Rev.03.23.07
nxi100

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/µs load transient no load to full load, recovery within 50 µs
- Democratic current sharing, no need for master/slave configuration
- High efficiency: 87% typical @ Vin = 12 V, Vout = 1.5 V, Iout = 60 A
- Available RoHS compliant
- 2 year warranty

The NXI100 non-isolated dc-dc converter simplifies the application of Intel Xeon(TM) 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 unneccesary 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.

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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.

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

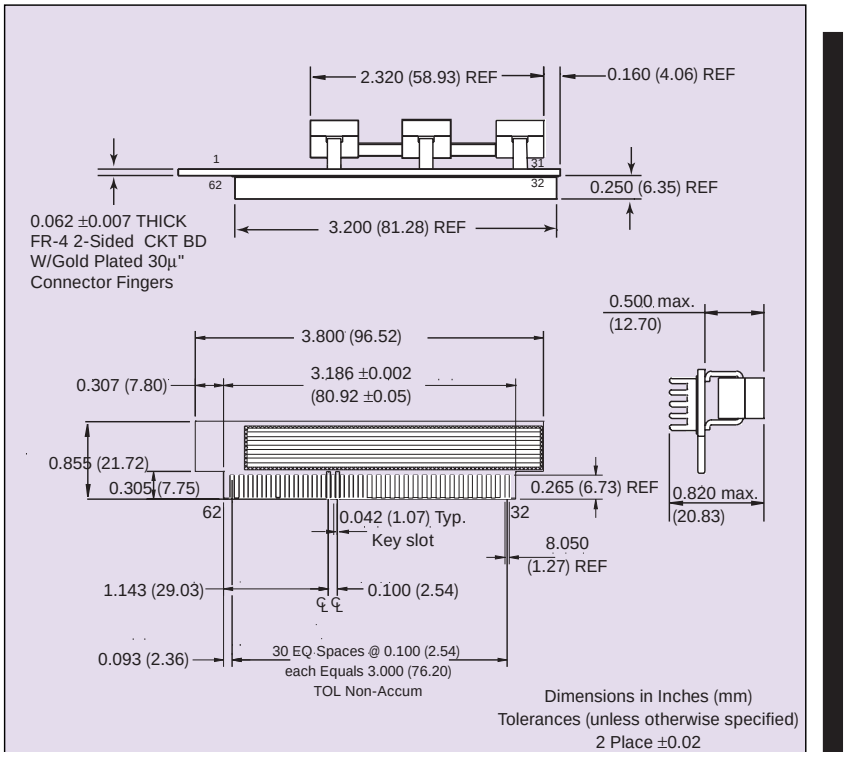

Figure 1: Mechanical Drawing

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 G^2/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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