

AZF-60 Series

60 Watts Universal Input Range AC/DC Power Modules

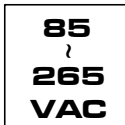


Single Output

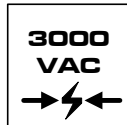


Key Features

- High Efficiency up to 84%
- 85~265VAC Universal Input Range
- Single Output Modules
- PCB and Chassis Mounting Packages
- I/O Isolation 3000VAC
- EMI Complies With EN55022 Class B and FCC part 15, level B
- EMC Complies With EN61000
- MTBF > 125,000 Hours
- Meets IEC / EN / UL 60950-1 Safety Standards
- Meets IEC61140 Safety Class II
- Operating Temperature 71°C (Reference to Derating Curve)



Universal Voltage



I/O Isolation



Protection



EN55022



EN61000

AZF-60 is a 60 Watts series of AC-DC power modules. These modules have wide input range of 85~265VAC and are available in single output voltages of 5.1V, 12V, 15V, 24V, 36V and 48V with efficiency as high as 84% .

Other features include continuous short circuit protection, overvoltage protection, output current limitation, EMC meets EN61000-4(-2, -3, -4, -5, -6, -11) EMI meets EN55022 level B conducted noise compliance minimize design-in time, cost and eliminate the need for external components.

The AZF-60 meets IEC / EN / UL 60950-1 safety approval qualifies this product for worldwide markets. The series is a wide variety of applications in commercial and industrial electronic equipment, and MTBF is up to 125,000 hours.

Environmental Specifications

Parameter	Conditions	Min.	Max.	Unit
Operating Temperature	Ambient	-10	+71	°C
Storage Temperature		-40	+85	°C
Humidity		---	95	%
Cooling	Free-Air Convection			
Conducted EMI	EN55022 Class B			
Conducted EMC	Standard	specification requirement		Performance Criteria
	EN61000-4-2	Air ±8KV Cont. ±4KV		B
	EN61000-4-3	80~1000MHz 10V/m 80% AM1KHz modulation		A
	EN61000-4-4	AC port ±2KV DC, SL, TL ±2KV not less than 1 min.		B
	EN61000-4-5	1.2/50uS(8/20uS) AC dif. ±1KV DC ±0.5KV		B
	EN61000-4-6	0.15~80MHz 10Vrms (functional earth ports included) 80% AM 1kHz modulation		B
	EN61000-4-11	30% 10ms 60% 100ms 95% 5000ms		B C C

Model Selection Guide

Model Number	Output Voltage	Output Current		Capacitive Load	Input Current		Efficiency
		Max.	Min.		115VAC, 60Hz		
	VDC	mA	mA	uF	@Max. Load mA (Typ.)	@No Load mA (Typ.)	@Max. Load % (Typ.)
AZF-60S051	5.1	10000	1000	8000	936	50	79
AZF-60S12	12	5000	500	3900	1060	50	82
AZF-60S15	15	4000	400	3300	1047	50	83
AZF-60S24	24	2500	250	1500	1035	50	84
AZF-60S36	36	1666	166	1000	1035	50	84
AZF-60S48	48	1250	125	680	1035	50	84

Input Fuse

All Models	
Built-in Fuse	6A / 250VAC
External Fuse (Recommended)	3A Slow – Blow Type

Input Specifications

Parameter	Model	Min.	Typ.	Max.	Unit
Input Voltage Range	All Models	85	---	265	VAC
		120	---	370	VDC
Input Frequency Range		47	---	63	Hz
Inrush Current (Cold Start at 25°C)	115VAC	---	---	30	A
	230VAC	---	---	50	A

Output Specifications

Parameter	Conditions	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	All Models	---	±1.0	±2.0	%
Line Regulation	V _{in} =Min. to Max.	---	±0.2	±1.0	%
Load Regulation	I _{out} =Min. to Max. All Models	---	±0.5	±1.0	%
Ripple & Noise (20MHz)	5.1VDC Output Models	---	2.0	3.0	%V _{pp} of V _o
	Other Output Models	---	1.0	1.3	%V _{pp} of V _o
Over Voltage Protection	Zener diode clamp	---	120	---	% of V _o
Transient Recovery Time	50% Load Step Change (I _{out} =100% to I _{out} =50%)	---	400	1000	uS
Transient Response Deviation		---	±3	±6	%
Temperature Coefficient		---	±0.02	---	%/°C
Overshoot		---	---	5	%
Current Limitation	automatic recovery (Note 8)	105	---	---	%
Short Circuit Protection	Hiccup mode, indefinite (automatic recovery)				

AZF-60 Series

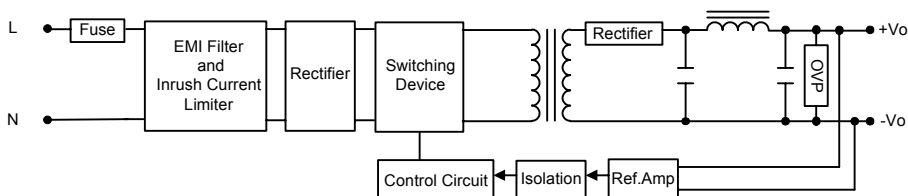
General Specifications

Parameter	Conditions	Min.	Typ.	Max.	Unit
Isolation Voltage	Input to Output, 60 Seconds	3000	---	---	VAC
Isolation Test Voltage	Input to Output, Flash Tested for 1 Second	4700	---	---	VDC
Isolation Resistance	500VDC	100	---	---	MΩ
Switching Frequency		---	100	---	KHz
Hold-up Time	115VAC, 60Hz	---	20	---	ms
MTBF	MIL-HDBK-217F @ 25°C, Ground Benign	125	---	---	K Hours

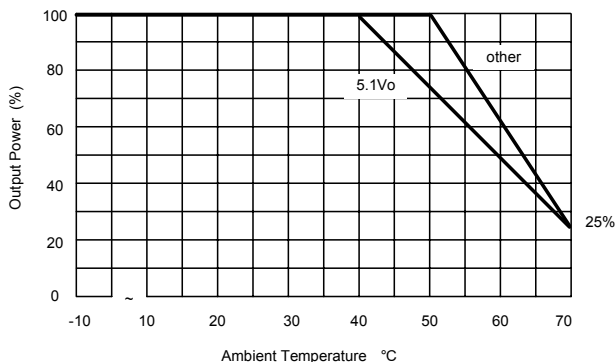
Note:

1. Specifications typical at $T_a=+25^\circ\text{C}$, resistive load, 115VAC, 60Hz input voltage, rated output current unless otherwise noted.
2. Ripple & Noise measurement bandwidth is 0~20 MHz.
3. These power modules require a minimum output loading to maintain specified regulation.
4. Operation under no-load conditions will not damage these devices; however they may not meet all listed specifications.
5. Other input and output voltage may be available, please contact factory.
6. Specifications subject to change without notice.
7. To order the power module with chassis mounting style, please add a suffix C (e.g. AZF-60S12C).
8. Long term short circuit operation may cause damage to the unit.
9. Part Number for DIN-Rail bracket: AC-DIN-03

Block Diagram

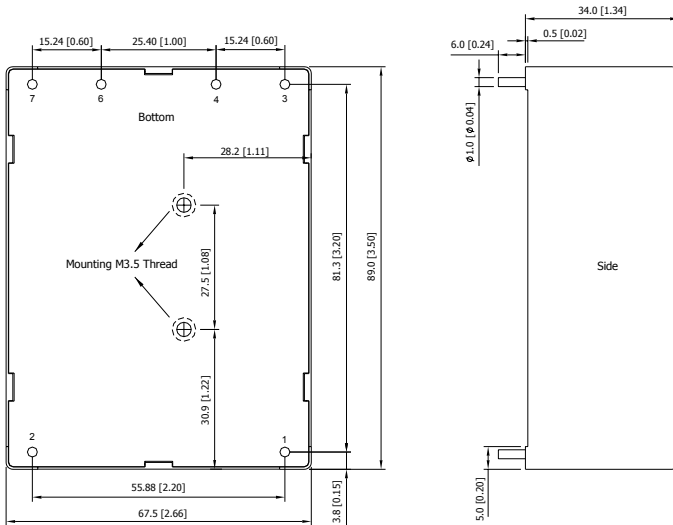


Derating Curve



Mechanical Dimensions

PCB mounting



Pin Connections

Pin	Function
1	AC(N) – AC Neutral
2	AC(L) – AC Line
3	No Pin
4	+Vout
6	-Vout
7	No Pin

Physical Characteristics

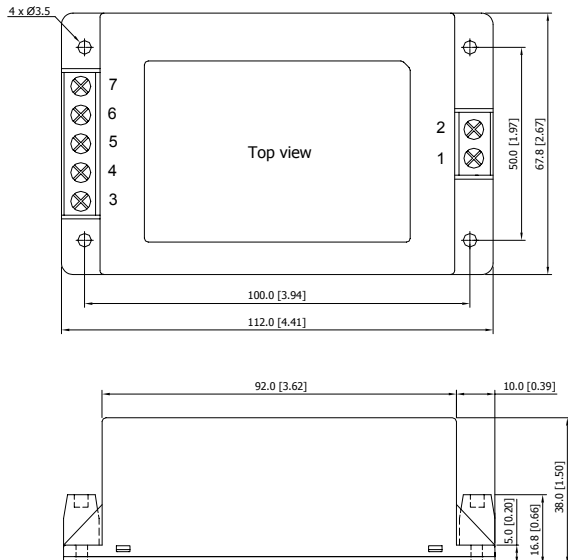
Case Size : 89.0x67.5x34.0 mm
3.50x2.66x1.34 inches

Case Material : Plastic resin + Fiberglass

Weight : 345

Flammability : UL94V-0

Chassis mounting



Pin Connections

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

NC: No Connection

Physical Characteristics

Case Size : 112.0x67.8x38.0 mm
4.41x2.67x1.50 inches

Case Material : Plastic resin + Fiberglass

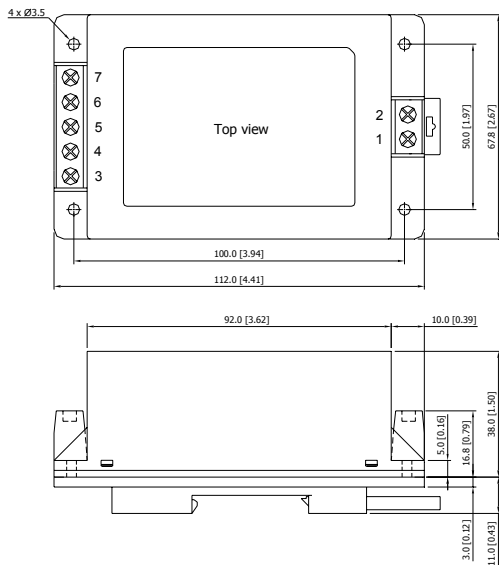
Weight : 357

Flammability : UL94V-0

Tolerance	Millimeters	Inches
	X.X±0.5	X.XX±0.02
	X.XX±0.25	X.XXX±0.01
Pin	±0.1	±0.004

AZF-60 Series

DIN-Rail Package



Pin Connections

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

Physical Characteristics

Case Size : 112.0x67.8x49.0 mm
4.41x2.67x1.93 inches

Case Material : Plastic resin + Fiberglass

Weight : 410

Flammability : UL94V-0