

**FEATURES**

- ▶ Ultra Compact Size 2.06 x 1.07 x 0.93"
- ▶ Fully Encapsulated Module for PCB Mounting
- ▶ Universal Input 85-264VAC, 47-440Hz
- ▶ I/O Isolation 3000VAC with Reinforced Insulation
- ▶ No Min. Load Requirement
- ▶ Operating Ambient Temp. Range -25°C to +70°C
- ▶ Overload/Voltage and Short Circuit Protection
- ▶ EMI Emission EN 55032/14-1 Class B Approved
- ▶ EMC Immunity EN 61000-4-2,3,4,5,6,8,11 Approved
- ▶ Eco Design, Low No Load Power Consumption < 100mW
- ▶ UL/cUL/IEC/EN 62368-1(60950-1), TUV IEC/EN 60335-1 Safety Approval & CE Marking

**NEW**

**PRODUCT OVERVIEW**

The AGF-15 Series is a range of ultra-small, fully encapsulated 15 Watt AC-DC power supply modules. They are designed for easy PCB mounting featuring measuring only 2.06"x1.07"x0.93". These series consists 7 models featuring universal AC input (85-264VAC) and fixed regulated single output voltage ranging from 3.3-48VDC; 3000VAC isolation with reinforced insulation; EMI emission EN 55032/14-1 Class B approved; EMC immunity EN 61000-4-2,3,4,5,6,8,11 approved; no minimum load requirement; short circuit / overload / overvoltage protection and low standby power consumption. For intelligent applications, the models for chassis mounting can also be supplied as an option with IEC/EN 60335-1 approval. The AGF-15 series also provides a better solution for many space critical applications in commercial and industrial electronic equipment.

**Model Selection Guide**

Model Number	Output Voltage VDC	Output Current		Input Current		Max. capacitive Load μF	Efficiency (typ.) @Max. Load, 115VAC %
		Max.	Peak <sup>(1)</sup>	115VAC, 60Hz	230VAC, 50Hz		
		mA	mA	@Max. Load mA(typ.)			
AGF-15S033	3.3	3500	4550	258	167	5600	75
AGF-15S05	5	3000	3900	318	206	3300	79
AGF-15S09	9	1667	2160	310	201	1000	81
AGF-15S12	12	1250	1625	306	199	560	82
AGF-15S15	15	1000	1300	306	199	330	82
AGF-15S24	24	625	813	299	194	150	84
AGF-15S48	48	313	407	306	199	33	82

**Input Specifications**

Parameter	Conditions / Model	Min.	Typ.	Max.	Unit
Input Voltage Range	All Models	85	---	264	VAC
Input Frequency Range		47	---	440	Hz
Input Voltage Range		120	---	370	VDC
No-Load Power Consumption		---	---	0.1	W
Inrush Current (Cold Start at 25°C)	115VAC	---	---	25	A
	230VAC	---	---	45	A

Output Specifications						
Parameter	Conditions / Model	Min.	Typ.	Max.	Unit	
Output Voltage Setting Accuracy		---	±1.0	±2.0	%	
Line Regulation	Vin=Min. to Max. @Full Load	---	---	±0.5	%	
Load Regulation	Io=0% to 100%	---	---	±1.0	%	
Minimum Load	No minimum Load Requirement					
Ripple & Noise	0-20 MHz Bandwidth	3.3V & 5VDC Output Models	---	---	80	mV <sub>P-P</sub>
		Other Output Models	---	---	1	%V <sub>PP</sub> of Vo
Over Voltage Protection	Zener diode clamp	---	125	---	% of Vo	
Temperature Coefficient		---	±0.01	±0.02	%/°C	
Over Load Protection	Foldback, auto-recovery (long term overload condition may cause damage)	---	150	---	%Inom.	
Short Circuit Protection	Hiccup mode, Automatic Recovery					

General Specifications						
Parameter	Conditions	Min.	Typ.	Max.	Unit	
I/O Isolation Voltage	60 Seconds	3000	---	---	VAC	
I/O Isolation Resistance	500 VDC	1000	---	---	MΩ	
Switching Frequency		---	115	---	kHz	
Start-up Time	230VAC	---	---	1	s	
Hold-up Time	115VAC, 60Hz	8	---	---	ms	
	230VAC, 60Hz	40	---	---	ms	
MTBF (calculated)	MIL-HDBK-217F@25°C, Ground Benign	432,254	---	---	Hours	
Safety Approvals	UL/cUL 60950-1 recognition(UL certificate), IEC/EN 60950-1(CB-report) UL/cUL 62368-1 recognition (UL certificate), IEC/EN 62368-1(CB-report) IEC/EN 60335-1 recognition(TUV certificata,CB-report)					

EMC Specifications				
Parameter	Standards & Level			Performance
EMI	Conduction	EN 55014-1, EN 55032		Without external components Class B
	Radiation			
EMS	EN 55014-2, EN 55024			
	ESD	Direct discharge		Indirect discharge HCP & VCP Contact ± 6kV
		EN 61000-4-2 Air ± 8kV , Contact ± 6kV		
	Radiated immunity	EN 61000-4-3 10V/m		
	Fast transient	EN 61000-4-4 ±2kV		
	Surge	EN 61000-4-5 ±1kV		
	Conducted immunity	EN 61000-4-6 10Vrms		
	PFMF	EN 61000-4-8 30A/Mm		
	Dips	EN 61000-4-11 30% 10ms		
Interruptions	EN 61000-4-11 >95% 5000ms			

### Environmental Specifications

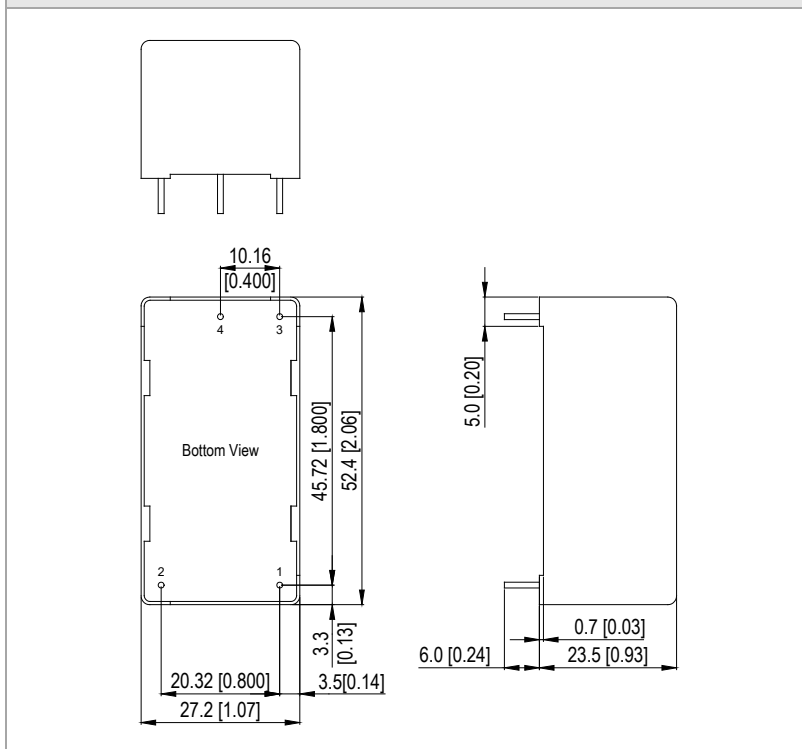
Parameter	Conditions	Min.	Max.	Unit
Operating Ambient Temperature Range		-25	+70	°C
Power Derating	+55°C to +70°C	0.5		W / °C
Storage Temperature Range		-40	+85	°C
Humidity (non condensing)		---	95	% rel. H
Lead Temperature (1.5mm from case for 10Sec.)		---	260	°C

### Notes

- 1 Peak load lasting <30s with a maximum duty cycle of 10%, average output power not to exceed maximum power.
- 2 All specifications typical at Ta=+25°C, resistive load, 115VAC, 60Hz input voltage and after warm-up time rated output current unless otherwise noted.
- 3 We recommend to protect the converter by a slow blow fuse in the input supply line.
- 4 Other input and output voltage may be available, please contact MINMAX.
- 5 Specifications are subject to change without notice.

### Package Specification

#### Mechanical Dimensions



#### Pin Connections

Pin	Function	Diameter mm (inches)
1	AC(N)	∅ 1.0 [0.04]
2	AC(L)	∅ 1.0 [0.04]
3	+Vout	∅ 1.0 [0.04]
4	-Vout	∅ 1.0 [0.04]

- ▶ All dimensions in mm (inches)
- ▶ Tolerance: ±0.5 (±0.02)
- ▶ Pin diameter tolerance: X.X±0.1 (X.XX±0.004)

### Physical Characteristics

Case Size	: 52.4x27.2x23.5mm (2.06x1.07x0.93 inches)
Case Material	: Plastic resin (flammability to UL 94V-0 rated)
Pin Material	: Copper Alloy
Weight	: 60g