

NXI100 Series

Single output

Input Voltage: 12VDC
of Outputs: Single

Special Features

- Designed for VRM9.0 and VRM9.1 specification
- Low profile: 1.15 inches including mating connector
- Microprocessor voltage identification input
 - 5 Bit VID input
 - 1.10 Vdc to 1.85 Vdc in 25 mV steps
- Up to 50 A/ μ s load transient no load to full load, recovery within 50 μ s
- Democratic current sharing, no need for master/slave configuration
- High efficiency: 87% typical @ $V_{in} = 12\text{ V}$, $V_{out} = 1.5\text{ V}$, $I_{out} = 60\text{ A}$
- Available RoHS compliant
- 2 year warranty



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The NXI100 non-isolated dc-dc converter simplifies the application of Intel Xeon™ or Pentium®4 processors by providing a purpose-designed, point-of-load, power management solution for low-profile applications. Capable of delivering 81 A, and meeting the exceptional transient response requirements of these loads, the converter comes in a versatile, PCB-pluggable form. Artesyn utilizes advanced circuit techniques, component selection and state-of-the-art thermal packaging, to deliver reliable high power density. Multi-phase power conversion provides industry-leading conversion efficiency without adding unnecessary complexity, and NXI100 meets the precise regulation specifications of VRM9.0/9.1 without expensive external components. An active circuit guarantees the current sharing specification is met during static or dynamic loading conditions.

Specifications

All specifications are typical at nominal input, full load at 25°C unless otherwise stated.

OUTPUT SPECIFICATIONS

Voltage adjustability		See table
Output setpoint accuracy	Vout	±0.8%
Ripple and noise (See Note 1)	20 MHz bandwidth	15 mV pk-pk
Transient response peak dev. settling time	(See Note 2)	50 mV 25 µs
Short circuit protection		Continuous current automatic recovery

INPUT SPECIFICATIONS

Input voltage range	12 Vin nominal	11-12.6 Vdc
Input current	Operating No load OUTEN low	13.6 A 300 mA 40 mA max.
UVLO turn ON voltage UVLO turn OFF Voltage		9.9 V typ. 8.5 V typ.
Start-up time	Nominal line	10 ms
OUTEN Logic compatibility ON OFF	Open circuit voltage	Ref. to -input 5 Vdc 0.8 Vdc max.

GENERAL CHARACTERISTICS

Efficiency	1.5 V output @ 60 A 1.7 V output @ 60 A	87% 87%
Switching frequency	Fixed (See Note 3)	990 kHz
Standards		94V-0 flammability rating
Weight		40 g (1.41 oz)
MTBF	Telcordia SR-332	850,000 hours
Mating connector		(See Note 4)

ENVIRONMENTAL SPECIFICATIONS

Maximum temperature shock	Operating	5 °C/10 min.
Temperature shock	Operating Non-operating	10 °C/hour 20 °C/hour
Humidity	Operating Storage	85% RH 95% RH
Altitude	Operating Storage	10,000 feet max. 50,000 feet max.
Shock	Operational Non-operational	30 G 11 ms, half sine wave 50 G 11 ms, half sine wave
Vibration (See Note 5)	Operational and non-operational	0.02 G ² /Hz max.
Electrostatic discharge (See Note 6)	Operating Non-operating	ESD 15 kV ESD 25 kV
Thermal performance (See Note 7)	Operating ambient temperature Non-operating	0 °C to +60 °C -40 °C to +100 °C

Specifications Contd.

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INPUT VOLTAGE	OUTPUT VOLTAGE	OVP	OUTPUT CURRENT (MIN)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION LOAD	MODEL NUMBER ^(9,10)
12 Vdc	1.1-1.85 Vdc	120% of VID setting	0 A	81 A	87%	0.95 mV/A	NXI100-12P1V8CY

TABLE 1: PIN CONNECTIONS

PIN NO.	FUNCTION	PIN NO.	FUNCTION
1	Vin+	62	Vin-
2	Vin+	61	Vin-
3	Vin+	60	Vin-
4	Vin+	59	Vin-
5	Reserved	58	VRM-pres
6	Key	57	VID4
7	VID3	56	VID2
8	VID1	55	VID0
9	Reserved	54	Ishare
10	PWRGD	53	OUTEN
11	Vo sen-	52	Vo sen+
12	Reserved	51	Reserved
13	Vo-	50	Vo+
14	Vo+	49	Vo+
15	Vo-	48	Vo-
16	Vo+	47	Vo+
17	Vo-	46	Vo-
18	Vo+	45	Vo+
19	Vo-	44	Vo-
20	Vo+	43	Vo+
21	Vo-	42	Vo-
22	Vo+	41	Vo+
23	Vo-	40	Vo-
24	Vo+	39	Vo+
25	Vo-	38	Vo-
26	Vo+	37	Vo+
27	Vo-	36	Vo-
28	Vo+	35	Vo+
29	Vo-	34	Vo-
30	Vo+	33	Vo+
31	Vo-	32	Vo-

TABLE 2: VOLTAGE IDENTIFICATION (VID) CODES

VID4	VID3	VID2	VID1	VID0	VDAC
1	1	1	1	1	Output off
1	1	1	1	0	1.100
1	1	1	0	1	1.125
1	1	1	0	0	1.150
1	1	0	1	1	1.175
1	1	0	1	0	1.200
1	1	0	0	1	1.225
1	1	0	0	0	1.250
1	0	1	1	1	1.275
1	0	1	1	0	1.300
1	0	1	0	1	1.325
1	0	1	0	0	1.350
1	0	0	1	1	1.375
1	0	0	1	0	1.400
1	0	0	0	1	1.425
1	0	0	0	0	1.450
0	1	1	1	1	1.475
0	1	1	1	0	1.500
0	1	1	0	1	1.525
0	1	1	0	0	1.550
0	1	0	1	1	1.575
0	1	0	1	0	1.600
0	1	0	0	1	1.625
0	1	0	0	0	1.650
0	0	1	1	1	1.675
0	0	1	1	0	1.700
0	0	1	0	1	1.725
0	0	1	0	0	1.750
0	0	0	1	1	1.775
0	0	0	1	0	1.800
0	0	0	0	1	1.825
0	0	0	0	0	1.850

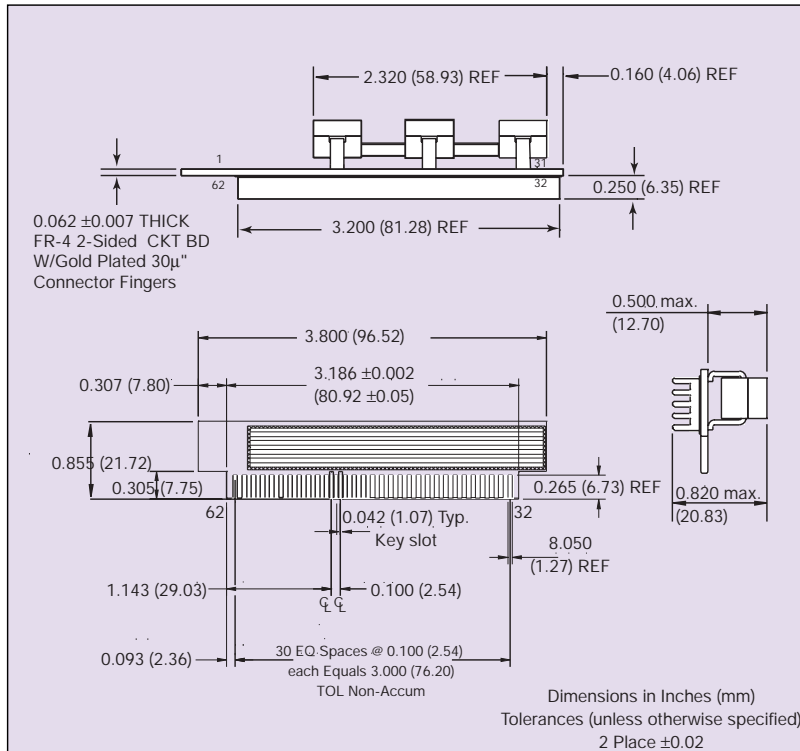


Figure 1: Mechanical Drawing

Notes

- 1 15 mV pk-pk ripple 8 x 560 µF/4 V OSCON and 10 x 4.7 µF/6.3 V MLCC'st on the output. Vin = 12 V, Vout = 1.5 V, Iout = 60 A.
- 2 125 mV peak deviation when slewing load from no load to full load at 50 A/µs. Oscon type low impedance caps required across output.
- 3 Each phase operates at a fixed 330 kHz. Effective fundamental output frequency is 990 kHz / 3 phases each at 330 kHz interleaved.
- 4 Recommended mating connector is AMP 1364125-1 or equivalent.
- 5 From 5 Hz to 20 Hz, maintaining 0.02 G²/Hz from 20 Hz to 500 Hz, all axes.
- 6 Test performed in end use equipment.
- 7 Refer to thermal de-rating curves found in the long form datasheet.
- 8 VID code lower than 1.25 V, use 5 A as minimum load.
- 9 The 'Y' suffix indicates that these parts are TSE RoHS 5/6 (non Pb-free) compliant.
- 10 NOTICE: Some models do not support all options. Please contact your local Artesyn representative or use the on-line model number search tool at <http://www.artesyn.com/powergroup/products.htm> to find a suitable alternative.

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