FEATURES

- Fully Encapsulated Plastic Case for PCB Mounting
- Universal Input 85~264VAC, 47~440Hz
- Protection Class II as per IEC/EN 60536
- I/O Isolation 3000VAC with Reinforced Insulation
- Operating Ambient Temp. Range -25℃ to +70℃
- Overload/Voltage and Short Circuit Protection
- Designed-in EMI Emission meets EN55011/22 Class B & FCC Level B
- Designed-in EMC Immunity meets EN61000-4-2,3,4,5,6,8,11
- Eco Design, Compliant to Energy Star Specification and ErP Directive 2009/125/EC
- UL/cUL/IEC/EN 60950-1 Safety Approval & CE Marking



PRODUCT OVERVIEW

The MINMAX ADF-07 series is a new range of fully encapsulated AC/DC power supply modules. They are designed for direct PCB mounting with solder pins. The product features EMI-filter to EN55022, class B and EMS compliance to the EN 61000-4 standard. Universal input voltage 85-264VAC and International safety approvals qualifies these power modules for applications in products with worldwide markets.
The ADF-07 series provide a cost effective solution for many space critical applications in commercial and industrial electronic equipment.

Model Selection Guide

Model Number	Output Voltage	Output Current	Input Current 115VAC, 60Hz	Max. capacitive Load	Efficiency (typ.)
		Max.	@Max. Load		@Max. Load
	VDC	mA	mA(typ.)	μF	%
ADF-07S03	3.3	1400	96	2200	70
ADF-07S05	5	1400	139	2200	73
ADF-07S12	12	583	130	1000	78
ADF-07S15	15	466	130	1000	78
ADF-07S24	24	291	130	680	78

Input Specifications

Parameter	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			---	---	0.3	W
Inrush Current	115VAC	Cold Start at 25℃	---	---	10	A
	230VAC		---	---	20	A
External Fuse (Recommended)	All Models		1.5A Slow – Blow Type			

Output Specifications

Parameter	Conditions		Min.	Typ.	Max.	Unit
Output Voltage Setting Accuracy			---	±1.0	±2.0	%Vnom.
Line Regulation	Vin=Min. to Max. @Full Load		---	±0.5	±1.0	%
Load Regulation	Io=Min. to Max.		---	±0.5	±1.0	%
Ripple & Noise	0-20 MHz Bandwidth	3.3 & 5.0VDC Output Models	---	1.5	1.8	%V_{PP} of Vo
		Other Output Models	---	0.8	1.0	%V_{PP} of Vo
Minimum Load			---	10	---	%Inom.
Over Voltage Protection	Zener diode clamp		---	120	---	% of Vo
Temperature Coefficient			---	±0.01	±0.02	%/℃
Overshoot			---	---	5	% Vout
Current Limitation	Foldback, auto-recovery		105	---	---	%Inom.
	(long term overload condition may cause damage)					
Short Circuit Protection	Hiccup mode, Automatic Recovery					

General Specifications

Parameter	Conditions	Min.	Typ.	Max.	Unit
I/O Isolation Voltage	Input to Output, 60 Seconds	3000	---	---	VACrms
I/O Isolation Resistance	500 VDC	100	---	---	MΩ
Switching Frequency		---	100	---	KHz
Hold-up Time		---	20	---	ms
MTBF (calculated)	MIL-HDBK-217F@25℃, Ground Benign	330,000			Hours
Protection Class II	According IEC/EN 60536				
Safety Approvals	UL/cUL 60950-1 recognition(UL certificate) , IEC/EN 60950-1(CB-report)				

Environmental Specifications

Parameter	Conditions	Min.	Typ.	Max.	Unit
Operating Ambient Temperature Range	Natural Convection	-25	---	+70	℃
Storage Temperature Range		-40	---	+85	℃
Power Derating	+50℃ to +70℃	0.263			W / ℃
Thermal Shutdown	Shutdown, Internal IC Junction Temperature	---	142	---	℃
	Automatic Recovery, Internal IC Junction Temperature	---	67	---	℃
Humidity (non condensing)		---	---	95	% rel. H
Cooling	Natural Convection				
Lead Temperature (1.5mm from case for 10Sec.)		---	---	260	℃

EMC Specifications

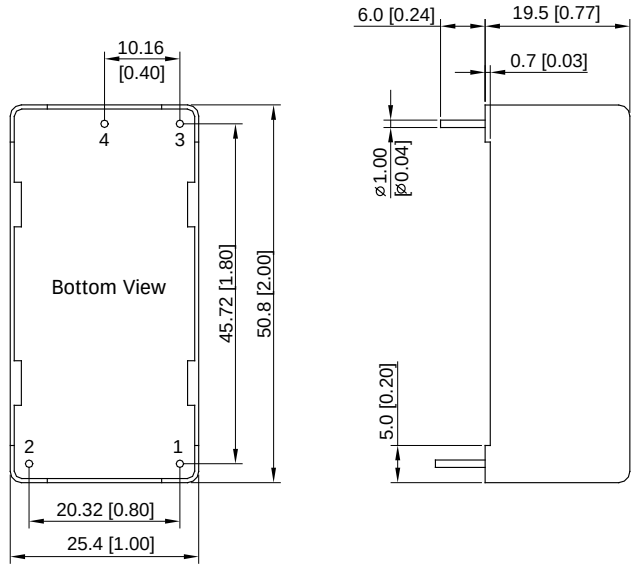
Parameter	Standards & Level		Performance
EMI	Conduction and Radiation	EN55014-1, EN55022, FCC part 15	Class B
EMS	EN55014-2 ,EN55024		
	ESD	EN61000-4-2 Air ± 8kV , Contact ± 4kV	B
	Radiated immunity	EN61000-4-3 10V/m	A
	Fast transient	EN61000-4-4 ±2kV	B
	Surge	EN61000-4-5 ±1kV	B
	Conducted immunity	EN61000-4-6 10Vrms	B
	PFMF	EN61000-4-8 30A/m	A
	Dips	EN61000-4-11 30% 10ms	B
	Interruptions	EN61000-4-11 >95% 5000ms	C

Notes

1. Specifications typical at Ta=+25℃, resistive load, 115VAC, 60Hz input voltage and after warm-up time rated output current unless otherwise noted.
2. These power modules require a minimum output loading to maintain specified regulation, operation under no-load conditions will not damage the power supplies however they may not meet all listed specifications.
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 factory.
5. Specifications are subject to change without notice

Package Specifications

Mechanical Dimensions



Pin Connections

Pin	Function
1	AC(N) – AC Neutral
2	AC(L) – AC Line
3	+Vout
4	-Vout

- All dimensions in mm (inches)
- Tolerance: ±0.5 (±0.02)
- Pin diameter ∅ 1.0 ±0.1 (0.04±0.004)

Physical Characteristics

Case Size	:	50.8x25.4x19.5mm (2.00x1.00x0.77 Inches)
Case Material	:	Plastic resin (flammability to UL 94V-0 rated)
Weight	:	44g