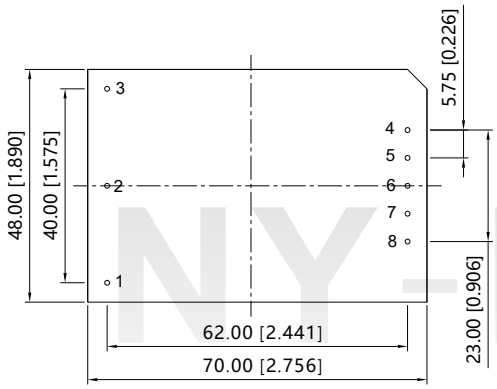
20W AC/DC SMPS

DESCRIPTION

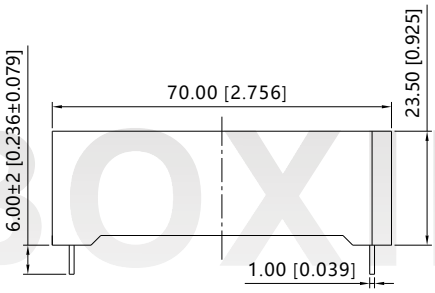
- ★ Wide input AC85~264V & DC100~375V
- ★ Output short circuit, over-current protection
- ★ Compact size, high power density
- ★ I/O isolation test voltage 3k VAC
- ★ Low ripple & noise
- ★ RoHS Compliant
- ★ Industrial grade, high reliability
- ★ Single output, double output, positive and negative output

NR20-Txxxx 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	Funtion
1	FG
2	N
3	L
4	+Vo2
5	COM
6	-Vo2
7	+Vo1
8	-Vo1

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)
		Vo1/Io1	Vo2/Io2			
NR20-T0512	20W	5V/2000mA	±12V/200mA	74%	2000μF	70.0×48.0×23.5mm

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	--	420mA	--
	230VAC	--	210mA	--

Output Specifications

Item	Operating Conditions		Min	Typ	Max
Output Voltage Accuracy	Primary output		--	±3%	--
	Secondary output		--	±10%	--
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 & Noise②	20MHz bandwidth (peak-to-peak value)		--	100mV	--
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.

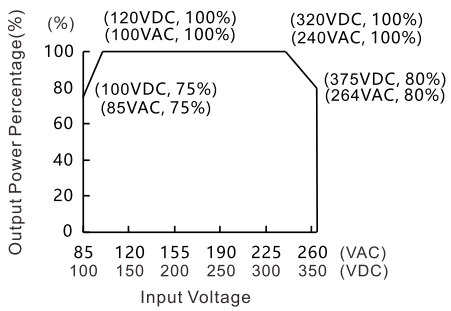
②The "parallel cable" method is used for Ripple and noise test, please refer to AC-DC Converter Application Notes for specific information.

General Specifications

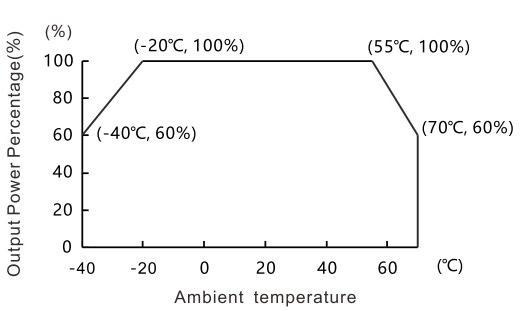
Item	Operating Conditions	Min	Typ	Max
Isolation	Electric Strength Test for 1min	--	3000VAC	--
Operating Temperature		-40℃	--	+70℃
Storage Temperature		-40℃	--	+105℃
Storage Humidity		--	--	95%RH
Working frequency		--	65KHz	--
MTBF	MIL-HDBK-217F, 25℃		215,000h	
Casing Material	Black flame-retardant and heat-resistant plastic (UL94-V0)			

Product Characteristic Curve

Input Voltage Derating Curve
(Ambient temperature:25℃)



Temperature Derating Curve
Input Voltage: 85-264VAC
100-375VDC



Design Reference

1 Typical application

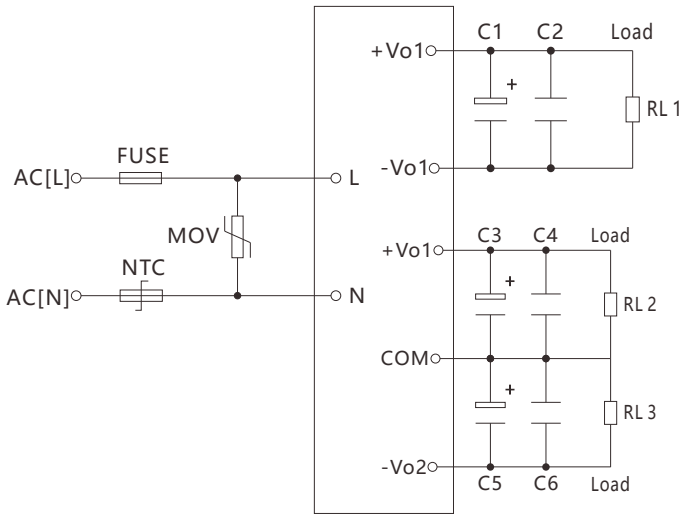


Fig. 1:typical circuit diagram

Note

We recommend using an electrolytic capacitor with high frequency, and low ESR rating for C1 (refer to manufactur-e'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

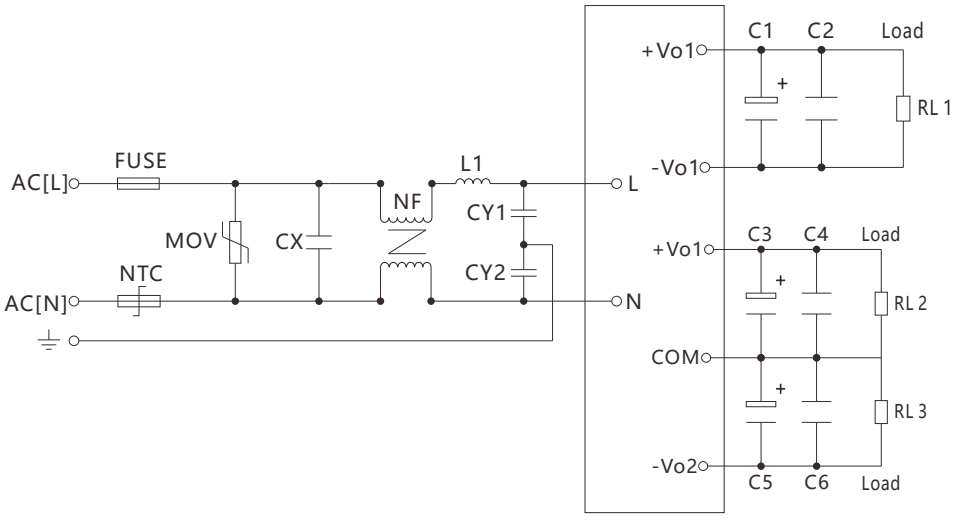


Fig. 2:EMC application circuit with higher requirements

3 Input part: parameter recommendation

Component	Recommended value
FUSE	3.15A/250VAC,slow-blow required
NTC	5D-9
MOV	471KD10
CX	0.33μF/275VAC
L1	330μH
NF	10mH-30mH
CY1,CY2	1000pF/250V

4 Output part: parameter recommendation

Number	C1	C3,C5	C2,C4,C6
Parameter	680μF/10V	220μF/25V	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℃, 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).