

NXI150 Series

Single output

Input Voltage: 11 - 12.6VDC
of Outputs: Single

Special Features

- Meets VRM9.1 specification
- 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
- Democratic current sharing, no need for master/slave configuration
- Remote sense for improved load regulation
- Vertical plug-in to standard motherboard connector with or without retention latch
- Available RoHS compliant
- 2 year warranty



Rev.03.28.07
nxi150
1 of 4

The NXI150 non-isolated dc-dc converter is designed to meet the exceptionally fast transient response requirements of today's microprocessors and fast switching logic in a compact size at a very affordable price. Advanced circuit techniques, component selection and placement optimization, state-of-the-art thermal packaging, and Surface Mount Technologies provide a high power density, highly reliable, and very precise voltage regulation system for advanced microprocessors. Multi-phase power conversion techniques allow the NXI converters to lead the industry with regard to conversion efficiency without adding unnecessary complexity. On-board active current sharing circuit guarantees the current sharing specification is met during static and dynamic load conditions.

Specifications

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

OUTPUT SPECIFICATIONS

Voltage adjustability		1.10-1.85 Vdc
Output setpoint accuracy	Vout	±0.8%
Ripple and noise (See Notes 1 and 2)	20 MHz bandwidth	15 mV pk-pk
Transient response peak dev. settling time	See Note 3	50 mV 25 μs
Short-circuit protection		Continuous current limit, foldback automatic recovery

INPUT SPECIFICATIONS

Input voltage range	12 Vin nominal	11.0-12.6 Vdc
Input current	Operation No load Remote OFF	16.2 A max. 250 mA 45 mA max.
UVLO turn ON voltage UVLO turn OFF Voltage		10.45 V typ. 8.55 V typ.
Start-up time	Nominal line	10 ms max.
OUTEN Logic compatibility ON OFF	Open circuit	Ref. to -input >1.8 Vdc <0.8 Vdc

GENERAL CHARACTERISTICS

Efficiency	1.5 V output @ 65 A	85%
Switching frequency	Fixed (See Note 4)	1 MHz
Standards		94V-0 Flammability rating
Weight		70 g (2.46 oz)
MTBF	Telcordia SR-332	1,800,000 hours
Mating connector		(See Note 5)

ENVIRONMENTAL SPECIFICATIONS

Maximum temperature shock	Operating	5 °C/10 min.
Temperature shock	Operating Non-operating	10 °C/hour 20 °C/hour
Humidity (Non-condensing)	Operating Storage	85% RH 95% RH
Altitude	Operating Storage	10,000 feet max. 50,000 feet max.
Shock	Operational and non-operational	50 G 11 ms, half sine wave
Vibration (See Note 6)	Operational and non-operational	0.02 G ² /Hz max.
Electrostatic discharge IEC61000-4-2 (See Note 7)	Operating non-operating	ESD 15 kV ESD 25 kV
Thermal performance (See Note 8)	Operating ambient temperature non-operating	0 °C to +60 °C -40 °C to +100 °C

Specifications Contd.

Rev.03.28.07
nxi150
3 of 4

INPUT VOLTAGE	OUTPUT VOLTAGE	OVP	OUTPUT CURRENT (MIN)	OUTPUT CURRENT (MAX.)	EFFICIENCY (TYP.)	REGULATION LOAD	MODEL NUMBER ^(9,10)
12 Vdc	1.10-1.85 Vdc	120% of VID setting	0 A	81 A	85%	0.95 mV/A	NXI150-12P1V8CY

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	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

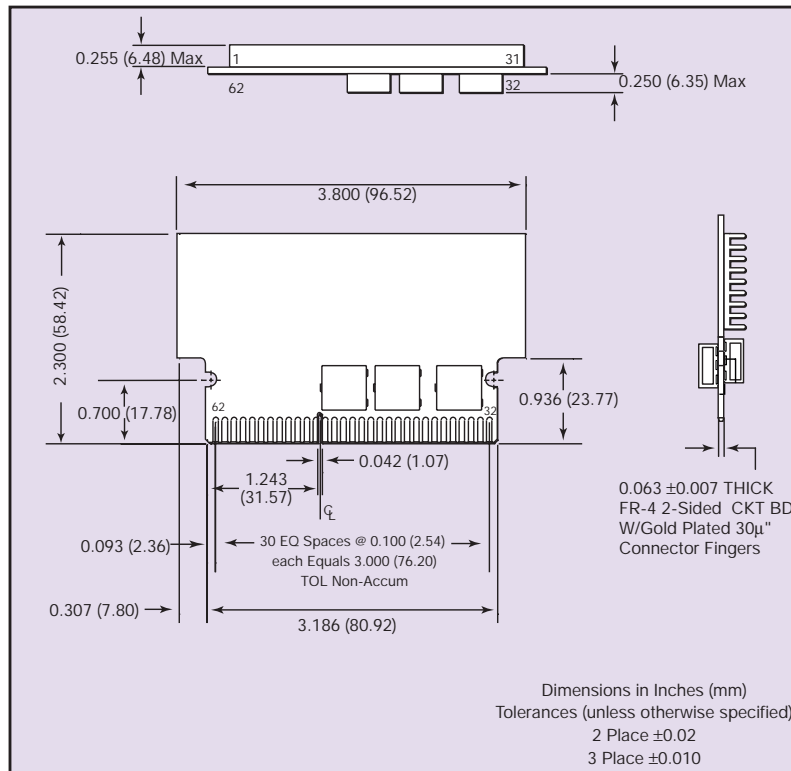


Figure 1: Mechanical Drawing

Notes

- 1 Recommended output capacitance, 8 x 560 μ F/4 V OSCON and 10 x 4.7 μ F/6.3 V MLCC.
- 2 15 mV pk-pk ripple. V_{in} = 12 V, V_{out} = 1.5 V, I_{out} = 65 A.
- 3 125 mV peak deviation when slewing load from no load to full load at 50 A/ μ s. Recommended capacitors (per Note 1) required across output.
- 4 Each phase operates at a fixed 250 kHz. Effective fundamental output frequency is 1 MHz / 4 phases each at 250 kHz interleaved.
- 5 Recommended mating connector is AMP 1489162-1 or equivalent.
- 6 From 5 Hz to 20 Hz, maintaining 0.02 G²/Hz from 20 Hz to 500 Hz, all axes.
- 7 When included in the users system ESD event shall cause no out-of-regulation conditions.
- 8 Please consult your local application support for: Longform Datasheet and Application Note for the de-rating curves
- 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.

(11,12)

Americas

5810 Van Allen Way
Carlsbad, CA 92008
USA
Telephone: +1 760 930 4600
Facsimile: +1 760 930 0698

Europe (UK)

Waterfront Business Park
Merry Hill, Dudley
West Midlands, DY5 1LX
United Kingdom
Telephone: +44 (0) 1384 842 211
Facsimile: +44 (0) 1384 843 355

Asia (HK)

16th - 17th Floors, Lu Plaza
2 Wing Yip Street, Kwun Tong
Kowloon, Hong Kong
Telephone: +852 2176 3333
Facsimile: +852 2176 3888

For global contact, visit:

www.powerconversion.com

technicalsupport@powerconversion.com

While every precaution has been taken to ensure accuracy and completeness in this literature, Emerson Network Power assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions.

Emerson Network Power.

The global leader in enabling business-critical continuity.

- AC Power
- Connectivity
- DC Power
- Embedded Power**
- Inbound Power
- Integrated Cabinet Solutions
- Outside Plant
- Precision Cooling
- Site Monitoring and Services

EmersonNetworkPower.com

Emerson Network Power and the Emerson Network Power logo are trademarks and service marks of Emerson Electric Co.
©2007 Emerson Electric Co.