

**YAS100-48-N Series AC-DC Power Modules**

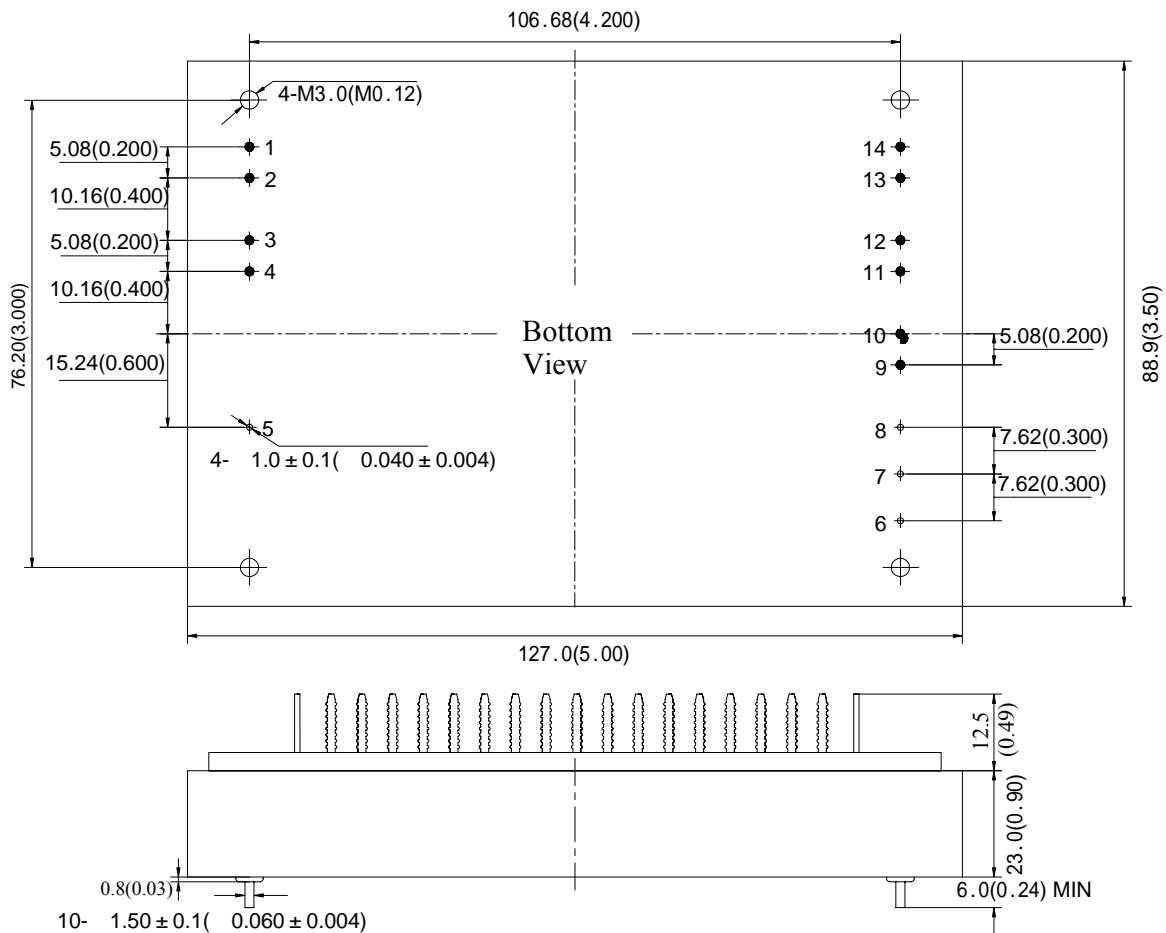
**165Vac-265Vac Input, 48V/2.083A Output, Encapsulated Aluminum case**

**Features**

- Industry Size 127.0mm×88.9mm×23.0mm
- Universal Input Range 165Vac to 265Vac
- 1500Vac Isolation Voltage ( input to output )
- 125kHz Switching Frequency
- Short Circuit Protection , Auto Recovery
- Operating Case Temperature: -25 to 85
- 100% Burn-in
- 2-year warranty



**Outline Diagram**



Pin.	Symbol	Description	Pin.	Symbol	Description
1、 2	L	AC Input, Live Line	8	+S	Positive Remote Sense
3、 4	N	AC Input, Neutral Line	9、 10	NC	No Connection
5	FG	Safety Ground	11、 12	-Vo	Negative Output Voltage
6	-S	Negative Remote Sense	13、 14	+Vo	Positive Output Voltage
7	TRIM	Output Voltage Adjust			

Case material : Black , Aluminum      Pins material : Copper, tin-cerium plating  
 Notes :All dimensions in mm (inches)    Tolerances :X.X±0.5 (X.XX±0.02)    X.XX±0.25 (X.XXX±0.010)

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**Specifications**

Unless otherwise specified, all values are given at: 25 °C, one standard atmosphere pressure, pure resistive load, and 220Vac input voltage.

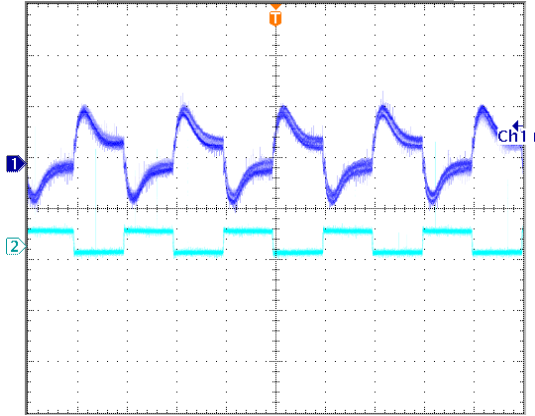
Model		YAS100-48-N
Max Output Wattage (W)		100
<b>Input</b>	Voltage (V)	AC: 165 ~ 265; DC: 200 ~ 375
	Frequency (Hz)	45 ~ 65
	Start-up Delay Time (ms)	21 typ.
<b>Output</b>	Output Voltage (V)	47.52 ~ 48.48
	Output Current max.(A)	2.083
	Voltage Accuracy (%)	±1 max.
	Line Regulation (%)	±0.2 max.
	Load Regulation (%)	±0.5 max.
	Transient Response Recovery Time(μs)	200 max.
	Transient Response Voltage Deviation (mV)	±1440 max.
	Ripple and Noise (mV)	200 max.
	Capacitive Load (μF)	470 max.
	Rise Time (ms)	8.5 typ.
<b>Protection</b>	Output Short-circuit Protection	Hiccup mode, automatic recovery
<b>Isolation</b>	Input- Output (Vac)	1500
<b>Environment</b>	Operating Case Temperature ( °C )	-25 ~ 85
	Storage Temperature ( °C )	-40 ~ 105
	Humidity (%RH)	90 max. , non-condensing
	Temperature Coefficient (%/ °C )	±0.1 max.
<b>General</b>	MTBF(h)	3×10 <sup>5</sup> Refer to BELLCORE TR-332,Tc=25
	Switching Frequency (kHz)	125 typ.
	Efficiency (min). (%)	88 typ. ( 220 Vac, I <sub>o,nom</sub> )
	Isolation Resistance (MΩ)	100 min. (500Vdc , 90%RH)
	Manual Soldering ( °C )	425 max., 5s max.
	Wave Soldering ( °C )	260 max., 10s max.
	Weight (g)	606 typ.
<b>Notes</b>	1. When “%” used to denote the output voltage deviation, the rated output voltage is referred. 2. Peak to peak Ripple & Noise are measured at 20MHz of bandwidth.	

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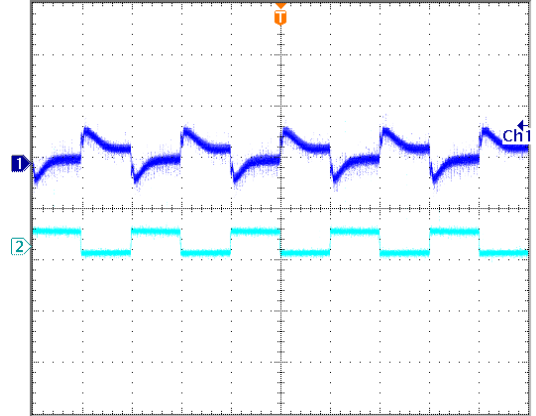
**Characteristic Curves**

**Load Transient Response**



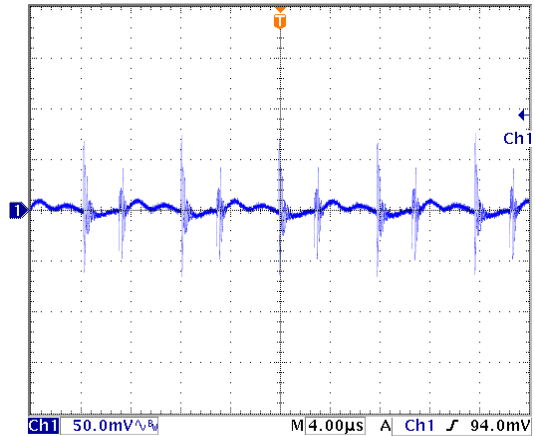
Load change: 25% ~ 50%  
 ~ 25%  $I_{o,nom}$ , 0.1A/ $\mu$ s  
 $V_{in}$ =220Vac  
 Trace1: 100mV/div  
 Trace2: 0.8A/div  
 Timescale: 1ms/div

**Load Transient Response**

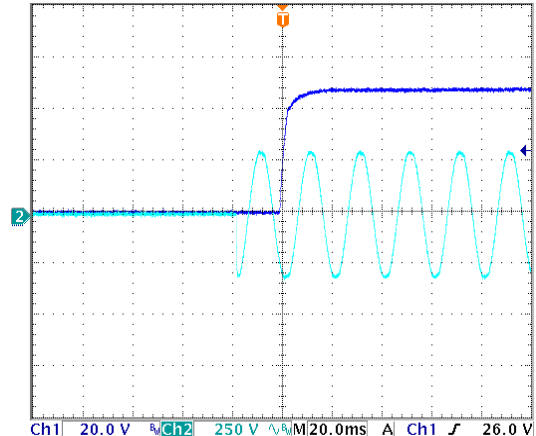


Load change: 50%~75%  
 ~ 50%  $I_{o,nom}$ , 0.1A/ $\mu$ s  
 $V_{in}$ =220Vac  
 Trace1: 100mV/div  
 Trace2: 0.8A/div  
 Time scale: 1ms/div

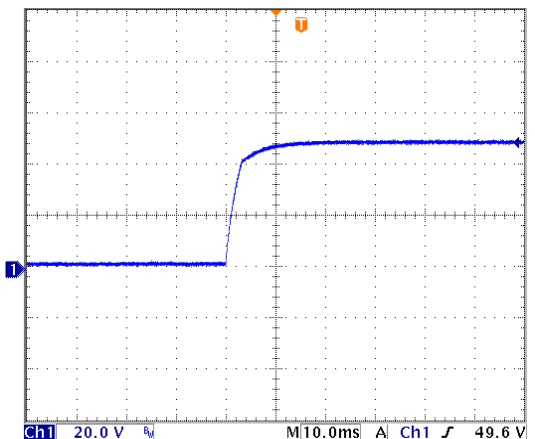
**Output Ripple & Noise**



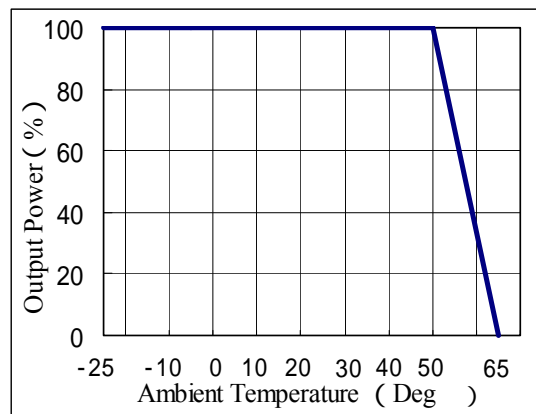
**Start-up Delay Time**



**Rise Time**



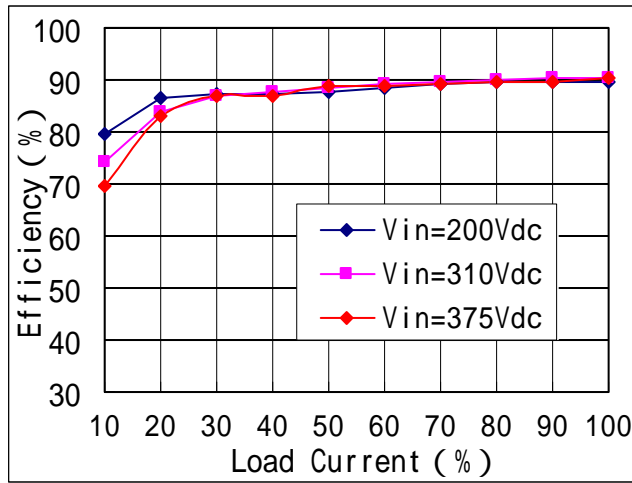
**Derating**



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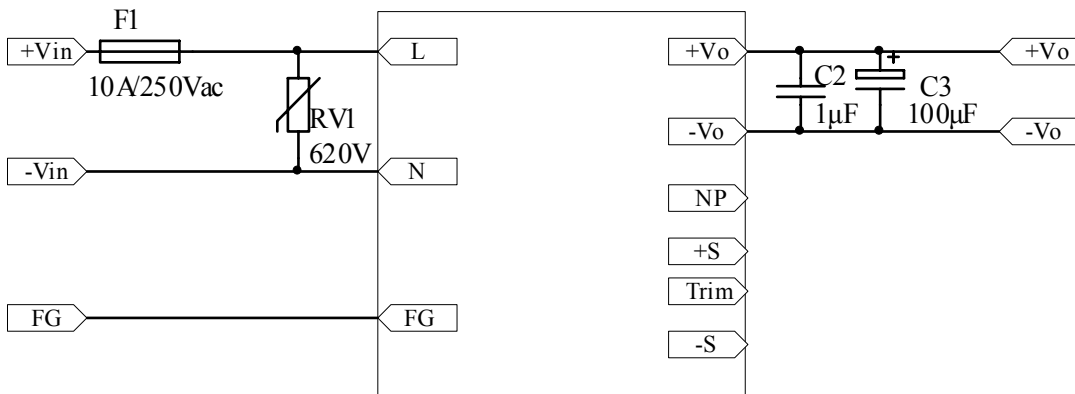
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**Efficiency**



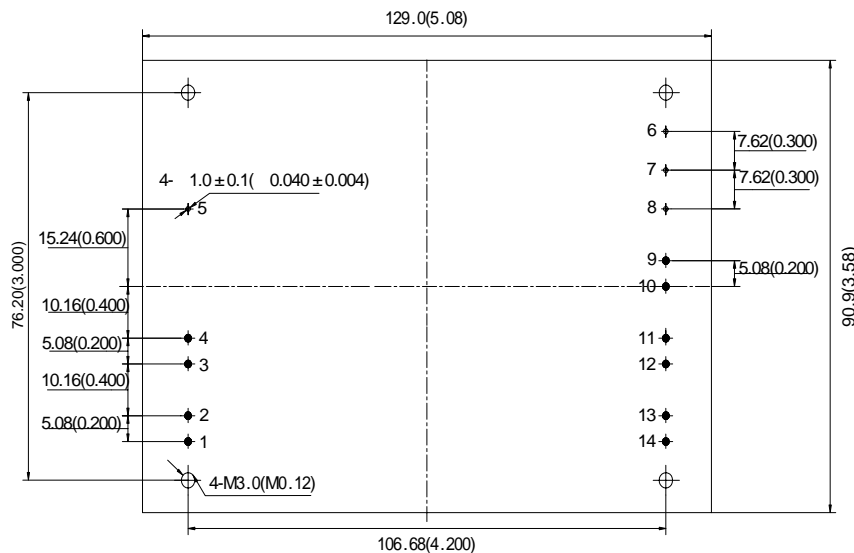
**Design Considerations**

**Basic Connection**



- Notes : 1.The pins of L、 N lines should be connected to the AC power outlet.
- 2.Please refer the instruction followed for further information.

**Recommended Layout**



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No.	Recommendation & Notes
Pad Design	Pad hole: 1.2mm, pad diameter including hole: 2.5 mm
Airflow Direction	The plastic case also is considered heat sink. Advised not to put flat surface down after mounted
Safety	Isolated module, care to the spacing between input and output
Electrical	The Vin(-) and Vo(-) planes should be placed under of the module separately. Avoid routing sensitive signal or high disturbance AC signal under the module

**Thermal Consideration**

The converters operate in a variety of thermal environments; however, sufficient cooling should be provided to ensure reliable operation of the unit. Heat is removed by conduction, convection and radiation to the surrounding environment.

When ambient temperature is higher than the permitted operating, the derating curves should be referred or external heat dissipation measures. Forced air cooling or heatsink, should be used. The air tunnel should be considered for forced air cooling, to avoid heated air be hindered or forming swirl.

**Safety Consideration**

The module, as one component for the end user, should be installed into the equipment, and all the safety considerations are achieved under certain condition. It is required to meet safety requirements in the system design. The module output is considered SELV, and the expected input is considered AC mains.

To avoid fire and be protected when short circuit occurred, it is recommended that a fast blow fuse with rating no less than 2.0A(Inrush current suppression circuit is required for greater filter capacitance at input terminal, or it will result in the disoperation of the fuse. ) .

**Series and Parallel Operation**

The modules should not be paralleled directly to increase power, but they can be paralleled each other through o-ring switches or diodes. Make sure that every module's maximum load current should not exceed the rated current at anytime.

The modules can operate in series. To prevent against start-up failure due to start up time difference, SBD with low voltage difference can be paralleled at the output pins(SBD negative terminal connect to the positive pin of the output) for each module.

**Cleaning Notice**

The converter case is not a hermetically-sealed construction, a sufficient drying process is required after the converter cleaning, make sure the liquid congregated is removed, or it will damage the converter or degradation of performance.

After surface treatment, the appearance of the converter may be affected by the organic solvent, protection measures should be taken before cleaning when appearance is concerned.

**Delivery Package Information**

Package material is multiple wall corrugated ,internal material is anti-static foam, it's surface resistance is from  $10^5 \Omega$  to  $10^{12} \Omega$ . Tray capacity: 1×2=2 PCS/box,Tray weight: 1.3kg; Carton capacity:15×2=30 PCS,Carton weight:20.0kg.

**Quality Statement**

The modules are manufactured in accordance with ISO 9001 system requirements, in compliant with YD/T1376-2005, and are monitored 100% by auto-testing system, 100% burn in.

The warranty for the modules is 2-year.

**Contact Information**

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