

**FEATURES**

- Wide Temperature Performance at Full 1W Load, -40°C to 85°C
- BS EN 60950 Certified
- 5.2kVDC Isolation (1 Minute)
- Dual Outputs
- Power Sharing
- SIP Package Style
- Efficiency to 80%
- Power Density 0.42W/cm<sup>3</sup>
- 5V & 12V Input
- 5V, 9V, 12V & 15V Output
- Pin Compatible with NMV Series SIP DC/DC Converters
- Footprint 1.91cm<sup>2</sup>
- UL 94V-0 Package Material
- No Heatsink required
- Internal SMD Construction
- Toroidal Magnetics
- Fully Encapsulated
- MTTF up to 1.6 Million Hours
- Custom Solutions Available

**DESCRIPTION**

The NMJ series are dual output DC/DC converters in a 7 pin SIP package style offering pin and functionality compatibility with the NMV series SIP DC/DC converters. The series was tested by British Standards Institute (BSI) and received certificate number 8105 issue 2 confirming compliance with BS EN 60950 and IEC 950 safety standards for reinforced insulation. The NMJ series is suitable for applications where safety and miniaturisation are of paramount importance. EN 60950 is derived from IEC 950 and is equivalent to UL 1950 and CSA 950 standards.

**SELECTION GUIDE**

	Nominal Input Voltage	Output Voltage	Output Current	Efficiency	Isolation Capacitance	MTTF <sup>1</sup>
Order Code	(V)	(V)	(mA)	(%)	(pF)	kHrs
<b>NMJ0505S</b>	5	5	±100	65	1.6	1517
<b>NMJ0509S</b>	5	9	±55	70	1.6	619
<b>NMJ0512S</b>	5	12	±42	70	1.8	313
<b>NMJ0515S</b>	5	15	±33	70	1.9	172
<b>NMJ1205S</b>	12	5	±100	65	1.8	456
<b>NMJ1209S</b>	12	9	±55	70	1.9	318
<b>NMJ1212S</b>	12	12	±42	70	2.0	211
<b>NMJ1215S</b>	12	15	±33	70	2.1	136

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, 5V input types	4.5	5	5.5	V
	Continuous operation, 12V input types	10.8	12	13.2	

**OUTPUT CHARACTERISTICS**

Parameter	Conditions	MIN	TYP	MAX	Units
Rated Power <sup>2</sup>	T <sub>A</sub> = -40°C to 85°C			1	W
Output Voltage Accuracy	See tolerance envelope	-7.5		10	%
Line Regulation	High V <sub>IN</sub> to low V <sub>IN</sub>		1.0	1.2	%/%
Load Regulation	10% load to rated load, 5V output types		10	15	%
	10% load to rated load, 9V output types		6	10	
	10% load to rated load, 12V output types		6	10	
	10% load to rated load, 15V output types		6	10	
Ripple & Noise	BW=DC to 20MHz, all output types			200	mV p-p
Zero Load Power Consumption	5V output types		275		mW
	12V output types		185		

**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> , NMJ05 types	7V
Input voltage V <sub>IN</sub> , NMJ12 types	15V

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.

# NMJ SERIES

## 5.2kVDC Isolated 1W DC/DC Converters

### ISOLATION CHARACTERISTICS

Parameter	Conditions	MIN	TYP	MAX	Units
Isolation Test Voltage	1 minute	5200			VDC
Resistance	500VDC		1000		MΩ

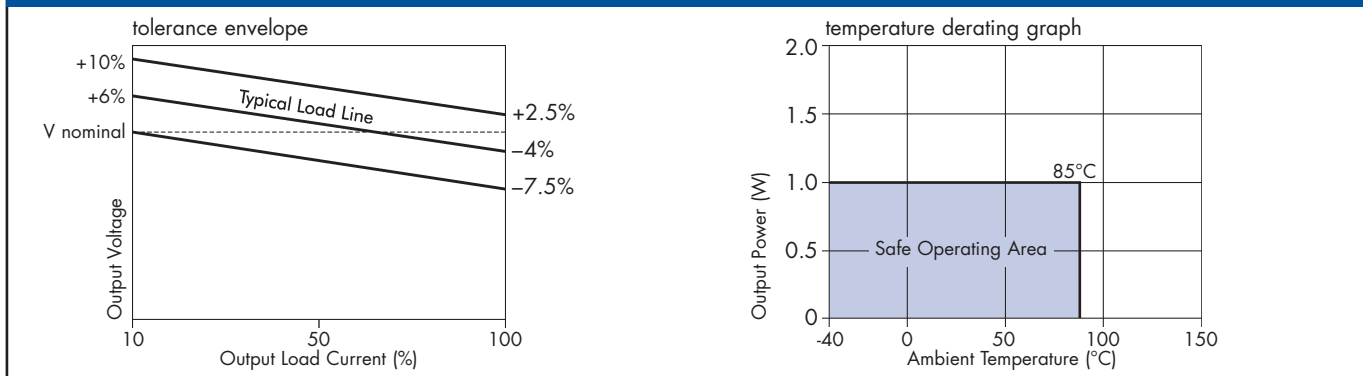
### GENERAL CHARACTERISTICS

Parameter	Conditions	MIN	TYP	MAX	Units
Switching Frequency			70		kHz

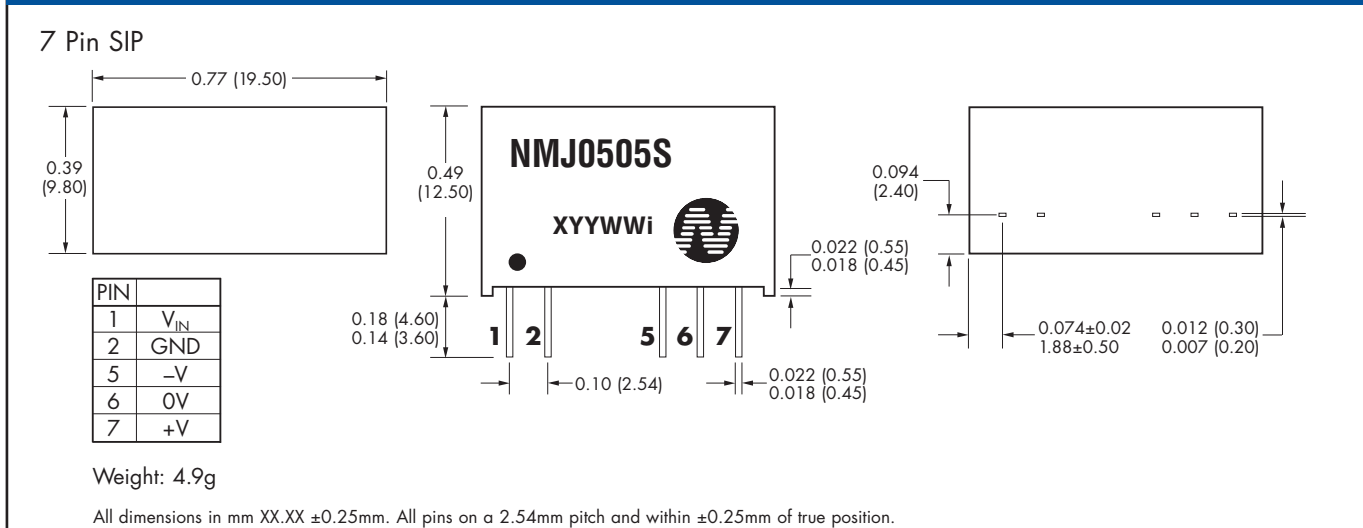
### TEMPERATURE CHARACTERISTICS

Parameter	Conditions	MIN	TYP	MAX	Units
Specification	All output types	-40		85	°C
Storage		-55		130	°C
Case Temperature Above Ambient	All output types			30	°C
Cooling	Free air convection				

### PERFORMANCE CHARACTERISTICS



### MECHANICAL DIMENSIONS



C&D Technologies (NCL) Limited reserve the right to alter or improve the specification, internal design or manufacturing process at any time, without notice. Please check with your supplier or visit our web site to ensure that you have the current and complete specification for your product before use.

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