	24	9	111	10	150	80	40	185	
NMV2412SA	24	12	84	10	150	80	55	163	
NMV2415SA	24	15	67	10	150	80	70	136	DIP
NMV4805DA	48	5	200	15	150	70	48	213	
NMV4809DA	48	9	111	10	150	70	59	194	
NMV4812DA	48	12	84	10	150	70	70	169	
NMV4815DA	48	15	67	10	150	70	81	140	SIP
NMV4805SA	48	5	200	15	150	70	48	213	
NMV4809SA	48	9	111	10	150	70	59	194	
NMV4812SA	48	12	84	10	150	70	70	169	
NMV4815SA	48	15	67	10	150	70	81	140	DIP
NMV2405D	24	5	±100	15	150	80	45	194	
NMV2409D	24	9	±55	10	150	70	52	166	
NMV2412D	24	12	±42	10	150	70	65	134	
NMV2415D	24	15	±33	10	150	70	70	101	SIP
NMV2405S	24	5	±100	15	150	80	45	194	
NMV2409S	24	9	±55	10	150	70	52	166	
NMV2412S	24	12	±42	10	150	70	65	134	
NMV2415S	24	15	±33	10	150	70	70	101	DIP
NMV4805D	48	5	±100	15	150	70	45	205	
NMV4809D	48	9	±55	10	150	70	58	175	
NMV4812D	48	12	±42	10	150	70	68	137	
NMV4815D	48	15	±33	10	150	70	75	102	SIP
NMV4805S	48	5	±100	15	150	70	45	205	
NMV4809S	48	9	±55	10	150	70	58	175	
NMV4812S	48	12	±42	10	150	70	68	137	
NMV4815S	48	15	±33	10	150	70	75	102	

When operated **with** additional external load capacitance the rise time of the input voltage will determine the maximum external capacitance value for guaranteed start up. The slower the rise time of the input voltage the greater the maximum value of the additional external capacitance for reliable start up.

**INPUT CHARACTERISTICS**

Parameter	Conditions	MIN	TYP	MAX	Units
Voltage Range	Continuous operation, 24V input types	21.6	24	26.4	V
	Continuous operation, 48V input types	43.2	48	52.8	

**OUTPUT CHARACTERISTICS**

Parameter	Conditions	MIN	TYP	MAX	Units
Rated Power <sup>2</sup>	T <sub>A</sub> = 0°C to 70°C			1	W
Voltage Set Point Accuracy	See tolerance envelope				
Line Regulation	High V <sub>IN</sub> to low V <sub>IN</sub>			1.2	%/%

**ABSOLUTE MAXIMUM RATINGS**

Short-circuit duration <sup>3</sup>	1 second
Lead temperature 1.5mm from case for 10 seconds	300°C
Input voltage V <sub>IN</sub> , NMV24 types	28V
Input voltage V <sub>IN</sub> , NMV48 types	54V

1 Calculated using MIL-HDBK-217F with nominal input voltage at full load.

2 See derating curve

3 Supply voltage must be discontinued at the end of the short circuit duration.

All specifications typical at T<sub>A</sub>=25°C, nominal input voltage and rated output current unless otherwise specified.

# NMV 24V & 48V SERIES

3kVDC Isolated 1W Single & Dual Output DC-DC Converters

## ISOLATION CHARACTERISTICS

Parameter	Conditions	MIN	TYP	MAX	Units
Isolation Test Voltage	For 1 minute	3000			VDC
Resistance	Viso=1000VDC	1			G

## GENERAL CHARACTERISTICS

Parameter	Conditions	MIN	TYP	MAX	Units
Switching Frequency	All input types		100		kHz

## TEMPERATURE CHARACTERISTICS

Parameter	Conditions	MIN	TYP	MAX	Units
Specification	All output types	0		70	°C
Storage		-55		150	°C
Cooling	Free air convection				

## PIN CONNECTIONS

Single Output Variants

14 Pin DIP	
PIN	
1	GND
7	NC
8	+V
10	0V
14	V <sub>IN</sub>

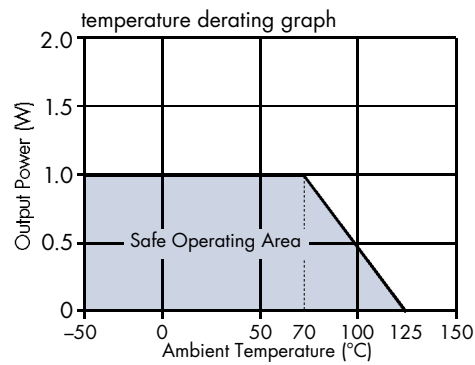
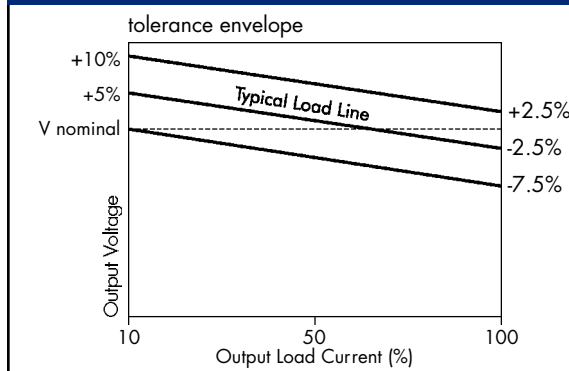
7 Pin SIP	
PIN	
1	V <sub>IN</sub>
2	GND
5	0V
7	+V

Dual Output Variants

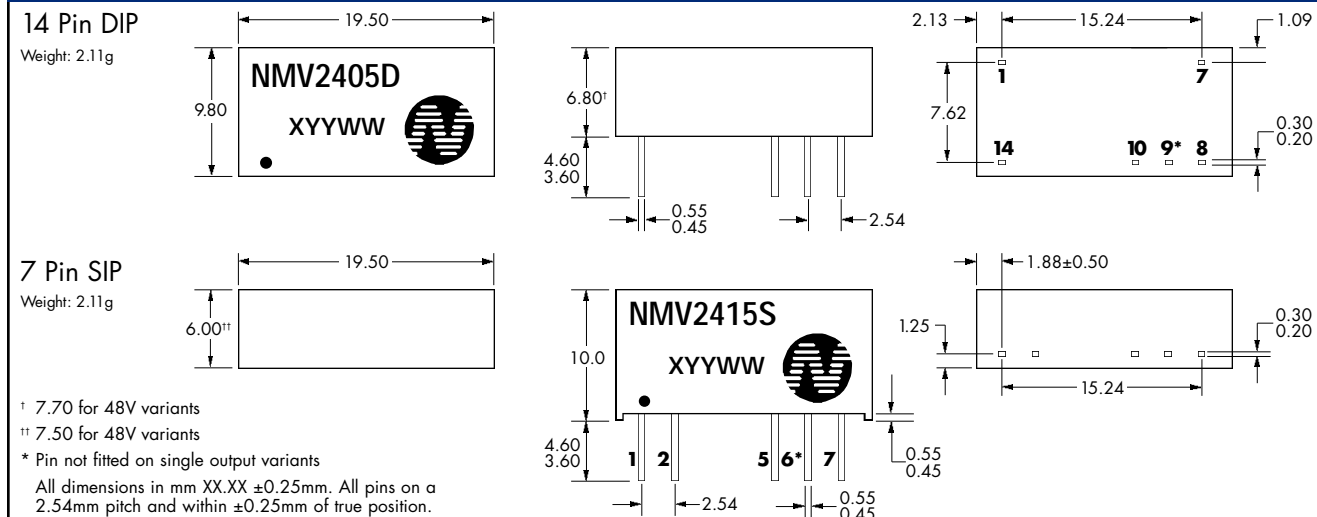
14 Pin DIP	
PIN	
1	GND
7	NC
8	+V
9	0V
10	-V
14	V <sub>IN</sub>

7 Pin SIP	
PIN	
1	V <sub>IN</sub>
2	GND
5	-V
6	0V
7	+V

## PERFORMANCE CHARACTERISTICS



## MECHANICAL DIMENSIONS



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