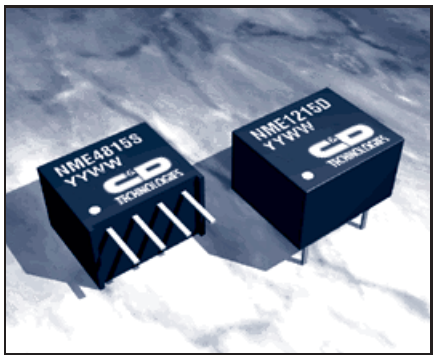
C&D TECHNOLOGIES
Power Solutions

NME 5V & 12V SERIES

Isolated 1W Single Output DC-DC Converters



FEATURES

- Wide Temperature Performance at full 1 Watt load, –40°C to 85°C
- Single Isolated Output
- Industry Standard Pinout
- 1kVDC Isolation
- Efficiency to 80%
- Power Density 1.53W/cm³
- 5V & 12V Input
- 5V, 9V, 12V and 15V Output
- Footprint from 0.69cm²
- UL 94V-0 Package Material
- No Heatsink Required
- Internal SMD Construction
- Toroidal Magnetics
- Fully Encapsulated
- No External Components Required
- MTTF up to 2.9 Million Hours
- Custom Solutions Available
- Pin Compatible with LME & NML Series
- SIP & DIP Package Styles
- PCB Mounting

DESCRIPTION

The NME Series of DC-DC Converters is particularly suited to isolating and/or converting DC power rails. The galvanic isolation allows the device to be configured to provide an isolated negative rail in systems where only positive rails exist. The wide temperature range guarantees startup from –40°C and full 1 watt output at 85°C.

SELECTION GUIDE

	Nominal Input Voltage	Output Voltage	Output Current	Input Current at Rated Load	Efficiency	Isolation Capacitance	MTTF[1]	Package Style
Order Code	(V)	(V)	(mA)	(mA)	(%)	(pF)	kHrs	
NME0505D	5	5	200	289	69	30	2414	DIP
NME0509D	5	9	111	260	77	37	1173	
NME0512D	5	12	83	256	78	33	633	
NME0515D	5	15	66	250	80	40	360	
NME0524D	5	24	42	248	80	48	290	
NME0505S	5	5	200	289	69	30	2414	SIP
NME0509S	5	9	111	260	77	37	1173	
NME0512S	5	12	83	256	78	33	633	
NME0515S	5	15	66	250	80	40	360	
NME0524S	5	24	42	248	80	48	290	
NME1205D	12	5	200	120	69	33	620	DIP
NME1209D	12	9	111	115	74	48	488	
NME1212D	12	12	83	110	76	55	360	
NME1215D	12	15	66	111	75	52	252	
NME1205S	12	5	200	120	69	33	620	SIP
NME1209S	12	9	111	115	74	48	488	
NME1212S	12	12	83	110	76	55	360	
NME1215S	12	15	66	111	75	52	252	

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	
Reflected Ripple Current			26	48	mA p-p

OUTPUT CHARACTERISTICS

Parameter	Conditions	MIN	TYP	MAX	Units
Rated Power[2]	T_A= –40°C to 85°C			1	W
Voltage Set Point Accuracy	See tolerance envelope				
Line Regulation	High V_{IN} to low V_{IN}		1.0	1.2	%/%
Load Regulation	10% load to rated load, 5V output types		14	15	%
	10% load to rated load, 9V output types		9	10	
	10% load to rated load, 12V output types		7.5	9.5	
	10% load to rated load, 15V output types		7.0	8.5	
Ripple & Noise	BW=DC to 20MHz, 5V output types		85	110	mV p-p
	BW=DC to 20MHz, 9V output types		60	75	
	BW=DC to 20MHz, 12V output types		50	65	
	BW=DC to 20MHz, 15V output types		40	55	

ABSOLUTE MAXIMUM RATINGS

Short-circuit duration[3]	1 second
Internal power dissipation	450mW
Lead temperature 1.5mm from case for 10 seconds	300°C
Input voltage V_{IN}, NME05 types	7V
Input voltage V_{IN}, NME12 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_A=25°C, nominal input voltage and rated output current unless otherwise specified.

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ISOLATION CHARACTERISTICS

Parameter	Conditions	MIN	TYP	MAX	Units
Isolation Test Voltage	Flash tested for 1 second	1000			VDC
Resistance	Viso=500VDC		10		GΩ

GENERAL CHARACTERISTICS

Parameter	Conditions	MIN	TYP	MAX	Units
Switching Frequency	5V input types		110		kHz
	12V input types		145		

TEMPERATURE CHARACTERISTICS

Parameter	Conditions	MIN	TYP	MAX	Units
Specification	All output types	-40		85	°C
Storage		-50		130	°C
Case Temperature Above Ambient	5V output types			41	°C
	All other output types			32	
Cooling	Free air convection				

PIN CONNECTIONS

8 Pin DIP

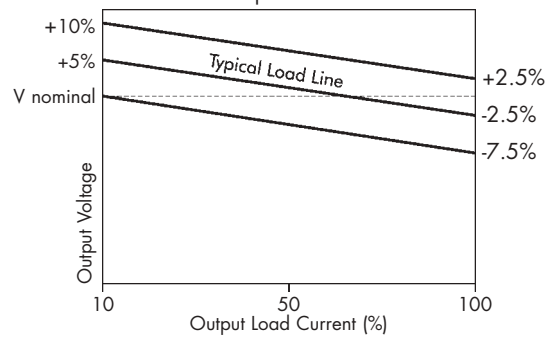
PIN	
1	GND
4	VIN
5	+V
7	0V

4 Pin SIP

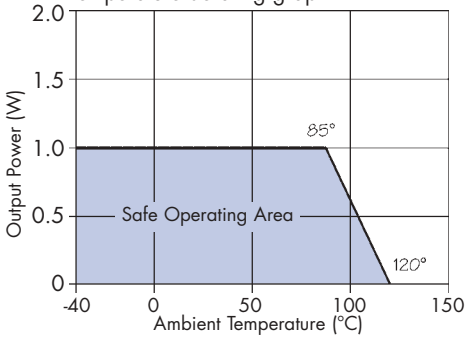
PIN	
1	GND
2	VIN
3	0V
4	+V

PERFORMANCE CHARACTERISTICS

tolerance envelope



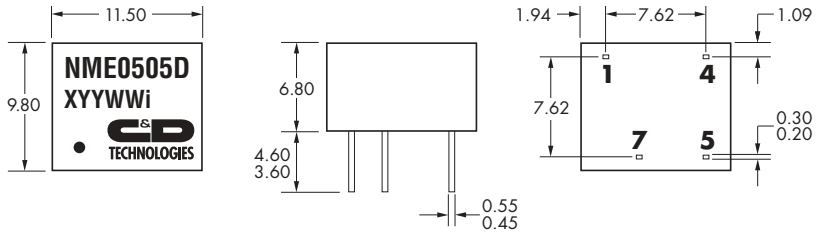
temperature derating graph



MECHANICAL DIMENSIONS

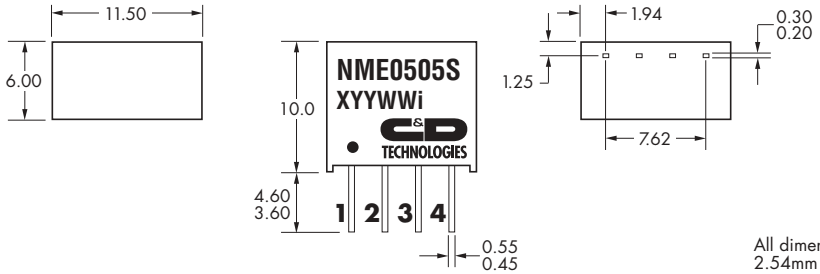
8 Pin DIP

Weight: 1.48g



4 Pin SIP

Weight: 1.30g



All dimensions in mm XX.XX ±0.25mm. All pins on a 2.54mm pitch and within ±0.25mm of true position.

Instructions for use are available from: www.cdpoweronline.com

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