

SERIES: NDM2P-12H | **DESCRIPTION:** AUTO COMPENSATED, DIGITAL DC-DC POL CONVERTER

GENERAL CHARACTERISTICS

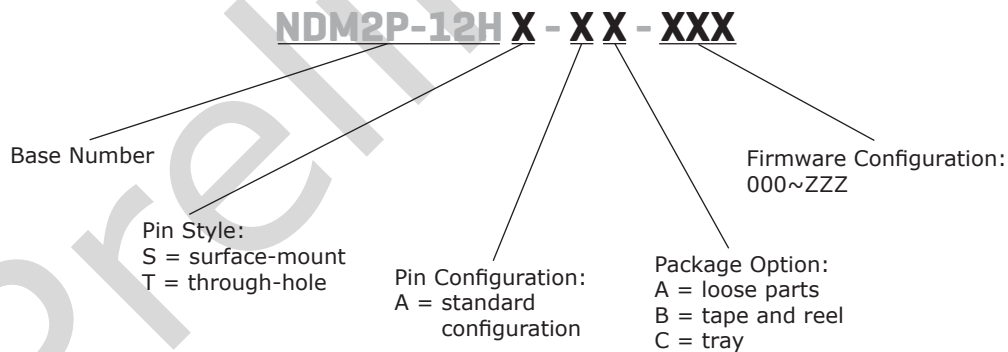
- 4.5~14 V input range
- 0.6~5.0 V programmable output
- voltage tracking
- voltage margining
- active current sharing
- real-time adaptive loop compensation
- voltage/current/temperature monitoring
- synchronization and phase spreading
- remote differential voltage sense
- programmable soft start and soft stop
- fault management

FEATURES

- compact package
horizontal:
21.00 x 12.7 x 7.3 mm
(0.825 x 0.500 x 0.286 in)
vertical (SIP):
26.3 x 7.6 x 15.6 mm
(1.035 x 0.299 x 0.614 in)
- 12 A output
- high efficiency
- auto compensation
- SMBus interface
- PMBus™ Compatible



MODEL	input voltage	output voltage	output current	output wattage
	(Vdc)	(Vdc)	max (A)	max (W)
NDM2P-12H	4.5~14	0.6~5.0	12	60

PART NUMBER KEY


Example part number: **NDM2P-12HT-AA-002**

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

CONTENTS

Recommended Operating Conditions.....	2
Pin Descriptions.....	3

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}^1	input supply voltage	4.5		14	V
I_{out}	output current	0		12	A
V_{out}^1	adjustable via resistor or PMBus™ commands	0.6		5.0	V
V_{out} margin	adjustable via PMBus commands	0.6		5.5	V
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		2.7		mV
voltage ripple and noise	$V_{out} = 0.6\text{ V}$ $V_{out} = 1.0\text{ V}$ $V_{out} = 1.8\text{ V}$ $V_{out} = 3.3\text{ V}$		TBD		mVp-p
ramp-up rate	adjustable via PMBus commands	0.4		10	V/ms
on time delay	adjustable via PMBus commands	10		1,000	ms
load transient voltage deviation	$I_{out}: 25\% \rightarrow 75\% \rightarrow 25\%$ of I_{max} , $dI/dt=2\text{ A}/\mu\text{s}$ $V_{out} = 0.6\text{ V}$ $V_{out} = 1.0\text{ V}$ $V_{out} = 1.8\text{ V}$ $V_{out} = 3.3\text{ V}$			TBD	mV
load transient recovery time ²	$I_{out}: 25\% \rightarrow 75\% \rightarrow 25\%$ of I_{max} , $dI/dt=2\text{ A}/\mu\text{s}$ $V_{out} = 0.6\text{ V}$ $V_{out} = 1.0\text{ V}$ $V_{out} = 1.8\text{ V}$ $V_{out} = 3.3\text{ V}$			TBD	μs

Notes: 1. $V_{in} - V_{out}$ must be greater than 1 V
2. settling to within 3% of V_{out}

POWER / EFFICIENCY

parameter	conditions/description	min	typ	max	units
output power	$V_{out} = 5.0\text{ V} + 10\%$ margin	0		66.0	W
efficiency	$I_{out} = 50\%$ of max $V_{out} = 0.6\text{ V}$ $V_{out} = 1.0\text{ V}$ $V_{out} = 1.8\text{ V}$ $V_{out} = 3.3\text{ V}$			TBD	%
	$I_{out} = \text{max}$ $V_{out} = 0.6\text{ V}$ $V_{out} = 1.0\text{ V}$ $V_{out} = 1.8\text{ V}$ $V_{out} = 3.3\text{ V}$			TBD	%

POWER CONNECTIONS

symbol	pin	IO type	description
VOUT	1	Power	Output voltage
VIN	2	Power	Input voltage

COMMUNICATION CONNECTIONS

symbol	pin	IO type	description
SA1	3	Digital	SMBus address pinstrap 1
SA0	4	Digital	SMBus address pinstrap 0
DSS	5	Digital	Digital Stress Share
SYNC	6	Digital	Synchronization I/O
VTRK	7	Analog	Voltage tracking input
VSET	8	Digital	Output voltage pin-strap
CONFIG	9	Analog	Configuration table selector
-S	10	Analog	Output voltage negative sense input
+S	11	Analog	Output voltage positive sense input
PREF	12	Ground	Pin-strap ground
PG	13	Digital	Power Good
SYSG	14	Digital	System functioning properly
CTRL	15	Digital	Remote control or enable pin
SALERT	16	Digital	SMBus alert
SDA	17	Digital	SMBus data
SCL	18	Digital	SMBus clock

REVISION HISTORY

rev.	description	date
0.7	preliminary release	09/12/2012

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

Preliminary



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