AC/DC Converter
DA150-220SXXG9N3 Series

Typical Features

- Wide input voltage range 80-264VAC
- No load power consumption ≤0.1W @220VAC
- Efficiency 94%(TYP.)
- Operating temperature from -30°C to +70°C
- Switching Frequency 100KHz
- Input under-voltage protection, output short circuit, over current, over voltage, over power & over temp. protections
- Isolation voltage 3000VAC
- Altitude during operation 4000m Max
- Conform to CE & CQC
- Specially designed for 5G equipment

Application Field

DA150-220SXXG9N3 Series ----- *Specially designed high efficiency power supplies for 5G application with the developing requirements on safety power supplying, flexible & reliable assembly and technology innovation. The performances include global adapted input voltage range (both AC & DC available), low ripple, low temperature rise, low standby power consumption, high efficiency, high reliability and safety isolated. This series of products can be widely used for 5G, Monitoring and Security Industry, etc. The additional circuit diagram for EMC is recommended in this data sheet for the application with high EMC requirement.*

Typical Product List

Certificate	Part No.	Output Specifications			Max Capacitive Load 220VAC	Ripple & Noise 20MHz (Max)	Efficiency@ Full Load, 220VAC
		Power	Voltage	Current			
		(W)	Vo(V)	Io(mA)	u F	mVp-p	%(Typ.)
-	DA150-220S12G9N3	140.4	12	11700	10000	120	93
-	DA150-220S24G9N3	141.6	24	5900	6000	120	94
-	DA150-220S48G9N3	144	48	3000	2200	120	94

Note 1 - The typical value of efficiency is based on the product tested after half an hour burn-in at full load.

Note 2 - The full load efficiency should be in ±2% of the typical value in this table. The efficiency is calculated by the way that the full output power is divided by the input power.

Note 3 - Please contact Aipu sales for other output voltages requirements in this series but not listed in this table.

Input Specifications

Item	Operating Condition	Min	Typ.	Max	Unit
Input Voltage Range	AC input	80	220	264	VAC
	DC input	113	310	375	VDC
Input Frequency range	-	47	50	63	Hz
Input Current	115VAC	-	-	1.8	A
	230VAC	-	-	1.0	

Surge Current	115VAC	-	-	30	A
	230VAC	-	-	60	
No Load power Consumption	Input 115VAC	-	-	0.1	W
	Input 220VAC	-	-		
Leakage Current	-	0.25mA TYP/230VAC/50Hz			
Under-voltage Protection	<70VAC	The converter starts at input voltage ≥80VAC			
Hot Plug	-	Unavailable			
Remote Control	-	Unavailable			

Output Specifications

Item		Operating Condition	Min	Typ.	Max	Unit
Voltage Accuracy		Full input voltage range, any load	-	±1.0	±3.0	%
Line Regulation		Rated load	-	-	±1.0	%
Load Regulation		Nominal input voltage, 10%~100% load	-	-	±1.0	%
Minimum Load		Single Output	0	-	-	%
Turn-on Delay Time		Input 115VAC (full load)	-	500	-	mS
		Input 230VAC (full load)	-		-	
Power-off Hold-up Time		Input 115VAC (full load)		12		mS
		Input 230VAC (full load)	-		-	
Dynamic Response	Overshoot range	25%~50%~25% 50%~75%~50%	-5.0	-	+5.0	%
	Recovery time		-5.0	-	+5.0	mS
Output Overshoot		Full input voltage range	≤10%Vo			%
Short circuit Protection			Continuous, self-recovery			Hiccup
Temperature Drift		-	-	±0.03%	-	%/℃
Over Current Protection		-	⩾110% Io, self-recovery			Hiccup
Over Voltage Protection		Output 12VDC	13.2~15.6			VDC
		Output 24VDC	26.4~31.2			
		Output 48VDC	52.8~62.4			
Over Power Protection		Nominal input voltage	Output power 110~140%			
Ripple & Noise		-	-	80	120	mV

General Specifications

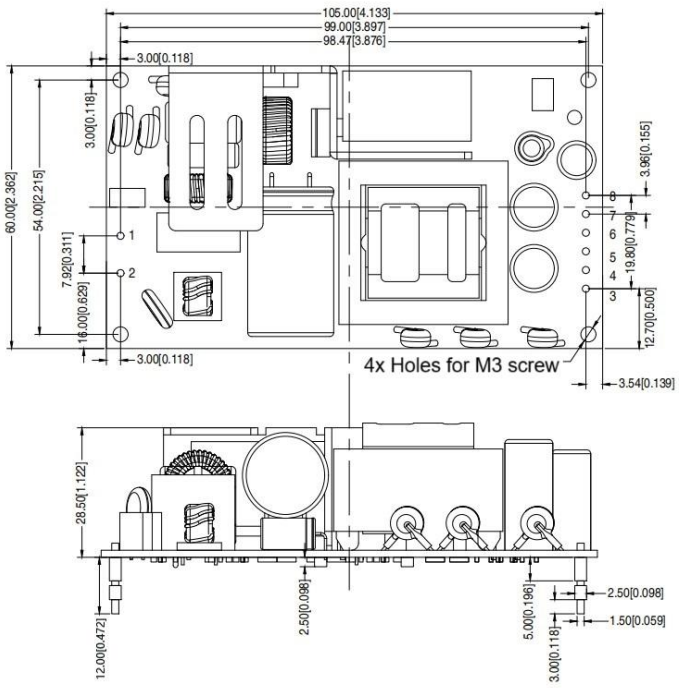
Item	Operating Condition	Min	Typ.	Max	Unit
Switching Frequency	-	-	100	-	KHz
Operating Temperature	Refer to the temperature derating graph	-30	-	+70	℃
Storage Temperature	-	-40	-	+85	℃
Soldering Temperature	Wave soldering	260±4℃, time 5-10S			

	Manual soldering	360±8℃, time 4-7S			
Relative Humidity	-	10	-	90	%RH
Isolation Voltage	Input-Output, Test 1min, leakage current ≤3mA	3000	-	-	VAC
Insulation Resistance	Input-Output, @ DC500V	100	-	-	MΩ
Vibration	-	10-500Hz, 2G, 10Min, along X, Y, Z			
Safety Class	-	CLASS Ⅱ			
MTBF	-	MIL-HDBK-217F@25℃＞500,000H			
Unit Weight	-	195g (Typ.)			

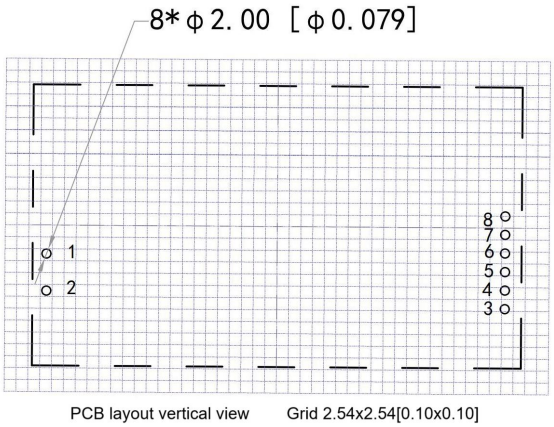
EMC Performances

Total Item	Sub Item	Test Standard	Performance/Class
EMS	RS	IEC/EN61000-4-3	10V/m Perf.Criteria A
	CS	IEC/EN61000-4-6	10Vr.m.s Perf.Criteria A
	ESD	IEC/EN61000-4-2	Contact ±6KV Perf.Criteria B
	Surge	IEC/EN61000-4-5	±1KV Perf.Criteria B
	EFT	IEC/EN61000-4-4	±2KV Perf.Criteria B

Mechanical Dimensions



Terminal No.	Function
1	AC(L)
2	AC(N)
3, 4, 5	-Vout
6, 7, 8	+Vout



PCB layout vertical view Grid 2.54x2.54[0.10x0.10]

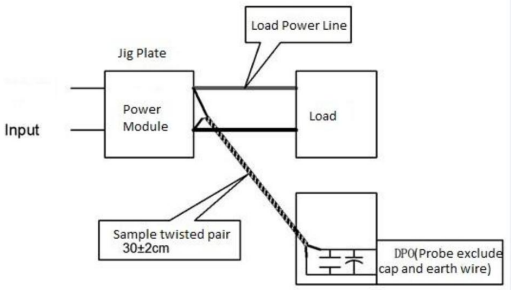
Unit: mm[inch]
General tolerance: ±1.00[±0.039]
Terminals diameter tolerance: ±0.10[±0.004]
The components layout is only for reference, any deviation from the actual unit should be accepted.

Package Code	Dimensions L x W x H	
-	105 x 60 x 31 mm	4.133 × 2.362 × 1.220 inch

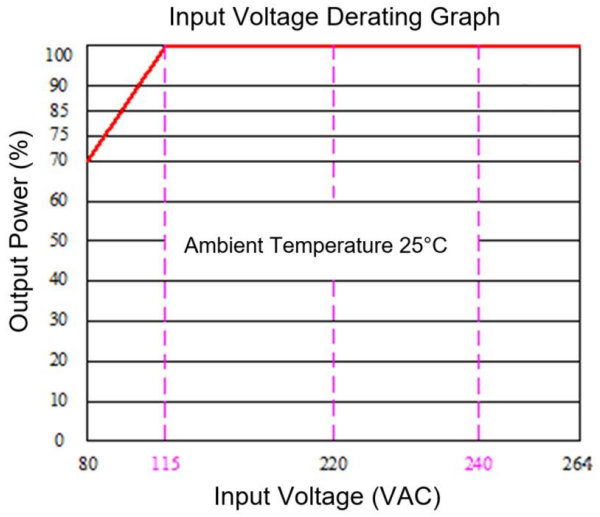
Ripple & Noise Test Instruction (Twisted Pair Method, 20MHZ bandwidth)

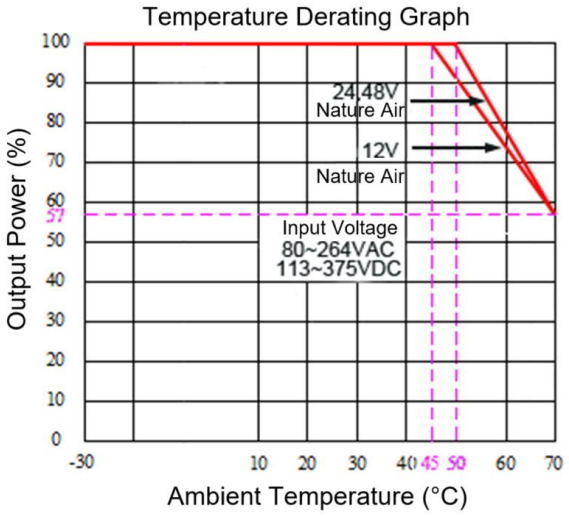
1) The Ripple & noise test need 12# twisted pair cables, an oscilloscope which bandwidth should be set to 20MHz, 0.1uF polypropylene capacitor and 10uF high-frequency low-resistance electrolytic capacitor are connected in parallel with the probes (100M bandwidth). The oscilloscope should be set at the Sample Mode.

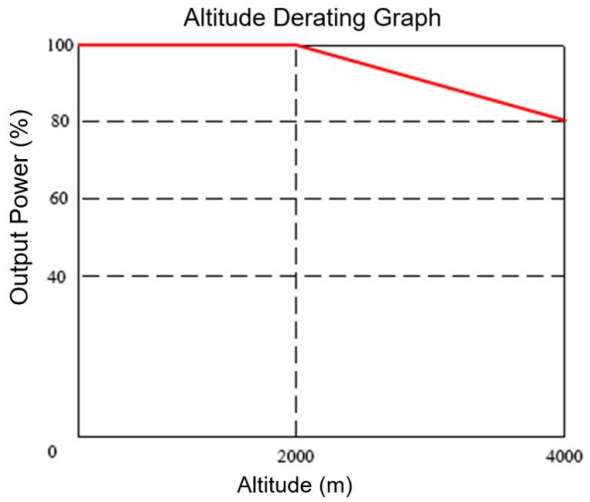
2) The test diagram is shown on the right. The converter output connects to the electronic load by the jig with cables which size should be defined according to the output current value. The twisted pair (length 30cm±2 cm) should be connected in parallel with the load, the location is as close as possible to the output pins or terminals. The test can be start after input power on.



Product Characteristics Graphs







Note 1 - The output power should be derated based on the input voltage derating graph at 85~115VAC & 113~162VDC.

Note 2 - This product should operate under the natural air condition, please contact us if it need be used at a closed space.

Application Notice

1.The products should be used according to the specifications in this datasheet, otherwise it could be permanently damaged.

2. The product performance in this datasheet cannot be guaranteed if it works at a lower load than the minimum load defined.

3. The product performance in this datasheet cannot be guaranteed if it works under over-load condition.

4. Unless otherwise specified, all values or indicators in this datasheet are tested at Ta=25℃, humidity<75%RH, nominal input voltage and rated load (pure resistance load).

5. All values or indicators in this datasheet had been tested based on Aipupower test specifications.

6.The specifications are specially for the parts listed in this datasheet, any other non-standard model performances could be out of the specifications. Please contact our technician for specific requirements.

7. Aipupower can provide customization service.

Guangzhou Aipu Electron Technology Co., Ltd

Address: Building 4, HEDY Park, No.63, Punan Road, Huangpu Dist, Guangzhou, China.

Tel: 86-20-84206763 Fax: 86-20-84206762 Hotline: 400-889-8821

E-mail: sales@aipu-elec.com Website: www.aipupower.com

