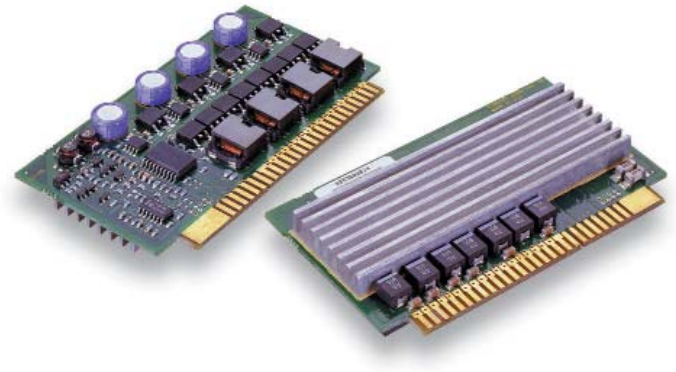
Rev.03.23.07
nxi110

NXI110 Series

Single output, 5 Bit Selectable (Non-Isolated)

Total Power: **110W**
Input Voltage: **11 - 13.2VDC**
# of Outputs: **Single**



Special Features

- Meets VRM9.0 specification High efficiency: 84% typical @ Vin = 12 V, Vout = 1.7 V, Iout = 60 A
- Multi-phase power conversion
- Microprocessor voltage identification input
  - 5 Bit VID input
  - - 1.10 Vdc to 1.85 Vdc in 25 mV steps
- Remote enable pin
- Power good signal
- True double ended differential remote sense
- Democratic current sharing, no need for master/slave configuration
- Up to 50 A/µsec load transient no load to full load, recovery within 50 µsec
- Overcurrent and short circuit protection
- Overvoltage protection with on board fuse
- Vertical plug-in to standard motherboard connector
- No minimum load requirement
- Available RoHS compliant
- 2 year warranty

The NXI110 non-isolated dc-dc converters are 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 unneccesary complexity. VRM9.0 specification compliant without the need for expensive external components. On board active current sharing circuit guarantees the current sharing specification is met both during both static and dynamic load 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
Set point 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)	125 mV 50 µs
Short-circuit protection		Continuous automatic recovery

INPUT SPECIFICATIONS

Input voltage range	12 Vin nominal	11.0-13.2 Vdc
Input current	No load Remote OFF	300 mA 40 mA max.
UVLO turn ON voltage UVLO turn OFF voltage		10.8 V typ. 9.5 V typ.
Start-up time	Nominal line	10 ms
Active high remote ON/OFF Logic compatibility ON OFF	Open-circuit voltage	Ref. to -input 5.0 Vdc 0.8 Vdc max.

GENERAL SPECIFICATIONS

Efficiency	1V7, 1V85 output @ 60 A 1V10 output @ 60 A	84% 76%
Switching frequency	Fixed (See Note 3)	900 kHz
Standards	94V-0 Flammability rating	
Weight		75 g (2.64 oz)
MTBF	Bellcore TR-332	2,000,000 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 and non-operational	50 G 11 ms half sine wave
Vibration (See Note 5)	Operational and non-operational	0.02 G^2/Hz max.
Electrostatic discharge	Operating (See Note 6) Non-operating	ESD 15 kV ESD 25 kV
Thermal performance (See Note 7)	Operating ambient temperature	0 to +60 °C

Specifications Contd.

INPUT VOLTAGE	NOMINAL OUTPUT VOLTAGE	NOMINAL OUTPUT CURRENT	TYPICAL EFFICIENCY	MODEL NUMBER (8,9)
12 Vdc	See Table 2	60 A	84%	NXI110-12P1V8CY

Notes

1 15 mV pk-pk ripple with no external output filtering. Vin = 12 V, Vout = 1.6 V, Iout = 60 A.
2 125 mV peak deviation when slewing load from no load to full load at 50 A/µsec. Oscon type low impedance caps required across output.
3 Each phase operates at a fixed 225 kHz. Effective fundamental output frequency is 900 kHz / 4 phases each at 225 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 Initilization level; ESD event shall cause no out-of-regulation conditions.
7 Requires 400 LFM forced air over the converter. Ensure the thermal reference point (see figure 2) is kept below 95 ºC to maintain the reliability of the converter.
8 The 'Y' suffix indicates that these parts are TSE RoHS 5/6 (non Pb-free) compliant.
9 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.

TABLE 1: PIN CONNECTIONS

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

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

Mechanical Notes

1 All dimensions in INCHES (mm).

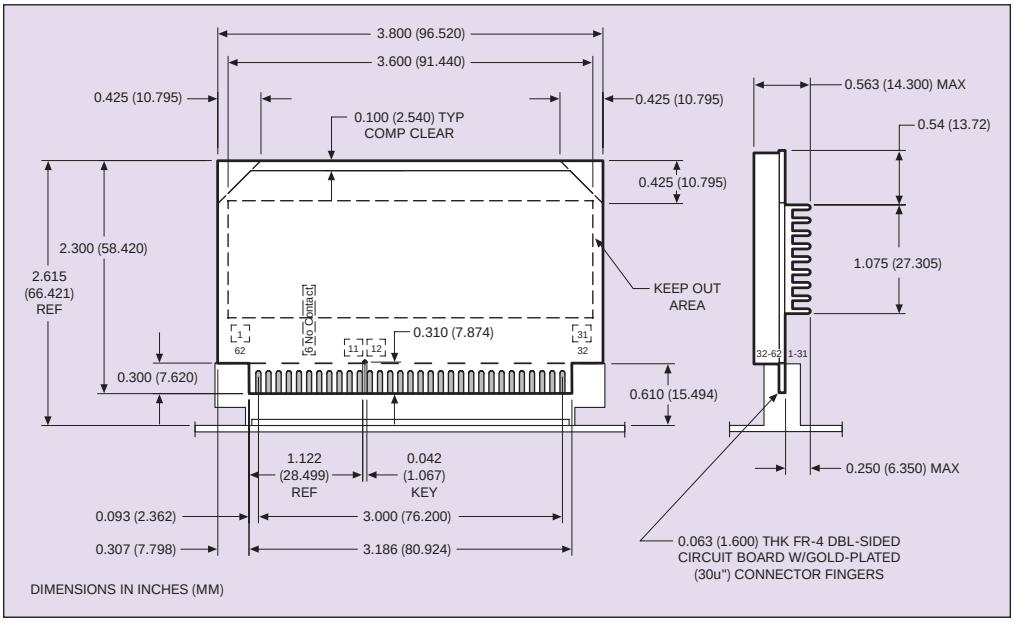

Figure 1: Mechanical Drawing

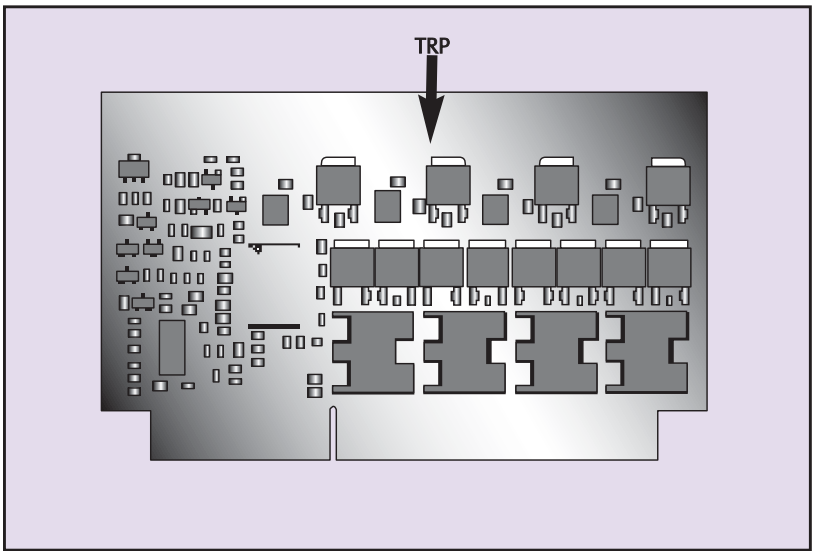

Figure 2:
Thermal Reference Point (TRP) -
Monitor Tab Indicated

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Carlsbad, CA 92008
USA
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Facsimile: +1 760 930 0698

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