AQF360E Series

360 W AC/DC Switching Power Supply

CoolPower Solutions

KEY FEATURES

- Enclosed Switching Power Supply
- Universal Input: 90-264 VAC
- With P.F.C. Function, PF>0.95
- Cooling by Built-in 12 VDC FAN
- 240W Convection without FAN
- Protections: Over Load / Over Voltage / Over Temperature / Short Circuit All by Auto-recovery
- Leakage Current <300uA
- High Power Density
- High Efficiency up to 93%
- RoHS Compliant Design
- Ultra Compact Size: 6.8 x 3.2 x 2.1 Inches
- 3-Years Product Warranty



Standard	A Type
	
	

CE cULus CB E199779 LEVEL3

ELECTRICAL SPECIFICATIONS

Model No.		AQF360E-12S	AQF360E-24S	AQF360E-36S	AQF360E-48S	AQF360E-54S
Max Output Wattage (W)		360W				
Input	Voltage	90-264 VAC or 120-370 VDC				
	Frequency (Hz)	47-63 Hz				
	Current (Full load)	< 4.0 A max. (115 VAC) / < 2.0 A max. (230 VAC)				
	Inrush Current (<2ms)	< 30 A max. (115 VAC) / < 60 A max. (230 VAC)				
	Leakage Current	< 0.3 mA max.(240VAC 63Hz)				
	Power Factor	PF>0.98 (115 VAC) / PF>0.93 (230 VAC) at Full Load				
Output	Voltage (V.DC.)	12V	24V	36V	48V	54V
	Trim	10.8 ~ 13.2V	21.6 ~ 26.4V	32.7 ~ 39.6V	44 ~ 51V	51.3 ~ 56.7V
	Voltage Accuracy	±2%				
	Current (Convection) (A) max	30	15	10	7.5	6.66
	Line Regulation (LL-HL) (typ.)	±1%				
	Load Regulation (5-100%) (typ.)	±1%				
	Minimum Load	1%				
	Maximum Capacitive Load	85000 uF	48000 uF	21000 uF	13000 uF	7000 uF
	Ripple & Noise (max.)	150mVp-p	200mVp-p			
	Efficiency (typ.)	89%	91%	92%	93%	93%
	Hold-up Time	12 ms min.				
	Switching Frequency	75 kHz				
Protection	Over Power Protection	Auto recovery				
	Over Voltage Protection	Auto recovery				
	Over Temperature	Auto recovery				
	Short Circuit Protection	Auto-recovery				
Isolation	Input-Output (V.AC)	3000V				
	Input-FG (V.AC)	1500V				
	Output-FG (V.AC)	500V				
Environment	Operating Temperature	-10°C…+70°C (with derating)				
	Storage Temperature	-25°C…+85°C				
	Temperature Coefficient	±0.03%/°C (0~50°C)				
	Humidity	95% RH				
	MTBF	>120,000 h @ 25°C (MIL-HDBK-217F)				
	Vibration	10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes.				

1. All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.
2. Ripple & Noise are measured at 20MHz of bandwidth with 0.1UF & 47UF parallel capacitor.

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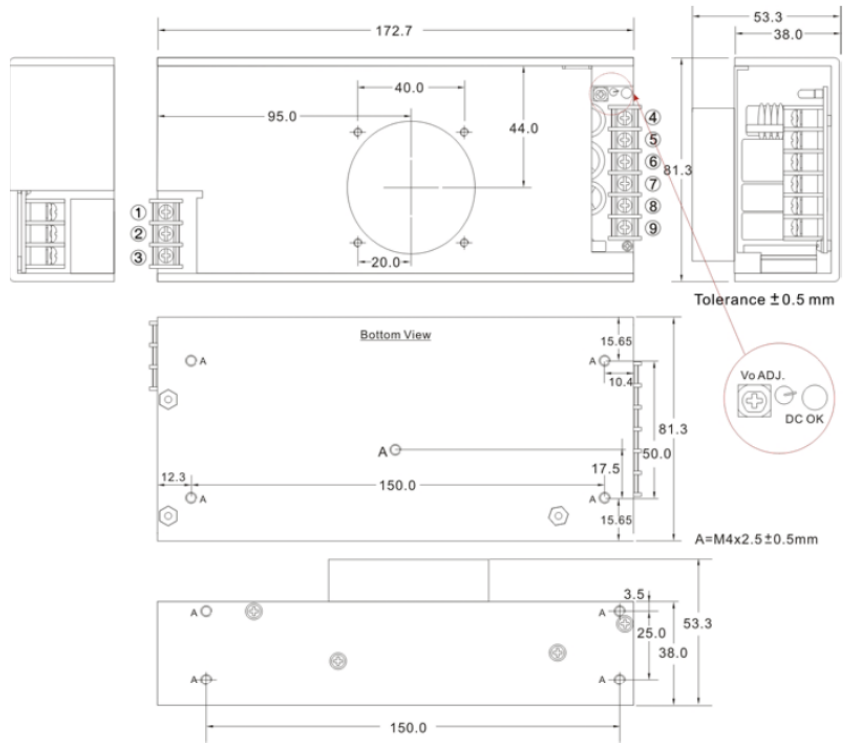
ELECTRICAL SPECIFICATIONS

Model No.		AQF360E-12S	AQF360E-24S	AQF360E-36S	AQF360E-48S	AQF360E-54S
Physical	Dimension (L x W x H)	6.8 x 3.2 x 2.1 Inches (172.7 x 81.3 x 53.3 mm) Tolerance ±0.5 mm				
	Weight	729 g				
	Cooling Method	Cooling by Built-in DC FAN				
Safety	Agency Approvals	CE, UL60950, CB				
EMC	EMI (Conducted & Radiated Emission)	EN 55022 class B				
	EMS (Noise Immunity)	EN 55024				

1. All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.
2. Ripple & Noise are measured at 20MHz of bandwidth with 0.1UF & 47UF parallel capacitor.

MECHANICAL DIMENSION (Top View)

Standard



PIN#	Single
1	FG
2	AC IN (N)
3	AC IN (L)
4~6	+DC OUT
7~9	-DC OUT





A Type







PIN#	Single
1	FG
2	AC IN (N)
3	AC IN (L)
4~9	+DC OUT
10~15	-DC OUT

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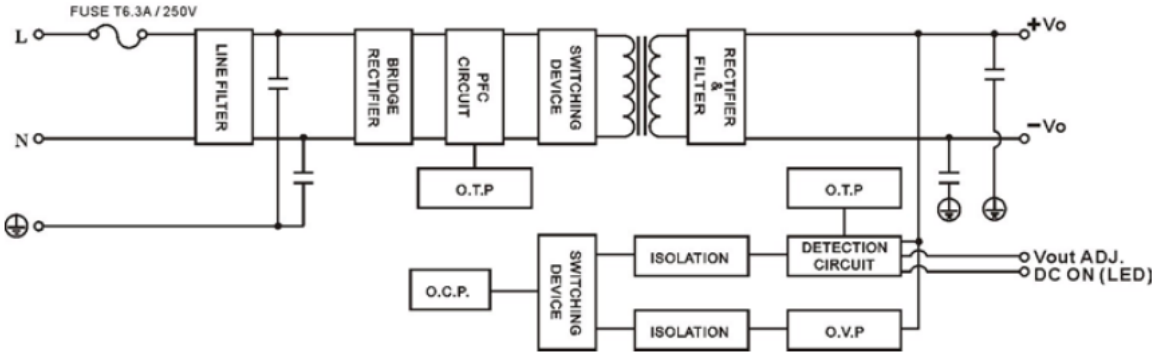
ASSEMBLY INSTRUCTIONS

*U Case T=2.0mm

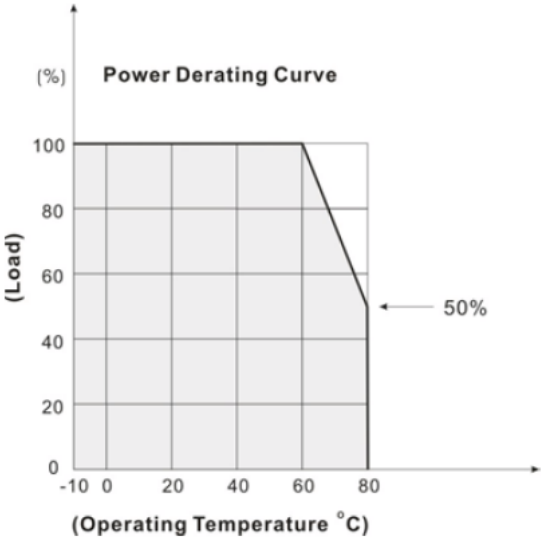
Customer screws into the length of the case no higher than 0.5mm
(Namely screw length for load plate thickness plus 2.5mm

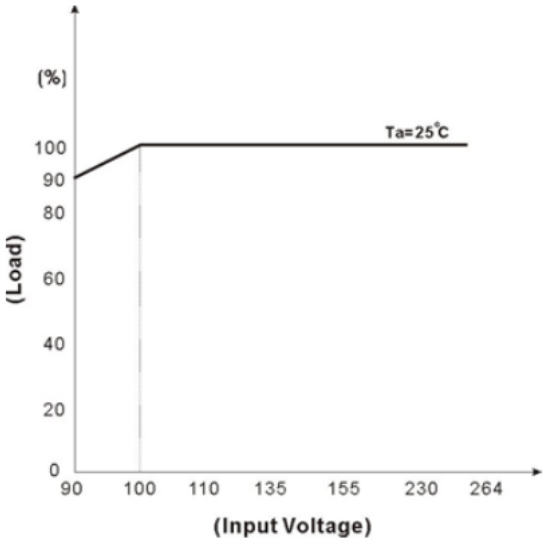
BLOCK DIAGRAM

Single Output



DERATING





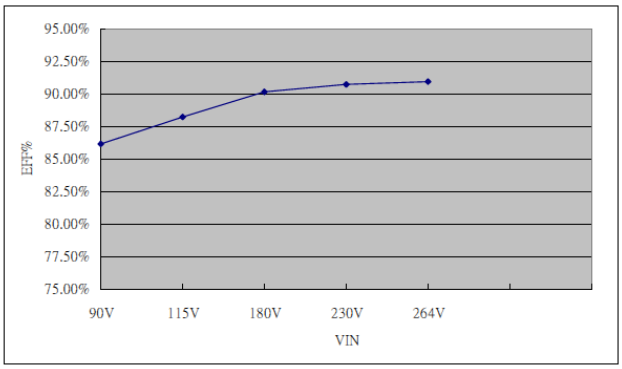
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EFFICIENCY VERSUS LOAD

AQF360E-12S

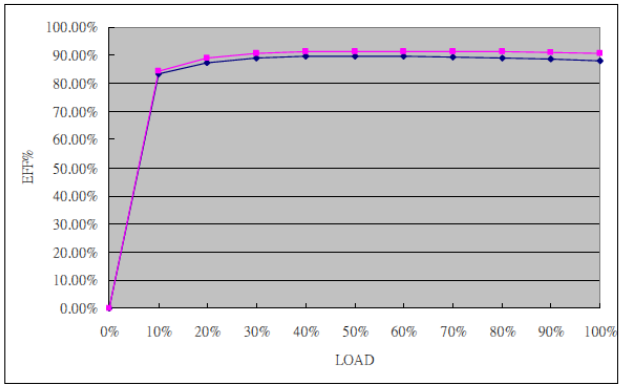
VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	86.12	88.20	90.15	90.69	90.95



LOAD VS Efficiency

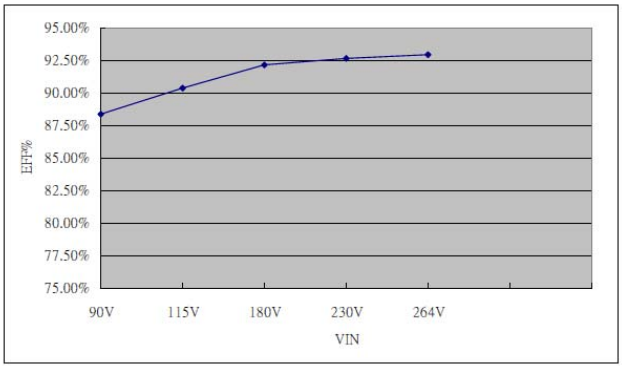
Load (%)	0	10	20	30	40	50
115V (%)	0	83.25	87.43	89.02	89.67	89.80
230V (%)	0	84.38	88.94	90.75	91.24	91.49
Load (%)	60	70	80	90	100	
115V (%)	89.64	89.39	89.00	88.65	88.20	
230V (%)	91.46	91.38	91.22	91.02	90.09	



AQF360E-24S

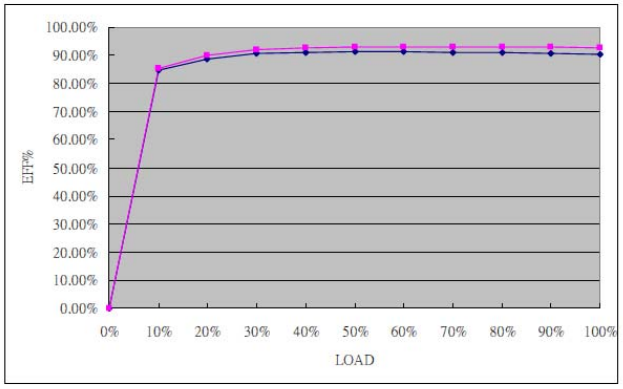
VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	88.36	90.35	92.13	92.67	92.96



LOAD VS Efficiency

Load (%)	0	10	20	30	40	50
115V (%)	0	84.77	88.62	90.54	91.14	91.33
230V (%)	0	85.54	90.08	92.06	92.62	92.99
Load (%)	60	70	80	90	100	
115V (%)	91.32	91.18	90.98	90.70	90.35	
230V (%)	93.08	93.08	93.02	92.91	92.67	



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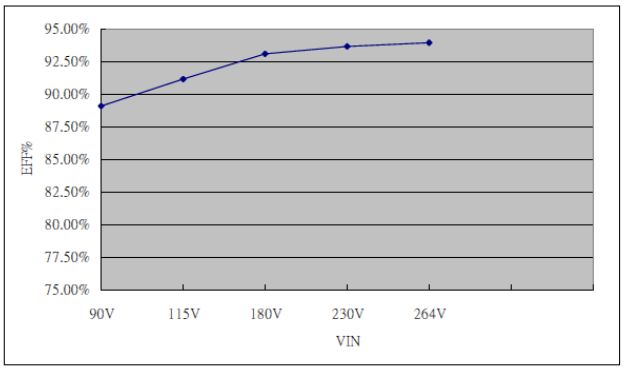
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EFFICIENCY VERSUS LOAD

AQF360E-36S

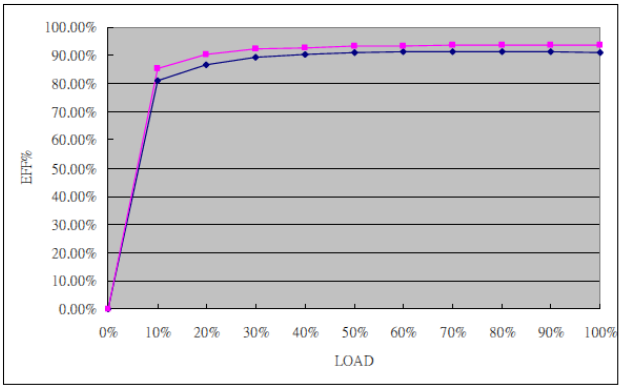
VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	89.04	91.17	93.06	93.64	93.93



LOAD VS Efficiency

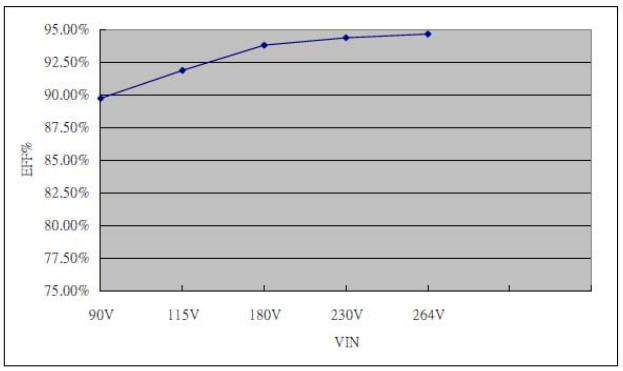
Load (%)	0	10	20	30	40	50
115V (%)	0	80.96	86.76	89.39	90.51	91.01
230V (%)	0	85.51	90.25	92.24	92.82	93.39
Load (%)	60	70	80	90	100	
115V (%)	91.21	91.36	91.37	91.31	91.17	
230V (%)	93.46	93.68	93.76	93.68	93.64	



AQF360E-48S

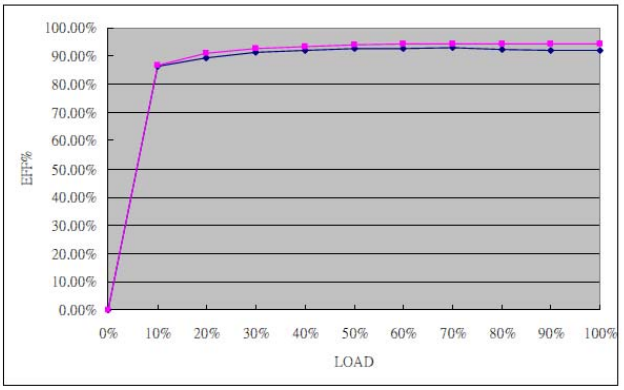
VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	89.75	91.89	93.79	94.36	94.67



LOAD VS Efficiency

Load (%)	0	10	20	30	40	50
115V (%)	0	86.43	89.33	9143	92.17	92.58
230V (%)	0	8680	90.87	92.74	93.47	94.02
Load (%)	60	70	80	90	100	
115V (%)	92.58	93.00	92.38	92.18	91.89	
230V (%)	94.02	94.23	94.24	94.40	94.36	



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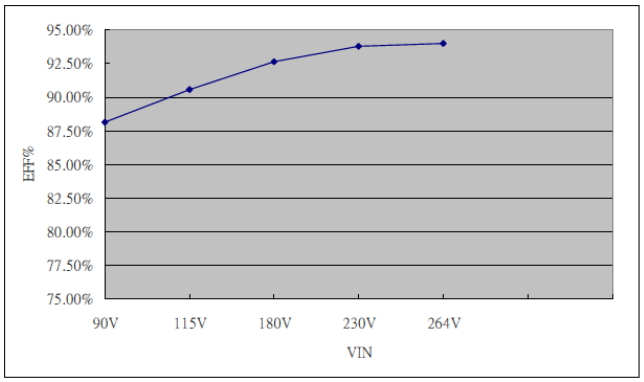
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EFFICIENCY VERSUS LOAD

AQF360E-54S

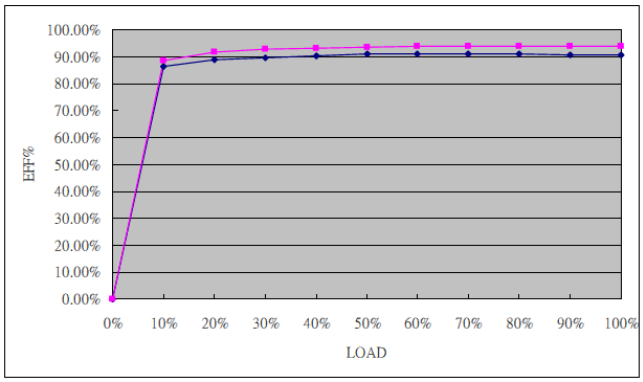
VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	88.12	90.58	92.65	93.79	93.99



LOAD VS Efficiency

Load (%)	0	10	20	30	40	50
115V (%)	0.00	86.37	88.87	89.82	90.28	90.91
230V (%)	0.00	88.59	91.67	92.80	93.35	93.66
Load (%)	60	70	80	90	100	
115V (%)	90.98	90.96	90.95	90.87	90.58	
230V (%)	93.79	93.83	93.86	93.80	93.79	



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