

AOCH SERIES
4 Watts
KEY FEATURES

- Switching Power Module for PCB Mountable
- Fully Encapsulated Plastic Case
- Universal Input Range 90-305VAC, 47-440 Hz
- Single and Dual Output
- Low Ripple and Noise
- Isolation Class II
- Maximum No-Load Watts < 0.3W
- CE and UL Approval
- 3-Year Product Warranty


ELECTRICAL SPECIFICATIONS

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Model No. (Single Output)	AOCH -3.3S	AOCH -5S	AOCH -8S	AOCH -9S	AOCH -12S	AOCH -14S	AOCH -15S	AOCH -24S			
Max Output Wattage (W)	3.96W	4W	4W	4W	4W	4W	4W	4W			
Input	Voltage										
	90-305 VAC or 120-430 VDC										
	Frequency (Hz)										
	47-440 Hz										
	Current (Full load)										
	110 mA max. (115 VAC) / 70 mA max. (230 VAC)										
Inrush Current (<500us)											
15 A max. (115 VAC) / 25 A max. (230 VAC)											
Leakage Current											
0.25 mA max.											
External Fuse (recommend)											
3.15 A slow blow type											
Output	Voltage (V.DC.)		3.3V	5V	8V	9V	12V	14V	15V	24V	
	Voltage Accuracy		±2%								
	Current (mA) max		1200	800	500	444	333	286	267	167	
	Line Regulation (LL-HL) (typ.)					±0.5%				±0.2%	
	Load Regulation (0-100%) (typ.)					±1.5%				±0.5%	
	Minimum Load		0%								
	Maximum Capacitive Load		5000uF	4200uF	1470uF	1330uF	680uF	470uF	330uF	120uF	
	Ripple & Noise (Vp-p) max			<250mV			<200mV			<150mV	<100mV
	Efficiency		68%	72%	74%	75%	76%	76%	76%	77%	
	Hold-up Time		15 ms min.								
Protection	Over Power Protection		Hiccup technique, auto-recovery								
	Short Circuit Protection		Hiccup mode, indefinite (automatic recovery)								
Isolation	Input-Output (V.AC)		3000V								
Environment	Operating Temperature		-40°C...+70°C (with derating)								
	Storage Temperature		-40°C...+85°C								
	Temperature Coefficient		±0.02%/°C								
	Humidity		95% RH								
	MTBF		>450,000 h @ 25°C (MIL-HDBK-217F)								
Physical	Dimensions (L x W x H)		1.46 x 1.08 x 0.69 Inches (37.0 x 27.5 x 17.5 mm) Tolerance ±0.5 mm								
	Case Material		Plastic resin (flammability to UL 94V-0)								
	Weight		26 g								
	Cooling Method		Free air convection								
Safety	Agency Approvals		IEC / EN 60950, UL / IEC / EN 62368-1								
EMC	EMI (Conducted & Radiated Emission)		EN 55032 class B								
	EMS (Noise Immunity)		EN 55024								

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Model No. (Dual Output)	AOCH-5S3.3S	AOCH-8S5S	AOCH-12S5S
Max Output Wattage (W)	3.5W	3.6W	3.6W
Input	Voltage		
	90-305 VAC or 120-430 VDC		
	Frequency (Hz)		
	47-440 Hz		
	Current (Full load)		
	110 mA max. (115 VAC) / 70 mA max. (230 VAC)		
Inrush Current (<500us)			
15 A max. (115 VAC) / 25 A max. (230 VAC)			
Leakage Current			
0.25 mA max.			
External Fuse (recommend)			
3.15 A slow blow type			
Output	Voltage (V.DC.)		Vo : 5V Vr : 3.3V
	Voltage Accuracy		Vo : ±2% Vr : ±5%
	Current (mA) max		600 / 150
	Line Regulation (LL-HL) (typ.)		Vo : ±0.2% Vr : ±3%
	Load Regulation (25-100%) (typ.)		Vo : ±0.5% Vr : ±5%
	Minimum Load		25%
	Maximum Capacitive Load		Vo : 2500uF Vr : 1800uF
	Ripple & Noise (Vp-p) max		<200mV
	Efficiency		72%
	Hold-up Time		15 ms min.
Protection	Over Power Protection		
	Hiccup technique, auto-recovery		
Short Circuit Protection			
Hiccup mode, indefinite (automatic recovery)			
Isolation	Input-Output (V.AC)		
3000V			
Environment	Operating Temperature		
	-40°C...+70°C (with derating)		
	Storage Temperature		
	-40°C...+85°C		
	Temperature Coefficient		
±0.02%/°C			
Humidity			
95% RH			
MTBF			
>450,000 h @ 25°C (MIL-HDBK-217F)			
Physical	Dimensions (L x W x H)		
	1.46 x 1.08 x 0.69 Inches (37.0 x 27.5 x 17.5 mm) Tolerance ±0.5 mm		
	Case Material		
	Plastic resin (flammability to UL 94V-0)		
Weight			
26 g			
Cooling Method			
Free air convection			
Safety	Agency Approvals		
IEC / EN 60950, UL / IEC / EN 62368-1			
EMC	EMI (Conducted & Radiated Emission)		
	EN 55032 class B		
EMS (Noise Immunity)			
EN 55024			

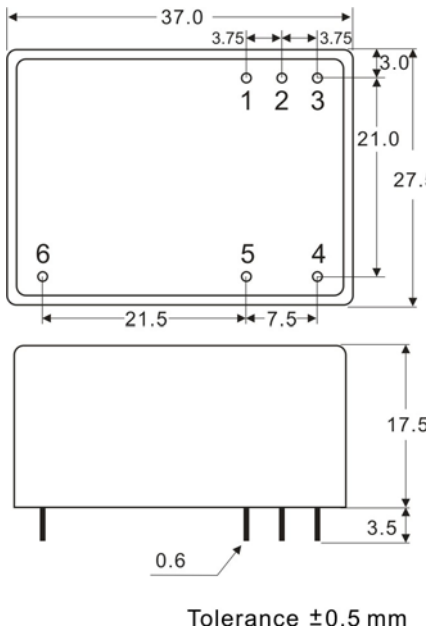
NOTE

1. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
2. It's necessary Varistor 14S561K at L / N input side in parallel.
3. It's necessary 10R / 15φ thermistor at L input side in series connection.

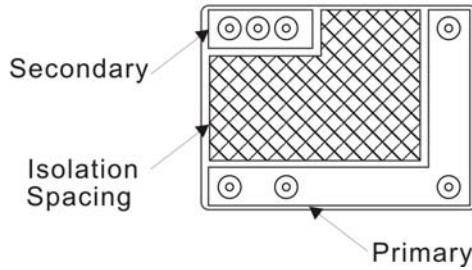
AOCH SERIES

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MECHANICAL DIMENSIONS (Top View)



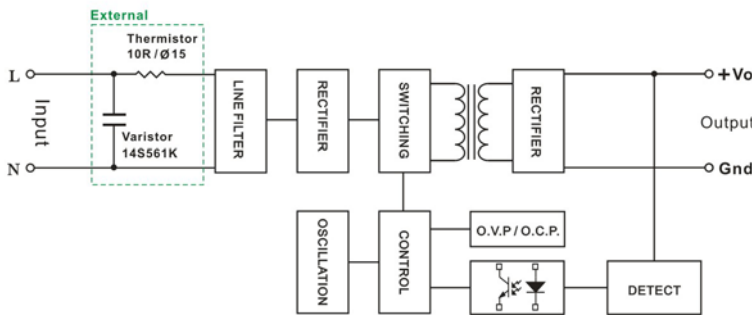
Isolation Bottom View



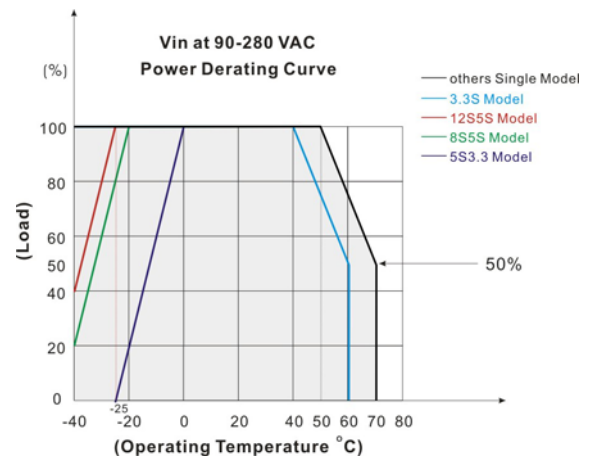
PIN#	Single	Dual
1	+Vo	+Vo
2	GND	COM
3	NC	+Vr
4	AC IN (L)	AC IN (L)
5	AC IN (N)	AC IN (N)
6	NC	NC

BLOCK DIAGRAM

Single Output



DERATING



Dual Output

