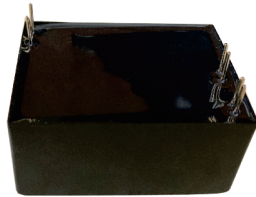
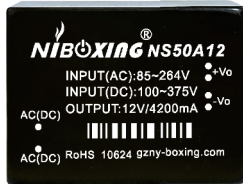


50W AC/DC SMPS

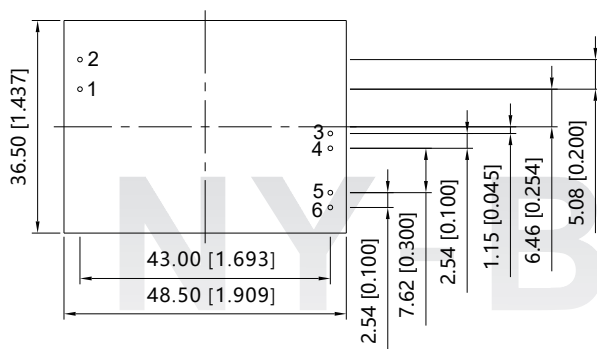
DESCRIPTION



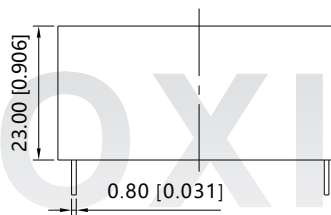
- ★ Wide input voltage: 85-264VAC/100-375VDC
- ★ High efficiency, high power density, regulated output
- ★ PCB double in-line mounting method/DIP
- ★ Output Voltage Accuracy $\pm 1\%$
- ★ Output over-current and short circuit
- ★ Industrial-grade product design, small size

NS50Axx 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



Bottom view



Front view

PIN	Pin definition	
	AC input	DC input
1	AC	DC
2	AC	DC
3	-Vo	-Vo
4	-Vo	-Vo
5	+Vo	+Vo
6	+Vo	+Vo

Concentrate:
 Dimension units:mm[inch]
 Pin diameter tolerance: $\pm 0.20[\pm 0.008]$
 Other dimensional tolerances: $\pm 0.50[\pm 0.020]$

Selection Guide

Part No.	Output Power	Nominal Output Voltage and Current	Efficiency at 230VAC (%) Typ.	Capacitive Load (μ F) Max.	Dimensions (L×W×H)
NS50A03	26.4W	3.3V/8000mA	80%	2000 μ F	48.5x36.5x23.0mm
NS50A05	40W	5V/8000mA	83%	2000 μ F	
NS50A09		9V/5600mA	85%	2000 μ F	
NS50A12		12V/4200mA	86%	2000 μ F	
NS50A15	50W	15V/3300mA	87%	2000 μ F	
NS50A24		24V/2100mA	88%	1000 μ F	
NS50A32		32V/1560mA	88%	1000 μ F	

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	--	900mA	--
	230VAC	--	450mA	--

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(peak-to-peak value)	--	150mV	--
Short Circuit Protection	Hiccup, continuous, self-recovery			
Over-current Protection	≥ 110%Io			
Minimum Load		0	--	--
Start delay time		--	500ms	--
Hold-up Time		--	10ms	--

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

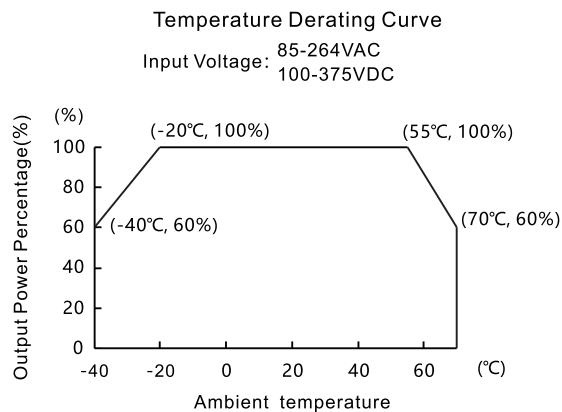
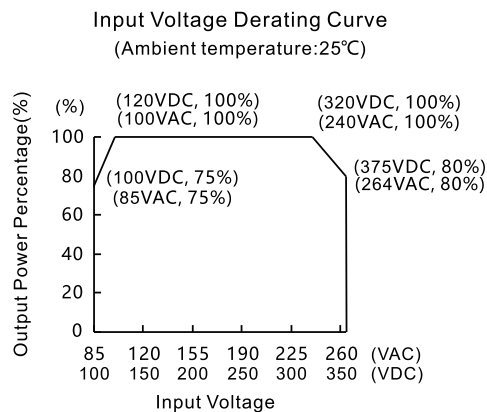
General Specifications

Item	Operating Conditions	Min	Typ	Max
Isolation	Input-Output, Test for 1min	--	3000VAC	--
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	
Casing Material	Plastic Case			

EMC Characteristic

EMC Characteristic	Testitem	Testingstandard
EMI	CE	EN 55032:2015 CLASSB (Application Circuit 2)
	RE	EN 55032:2015 CLASSB (Application Circuit 2)
	Voltage flicker	EN 61000-3-3:2013 (Application Circuit 2)
EMS	ESD	EN 61000-4-2:2009 Contact ±4KV Air ±8KV (Application Circuit 2)
	RS	EN 61000-4-3:2006+A1:2008+A2:2010 (Application Circuit 2)
	EFT	EN 61000-4-4:2012 (Application Circuit 2)
	Surge	EN 61000-4-5:2014 (Application Circuit 2)
	CS	EN 61000-4-6:2014 (Application Circuit 2)
	DIP	EN 61000-4-11:2017 (Application Circuit 2)

Product Characteristic Curve



Design Reference

1 Typical application

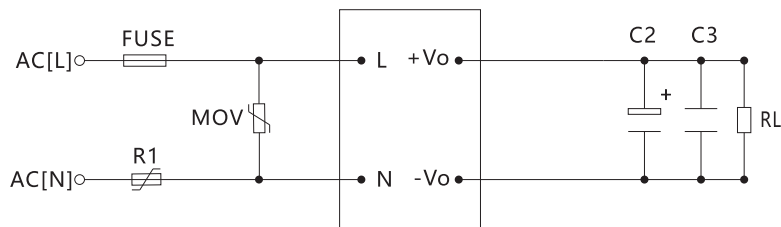


Fig. 1: Typical circuit diagram

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

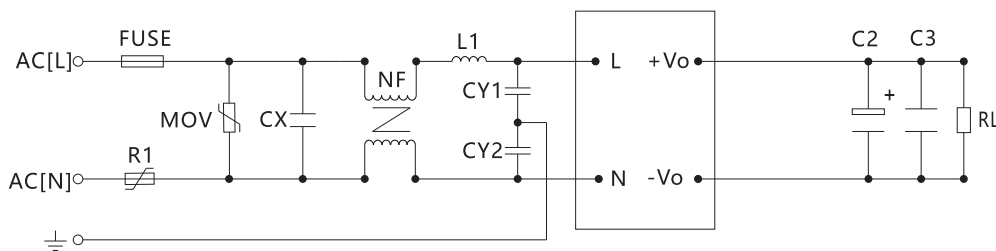


Fig 2: EMC application circuit with higher requirements

3 Input part: parameter recommendation

Component	Functions	Recommended value
FUSE	When the module is abnormal, the fuse and the fault will be cut off	3.15A/250VAC slow-blow required
R1	Inrush current is suppressed	5D-9
MOV	Absorbs lightning surges	471KD10
CX	Suppression of differential mode interference	0.33μF/275VAC
L1		330μH
NF	Suppress common-mode interference	10mH-30mH
CY1,CY2		1000pF/250V

4 Output part: parameter recommendation

Output Voltage	5V	9V	12V	15V	24V	32V
C2	1000μF/10V	680μF/25V			470μF/35V	220μF/50V
C3	1μF/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) .