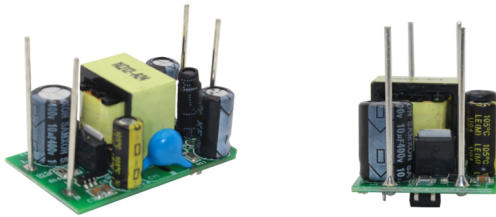
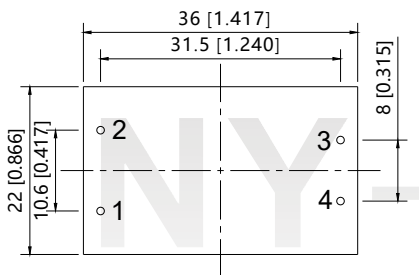
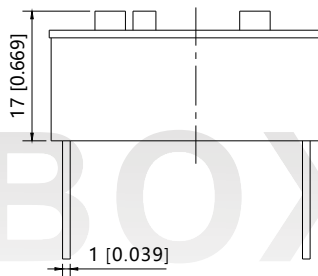


12W AC/DC SMPS
DESCRIPTION


- ★ Wide input : AC85~264V & DC100~375V
- ★ Output short circuit, over-current protection
- ★ Compact size, high power density
- ★ I/O isolation test voltage 2k VAC
- ★ Low ripple & noise
- ★ RoHS Compliant
- ★ Industrial grade, high reliability
- ★ Three-year quality assurance

NQ12-AxxN series is one of Nyboxing's highly efficient green power AC-DC Converter series. They feature ultra-wide wide input range accepting either AC or DC voltage, high efficiency, low power consumption and Class II reinforced insulation.

Dimensions

Front view

Side view

PIN	Function	
	AC IN	DC IN
1	N	DC
2	L	DC
3	+Vo	+Vo
4	-Vo	-Vo

Note:

Unit:mm[inch]

Pin diameter tolerances:±0.20[±0.008]

General tolerances:±0.50[±0.020]

Selection Guide

Part No.	Output Power	Nominal Output Voltage and Current	Efficiency at 230VAC (%) Typ.	Capacitive Load (μF) Max.	Dimensions (L×W×H)
NQ12-A03N	6.6W	3.3V/2000mA	75%	1000μF	36.0x22.0x17.0mm
NQ12-A05N	10W	5V/2000mA	78%	1000μF	
NQ12-A09N		9V/1330mA	80%	820μF	
NQ12-A12N	12W	12V/1000mA	81%	680μF	
NQ12-A15N		15V/800mA	82%	470μF	
NQ12-A24N		24V/500mA	84%	330μF	

Input Specifications

Item	Operating Conditions	Min	Typ	Max
Input Voltage Range	AC input	85VAC	--	264VAC
	DC input	100VDC	--	375VDC

Input Frequency		47Hz	--	63Hz
Stand-by Power Consumption		--	0.1W	--
Input Current	115VAC	--	200mA	--
	230VAC	--	100mA	--

Output Specifications

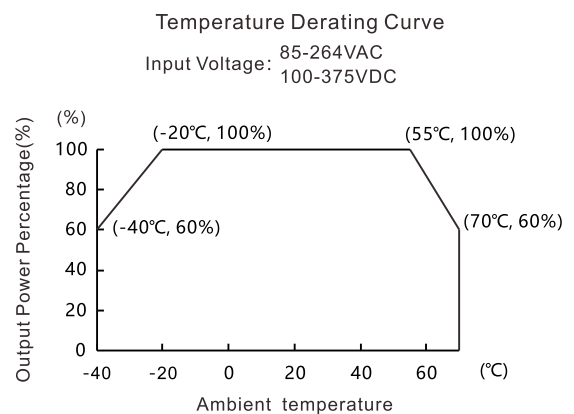
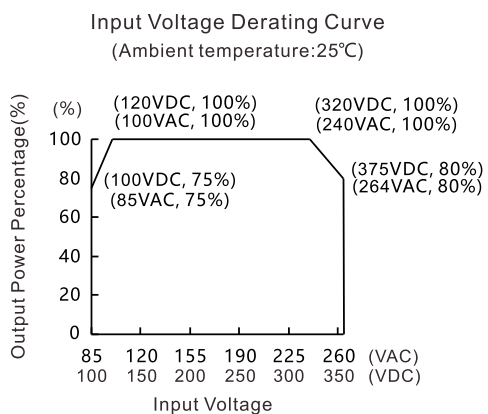
Item	Operating Conditions	Min	Typ	Max
Output Voltage Accuracy		--	±1%	--
Line Regulation	Full load	--	±1.5%	--
Load Regulation	10%~100% Load	--	±2.5%	--
Ripple & Noise*	20MHz bandwidth	3.3V/5V Output	--	150mV
	(peak-to-peak value)	Other output	--	100mV
Short Circuit Protection	Hiccup, continuous, self-recovery			
Over-current Protection	≥110%Io			
Minimum Load	0			
Start delay time	500ms			
Hold-up Time	10ms			
Minimum Load	0%			

Note: * The "parallel cable" method is used for Ripple and noise test, please refer to AC-DC Converter Application Notes for specific information.

General Specifications

Item	Operating Conditions	Min	Typ	Max
Isolation	Input-Output, Test for 1min	--	2000VAC	--
Operating Temperature		-40°C	--	+70°C
Storage Temperature		-40°C	--	+105°C
Storage Humidity		--	--	95%RH
Working frequency		--	65KHz	--
MTBF	MIL-HDBK-217F, 25°C		215,000h	

Product Characteristic Curve



Design Reference

1 Typical application

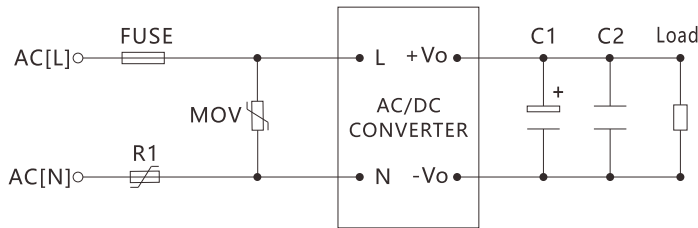


Fig. 1: Typical circuit diagram

Note

We recommend using an electrolytic capacitor with high frequency, and low ESR rating for C1 (refer to manufacturer's datasheet). Choose a Capacitor voltage rating with at least 20% margin, in other words not exceeding 80%. C2 is a ceramic capacitor used for filtering high-frequency noise.

2 EMC compliance recommended circuit

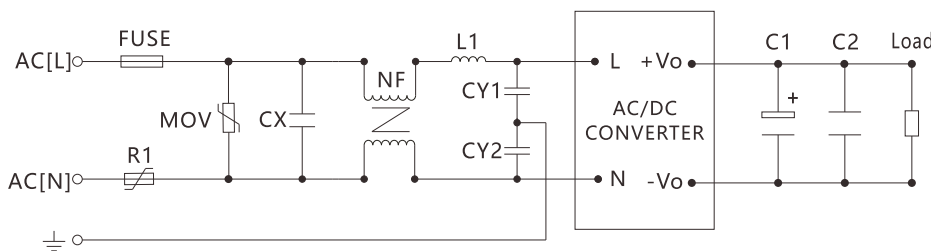


Fig 2: EMC application circuit with higher requirements

3 Input part: parameter recommendation

Component	Recommended value
FUSE	2A/250V slow-blow required
R1	5D-9
MOV	471KD10
CX	0.1 μ F/275VAC
L1	470 μ H
NF	10mH-30mH
CY1,CY2	1000pF/250V

4 Output part: parameter recommendation

Output Voltage	3.3V	5V	9V	12V	15V	24V
C1	220 μ F/10V		220 μ F/25V		68 μ F/35V	
C2	1 μ F/50V					

Safety precautions

- 1.If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25°C, humidity<75% with nominal input voltage and rated output load;
3. All index testing methods in this datasheet are based on our Company's corporate standards;
4. We can provide product customization service, please contact our technicians directly for specific information;
5. For more product information, please visit our official website (www.gzny-boxing.com) or email us (sales@gzny-boxing.com) .