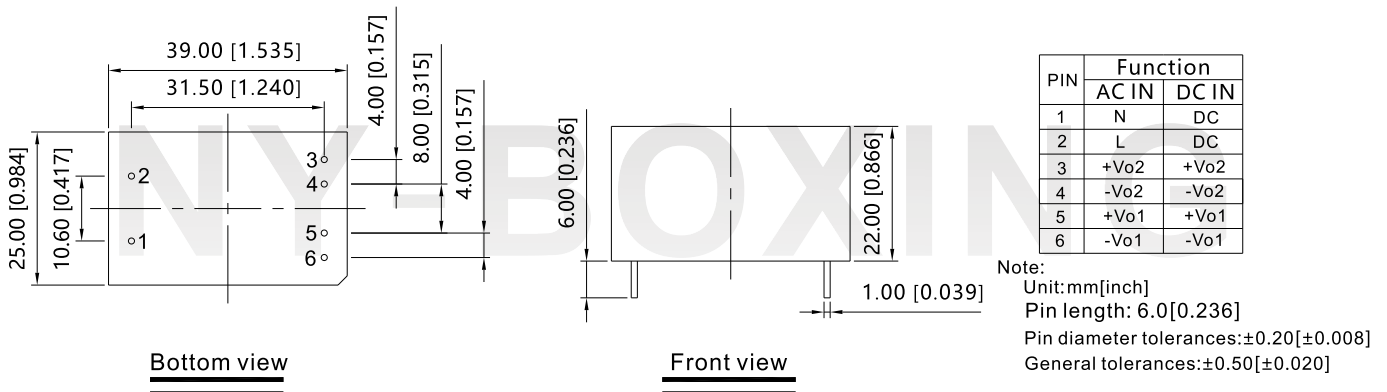


12W AC/DC SMPS
DESCRIPTION


- ★ Wide input : AC85~264V & DC100~375V
- ★ Output short circuit, over-current protection
- ★ Compact size, high power density
- ★ I/O isolation test voltage 3k VAC
- ★ Low ripple & noise
- ★ RoHS Compliant
- ★ Industrial grade, high reliability
- ★ Three-year quality assurance

NQ12-Bxx 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

Selection Guide

Part No.	Output Power	Nominal Output Voltage and Current		Efficiency at 230VAC (%) Typ.	Capacitive Load (μF) Max.	Dimensions (LxWxH)
		Vo1/Io1	Vo2/Io2			
NQ12-B0512	12W	5V/1200mA	12V/500mA	70%	1000μF	39.0×25.0×22.0mm
NQ12-B0515		5V/1200mA	15V/400mA	72%	1000μF	
NQ12-B0524		5V/1200mA	24V/250mA	75%	1000μF	
NQ12-B1212		12V/500mA	12V/500mA	70%	680μF	
NQ12-B1215		12V/500mA	15V/400mA	72%	680μF	
NQ12-B1224		12V/500mA	24V/250mA	75%	680μF	

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		--	0.2W	--

Input Current	115VAC	--	230mA	--
	230VAC	--	115mA	--

Output Specifications

Item	Operating Conditions	Min	Typ	Max	
Output Voltage Accuracy			±3%		
Line Regulation	Full load	Primary output	--	±1%	--
		Secondary output	--	±3%	--
Load Regulation	10%~100% Load	Single output	--	±3%	--
		Dual output (balanced load) ^①	--	±10%	--
Ripple & Noise ^②	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		--	1s	--	
Hold-up Time		--	20ms	--	

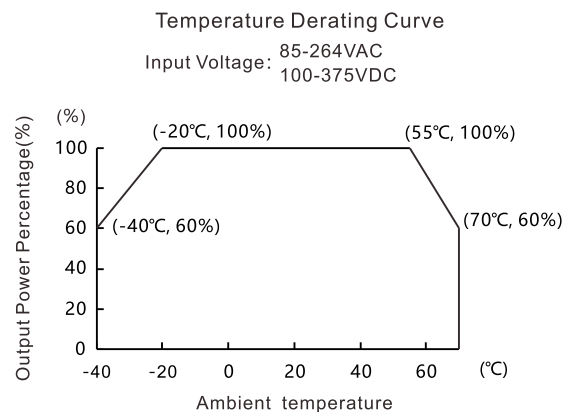
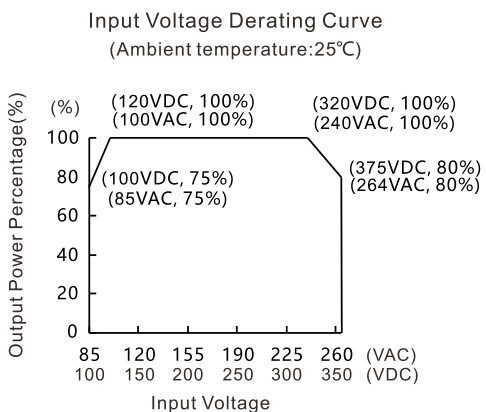
Note:①The balanced load is that the output load of the primary output and the secondary output changes in the same proportion.

②The “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	Black flame-retardant and heat-resistant plastic (UL94-V0)			

Product Characteristic Curve



Design Reference

1 Typical application

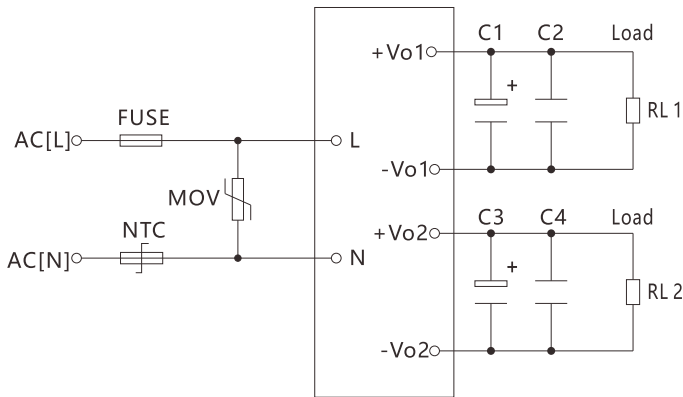


Fig. 1: Typical circuit diagram

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

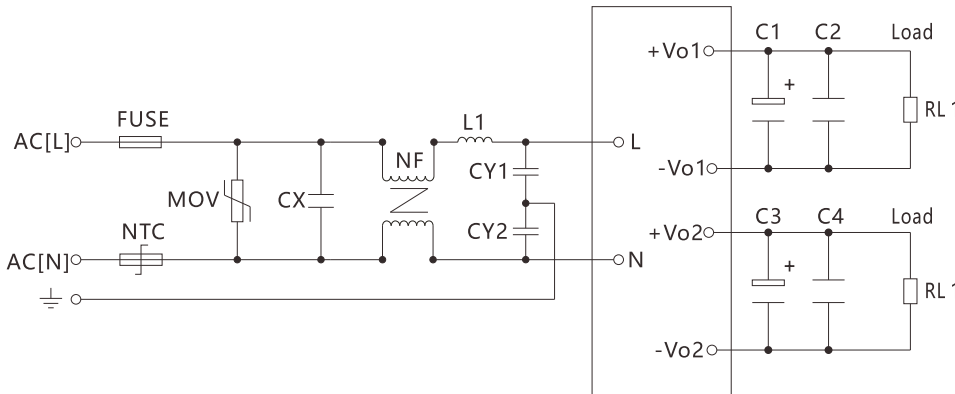


Fig 2: EMC application circuit with higher requirements

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	330 μ H
NF	10mH-30mH
CY1,CY2	1000pF/250V

4 Output part: parameter recommendation

Output Voltage	5V	12V	15V	24V
C1,C3	680 μ F/10V	220 μ F/25V	220 μ F/25V	100 μ F/35V
C2,C4	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 $T_a=25^{\circ}\text{C}$, 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) .