

SERIES: NDM2Z-50H | **DESCRIPTION:** AUTO COMPENSATED, DIGITAL DC-DC POL CONVERTER

GENERAL CHARACTERISTICS

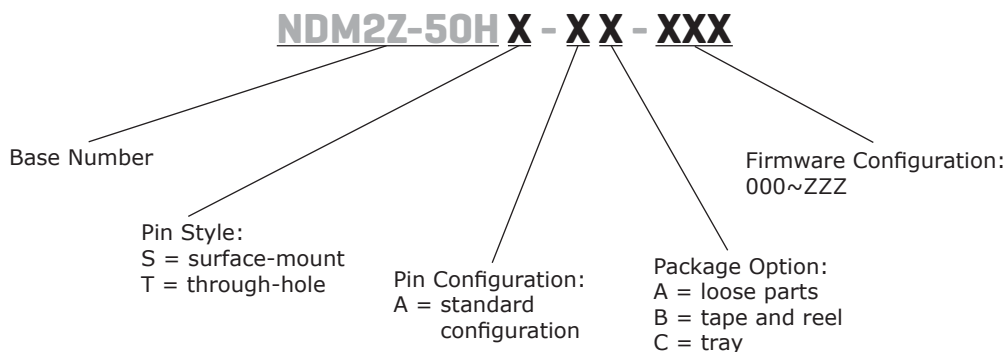
- 4.5~14 V input range
- 0.6~3.3 V programmable output
- voltage tracking
- voltage margining
- active current sharing
- *Snapshot™* parametric capture
- voltage/current/temperature monitoring
- synchronization and phase spreading
- remote differential voltage sense
- programmable soft start and soft stop
- fault management

FEATURES

- compact package
horizontal:
30.85 x 20.0 x 9.2 mm
(1.215 x 0.787 x 0.363 in)
vertical (SIP):
33.0 x 7.6 x 18.1 mm
(1.30 x 0.30 x 0.713 in)
- 50 A output
- high efficiency
- auto compensation
- SMBus interface
- PMBus™ Compatible
- Ericsson footprint compatible


novum
advanced power


MODEL	input voltage	output voltage	output current	output wattage
	(Vdc)	(Vdc)	max (A)	max (W)
NDM2Z-50H	4.5~14	0.6~3.3	50	165

PART NUMBER KEY

 Example part number: **NDM2Z-50HT-AA-002**

 horizontal module
through-hole pins
standard pin configuration
loose parts package option
firmware configuration 002

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RECOMMENDED OPERATING CONDITIONS

$-30^{\circ}\text{C} < T_{P1} < +95^{\circ}\text{C}$, $4.5\text{ V} < V_{in} < 14\text{ V}$, typical measurements made at $V_{in} = 12\text{ V}$, $V_{out} = 1.0\text{ V}$, $I_{out} = I_{max}$, $T_{P1} = 25^{\circ}\text{C}$, $C_{in} = 470\text{ }\mu\text{F}/10\text{ m}\Omega$, $C_{out} = 470\text{ }\mu\text{F}/8\text{ m}\Omega$

INPUT / OUTPUT

parameter	conditions/description	min	typ	max	units
V_{in}	input supply voltage	4.5		14	V
I_{out}	output current	0		50	A
V_{out}	adjustable via resistor or PMBus™ commands	0.6		3.3	V
V_{out} margin	adjustable via PMBus commands	0		110	%
voltage accuracy	over line, load and temperature measured at +S and -S	-1		1	%
voltage set-point resolution	when V_{out} set via PMBus commands	-0.025		0.025	% FS
voltage ripple and noise	$V_{out} = 0.6\text{ V}$		7		mVp-p
	$V_{out} = 1.0\text{ V}$		10		
	$V_{out} = 1.8\text{ V}$		16		
	$V_{out} = 3.3\text{ V}$		25		
ramp-up time	adjustable via PMBus commands	0		200	ms
on time delay	adjustable via PMBus commands	2		500,000	ms
load transient voltage deviation	$I_{out}: 25\% \rightarrow 75\% \rightarrow 25\%$ of I_{max} , $dI/dt = 2\text{ A}/\mu\text{s}$				mV
	$V_{out} = 0.6\text{ V}$		230		
	$V_{out} = 1.0\text{ V}$		230		
	$V_{out} = 1.8\text{ V}$		230		
load transient recovery time ¹	$I_{out}: 25\% \rightarrow 75\% \rightarrow 25\%$ of I_{max} , $dI/dt = 2\text{ A}/\mu\text{s}$				μs
	$V_{out} = 0.6\text{ V}$		80		
	$V_{out} = 1.0\text{ V}$		60		
	$V_{out} = 1.8\text{ V}$		50		
	$V_{out} = 3.3\text{ V}$		25		

Notes: 1. settling to within 3% of V_{out}

POWER / EFFICIENCY

parameter	conditions/description	min	typ	max	units
output power	$V_{out} = 3.3\text{ V} + 10\%$ margin	0		181.5	W
efficiency	$I_{out} = 50\%$ of max	$V_{out} = 0.6\text{ V}$	86.4		%
		$V_{out} = 1.0\text{ V}$	90.7		
		$V_{out} = 1.8\text{ V}$	93.6		
		$V_{out} = 3.3\text{ V}$	95.2		
	$I_{out} = \text{max}$	$V_{out} = 0.6\text{ V}$	79.1		%
		$V_{out} = 1.0\text{ V}$	85.4		
		$V_{out} = 1.8\text{ V}$	90.1		
		$V_{out} = 3.3\text{ V}$	92.9		

POWER CONNECTIONS

symbol	pin	IO type	description
VIN	1A, 1B	Power	Input voltage
GND	2A, 2B	Ground	Power ground
VOUT	3A, 3B	Power	Output voltage

COMMUNICATION CONNECTIONS

symbol	pin	IO type	description
VTRK	4A	Analog	Voltage tracking input
PREF	4B	Ground	Pin-strap ground
+S	5A	Analog	Output voltage positive sense input
-S	5B	Analog	Output voltage negative sense input
SA0	6A	Digital	SMBus address pinstrap
DDC	6B	Digital	Digital-DC Communications bus (equivalent to Ericsson Power GCB)
SCL	7A	Digital	SMBus clock
SDA	7B	Digital	SMBus data
VSET	8A	Digital	Output voltage pin-strap
SYNC	8B	Digital	Synchronization I/O
SALERT	9A	Digital	SPMBus alert
CTRL	9B	Digital	Remote control or enable
PG	10A	Digital	Power good
SA1	10B	Digital	SMBus address pinstrap

For more information and complete data sheets please contact a CUI representative.

REVISION HISTORY

rev.	description	date
0.9	preliminary release	09/10/2012
0.91	misc. updates	09/25/2012

The revision history provided is for informational purposes only and is believed to be accurate.



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