2025/08/18(A/2)

AH20-20Sxx Series

AC-DC Converter | 20W | High reliability type | DIP | 4000VAC | 85～265VAC

Features

- Universal Input: 85～265VAC
- Operating temperature range: -40℃ ～ +85℃
- Isolation voltage: 4000VAC
- High efficiency: up to 86%(typ.)
- EMI Class B without additional components
- Input undervoltage, Output short circuit, Over current protection
- Designed to meet IEC/EN/BS EN/UL 62368, IEC/EN 61558

Product description

The AH20-20Sxx series is one of BETTPOWER's compact size power converter. It features universal input range 85～265VAC , low power consumption, high efficiency, high reliability. It offers good EMC performance compliant to IEC/EN/BS EN/UL 62368. The converters are widely used in industrial, office and civil applications. For extremely harsh EMC environment, we recommend using the application circuit shown in Design Reference of this datasheet.

Selection Guide

Certification	Part No.	Input Voltage (VAC)	Output Power (W)	Output Voltage (VDC)	Output Current Max.(mA)	Full Load Efficiency % (230VAC,typ.)	Capacitive Load Max.(μF)
EN pending	AH20-20S05	85～265	20	5	4000	83	8000
	AH20-20S12	85～265	20	12	1667	83	4500
	AH20-20S15	85～265	20	15	1334	84	4000
	AH20-20S24	85～265	20	24	833	86	1000

Note：

1. All the above data were tested within the parameter range of typical application circuits.
2. The product images are for reference only. Please refer to the actual product for details.

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Voltage Range	AC input	85	--	265	VAC
	DC input	100	--	375	VDC
Input Current	110VAC	--	--	0.20	A
	220VAC	--	--	0.15	A
Input Frequency		47	--	63	Hz
Recommended External Input Fuse		2A/300V, slow-blow, required			
Hot Plug		不支持			

Output Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy		--	±2.0	--	%
Line Regulation	Full load	--	±0.5	--	%
Load Regulation	10% ～ 100% load	--	±1.0	--	%
Ripple & Noise*	20MHz bandwidth (peak-to-peak value), 10% ～ 100% load	--	50	100	mVp-p
Temperature Coefficient	Full load	--	±0.02	--	%/℃
Short Circuit Protection		Continuous, Self-Recovery			

Note: Ripple & noise are measured at 20MHz of bandwidth with a 10uF electrolytic capacitor and a 1uF ceramic capacitor connected inparallel at the output.

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Isolation Voltage	Input-output, test time 1 minute, leakage current less than 1mA	4000	--	--	VAC
Operating Temperature	See the following figure: power derating curve	-40	--	85	℃
Storage Temperature		-55	--	125	℃
Soldering Profile	Soldering point distance from shell 1.5mm		260	300	℃
Safety Standard	Product design conforms to IEC/EN/BS EN/UL 62368, IEC/EN 61558				
Safety Class		CLASS I			
MTBF	MIL-HDBK-217F@25℃	>2000Kh			

Mechanical Specifications

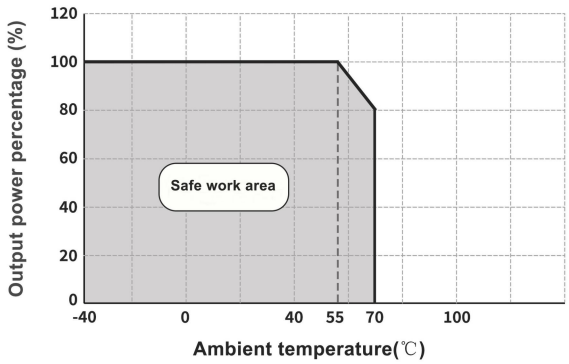
Case Material	Black plastic, flame-retardant and heat-resistant (UL94V-0)
Package Dimensions	70.00 * 48.00 * 23.50mm
Weight	180g(typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

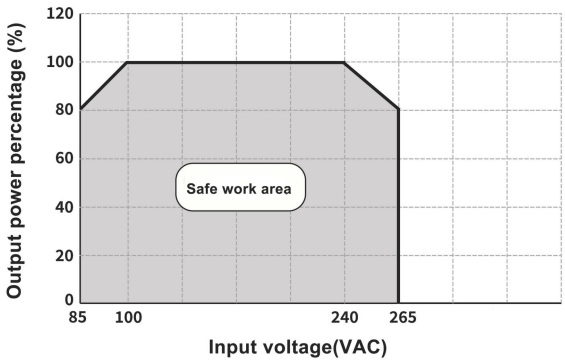
EMI	CE	CISPR32/EN55032 CLASS B	
	RE	CISPR32/EN55032 CLASS B	
EMS	ESD	IEC/EN61000-4-2 Contact ±6KV /Air ±8KV	perf. Criteria B
	RS	IEC/EN61000-4-3 10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4 ±2KV	perf. Criteria B
		IEC/EN61000-4-4 ±4KV （EMC Solutions - Recommended Circuit）	perf. Criteria B
	Surge	IEC/EN61000-4-5 line to line ±1KV/line to ground ±2KV	perf. Criteria B
		IEC/EN61000-4-5 line to line ±2KV/line to ground ±4KV （EMC Solutions - Recommended Circuit）	perf. Criteria B
	CS	IEC/EN61000-4-6 10Vr.m.s	perf. Criteria A
	PFMF	IEC/EN61000-4-8 10A/m	perf. Criteria A
	Voltage dip, short interruption and voltage variation	IEC/EN61000-4-11 0%, 70%	perf. Criteria B

Product Characteristic Curve

Temperature Derating Curve

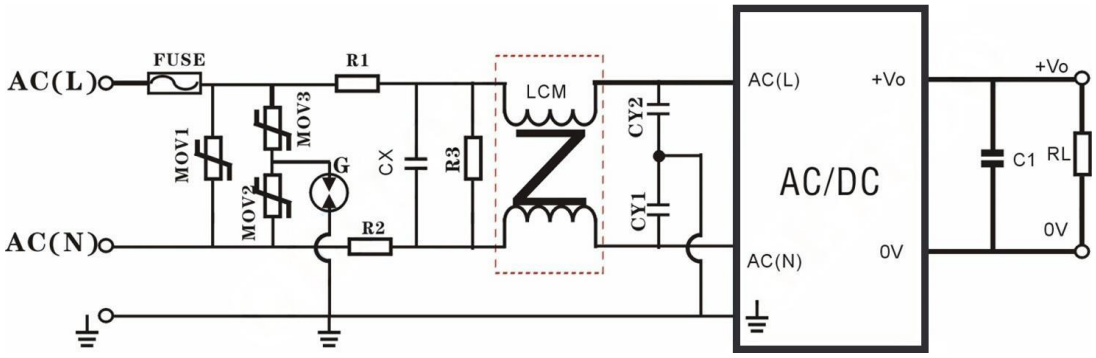


Input voltage Derating Curve



Design Reference - EMC Solutions - Recommended Circuits

EMC Solutions - Recommended Circuits

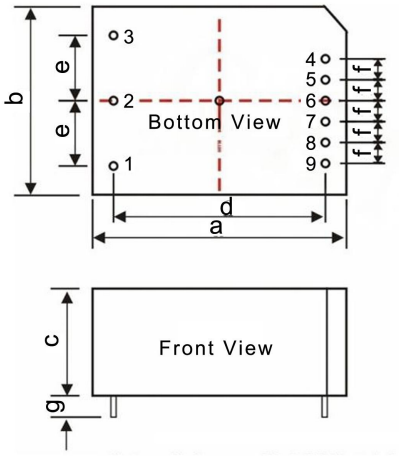


	Model	Recommended value
Recommended parameter values for EMC solution circuits	FUSE	2A/300V, slow-blow, required
	MOV1	20D561
	MOV2	14D561
	MOV3	14D561
	GDT	Gas discharge tube B5G3600
	R1	2Ω/3W
	R2	2Ω/3W
	R3	5MΩ~6MΩ/1W
	CX	0.1μF/275VAC
	CY1	2200pF/400VAC
	CY2	2200pF/400VAC
	LCM	Common mode inductance 10mH

Dimensions and Recommended Layout

AH20-20Sxx Dimensions and Recommended Layout

Third Angle Projection



	AH05	AH10	AH15	AH20	AH25	AH30
a	48.5	55	62	70	70	70
b	36.0	45	45	48	48	48
c	20.5	21	22.5	23.5	23.5	23.5
d	40.5	47	54	62	62	62
e	12.5	17.5	17.5	20	20	20
f	4	5	5	5.75	5.75	5.75
g	4.1	4.1	4.1	4.1	4.1	4.1

Pin	1	2	3	4	8	5,6,7,9
Function	⏚	AC(N)	AC(L)	+Vo	-Vo	NO PIN

Note: PIN1-PIN9: Ø1.0

Note:

Size unit: mm [inch]

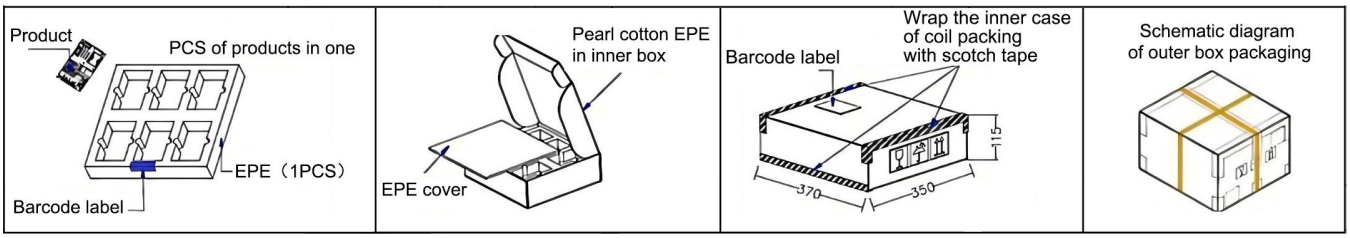
Pin diameter tolerance: ±0.10 [±0.004]

Unmarked dimensional tolerance: ±0.50 [±0.020]

Packaging Information

Model series	Product quantity(pcs/tray)	Inner carton quantity(pcs/carton)	Outer carton quantity(pcs/carton)
AH20-20Sxx	12	24	108

The schematic diagram of pearl cotton packaging is shown below：



Product precautions

1. The input voltage should not exceed the specified range value, otherwise it may cause permanent and irreparable damage;
2. It is recommended to use at a load of over 5%. If the load is below 5%, the ripple index of the product may exceed the specifications, but it does not affect the reliability of the product;
3. The maximum capacitive load is tested within the input voltage range and under full load conditions;
4. Unless otherwise specified, all indicators in this manual are measured at Ta=25 ℃, humidity<75% RH, nominal input voltage, and output rated load;
5. All indicator testing methods in this manual are based on our company's corporate standards;
6. Our company can provide product customization, and specific requirements can be directly contacted by our technical personnel;
7. Product specifications are subject to change without prior notice.

Manufacturer contact information

Bettpower Guangzhou Electronic Technology Co., Ltd.

Website：www.bettpower.com

Telephone：+86 - 020 - 32166256

Email：info@bettpower.com

Address：Room 2514-2515, Building A1,1 Doutang Road, Huangpu District, Guangzhou, China