ASC Series

30 W Switching Power Module for PCB Mounting

CoolPower Solutions

KEY FEATURES

- Switching Power Module for PCB Mountable
- Fully Encapsulated Plastic Case
- Universal Input Range 90-264VAC, 47-440 Hz
- Regulated Output and Low Ripple and Low Noise
- Isolation Class II
- -40°C Starting
- Screw Terminal For Optional
- CE, CB, UL Approval
- 3-Year Product Warranty



E199779 LEVEL3

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)		ASC-3.3S	ASC-5S	ASC-12S	ASC-15S	ASC-24S
Max Output Wattage (W)		20W	30W	30W	30W	30W
Input	Voltage	90-264 VAC or 120-370 VDC				
	Frequency (Hz)	47-440 Hz				
	Current (Full load)	520 mA max. (115 VAC) / 320 mA max. (230 VAC)				
	Inrush Current (<2ms)	23 A max. (115 VAC) / 46 A max. (230 VAC)				
	Leakage Current	0.75 mA max.				
	External Fuse (recommend)	1.5 A slow blow type				
Output	Voltage (V.DC.)	3.3V	5V	12V	15V	24V
	Voltage Accuracy	±2%				
	Current (mA) max	6000	6000	2500	2000	1250
	Line Regulation (LL-HL) (typ.)	±1%				
	Load Regulation (8-100%) (typ.)	±1%				
	Minimum Load	5%	8%	2%	2%	2%
	Maximum Capacitive Load	80000 uF	70000 uF	14000 uF	11000 uF	5900 uF
	Ripple	<0.2% Vout +40mV max (Vp-p)				
	Noise	<0.5% Vout +50mV max (Vp-p)				
	Efficiency	75%	79%	82%	82%	82%
	Hold-up Time	15 ms min.				
	Switching Frequency	100 kHz				
Protection	Over Power Protection	Hiccup technique, auto-recovery				
	Over Voltage Protection	Zener diode clamp				
	Short Circuit Protection	Hiccup mode, indefinite (automatic recovery)				
Isolation	Input-Output (V.AC)	3000 V				
Environment	Operating Temperature	-40°C…+70°C (with derating)				
	Storage Temperature	-40°C…+85°C				
	Temperature Coefficient	±0.02%/°C				
	Humidity	95% RH				
	MTBF	>200,000 h @ 25°C (MIL-HDBK-217F)				
Physical	Dimension (L x W x H)	3.52 x 2.52 x 0.98 Inches (89.5 x 64.1 x 25.0 mm) Tolerance ±0.5 mm				
	Case Material	Plastic resin with Fiberglass (flammability to UL 94V-0)				
	Weight	212 g				
	Cooling Method	Free air convection				
Safety	Agency Approvals	UL/cUL, CE, CB				
EMC	EMI (Conducted & Radiated Emission)	EN 55022 class B				
	EMS (Noise Immunity)	EN 55024				

Cool Power Solutions Oy
Vanha Rajamäentie 173
FI-05200 Rajamäki
FINLAND

Tel: +358-9-2906 1990
Fax: +358-9-2906 1991

Email: info@cps.fi
Web: www.cps.fi

ASC Series

30 W Switching Power Module for PCB Mounting

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ELECTRICAL SPECIFICATIONS

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

Model No. (Dual、Triple Output)		ASC-5D	ASC-12D	ASC-15D	ASC-5S12S	ASC-5S12D	ASC-5S15D
Max Output Wattage (W)		30W	30W	30W	30W	30W	30W
Input	Voltage	90-264 VAC or 120-370 VDC					
	Frequency (Hz)	47-440 Hz					
	Current (Full load)	520 mA max. (115 VAC) / 320 mA max. (230 VAC)					
	Inrush Current (<2ms)	23 A max. (115 VAC) / 46 A max. (230 VAC)					
	Leakage Current	0.75 mA max.					
	External Fuse (recommend)	1.5 A slow blow type					
Output	Voltage (V.DC.)	±5V	±12V	±15V	5/12	5/±12	5/±15
	Voltage Accuracy	±5%			±2% / ±5%		
	Current (mA) max	±3000	±1250	±1000	3000/1250	3000/±630	3000/±500
	Line Regulation (LL-HL) (typ.)	±1%			±1% / ±5%		
	Load Regulation (20-100%) (typ.)	±3%			±2% / ±6%		
	Minimum Load	2%	3%	1%	20%	20%	20%
	Maximum Capacitive Load	±50000 uF	±14000 uF	±10000 uF	13200 / 6400 uF	15000 / ±5400 uF	10000 / ±3200 uF
	Ripple	<0.2% Vout +40mV max (Vp-p)					
	Noise	<0.5% Vout +50mV max (Vp-p)					
	Efficiency	79%	82%	80%	79%	79%	78%
	Hold-up Time	15 ms min.					
	Switching Frequency	100 kHz					
Protection	Over Power Protection	Hiccup technique, auto-recovery					
	Over Voltage Protection	Zener diode clamp					
	Short Circuit Protection	Hiccup mode, indefinite (automatic recovery)					
Isolation	Input-Output (V.AC)	3000 V					
Environment	Operating Temperature	-40°C…+70°C (with derating)					
	Storage Temperature	-40°C…+85°C					
	Temperature Coefficient	±0.02%/°C					
	Humidity	95% RH					
	MTBF	>200,000 h @ 25°C (MIL-HDBK-217F)					
Physical	Dimension (L x W x H)	3.52 x 2.52 x 0.98 Inches (89.5 x 64.1 x 25.0 mm) Tolerance ±0.5 mm					
	Case Material	Plastic resin with Fiberglass (flammability to UL 94V-0)					
	Weight	212 g					
	Cooling Method	Free air convection					
Safety	Agency Approvals	UL/cUL, CE, CB					
EMC	EMI (Conducted & Radiated Emission)	EN 55022 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 to add Varistor 14S471K at L / N input side in parallel.
3. It's necessary 10R / 15φ thermistor at L input side in series connection.
4. The triple output required a minimum 20% loading on the output to maintain specified regulation. Operation under no-load condition will not damage these devices; however they may not meet all listed specification.
5. Load regulation for triple output:
   Main output (V1): 20% to 100% with 20% to 100% balanced on auxiliaries.
   Auxiliary outputs (V2 and V3): 20% to 100% balanced on all outputs.
6. Cross regulation for triple output:
   Main output 100% load, auxiliary 100%, other auxiliary 25% to 100%.
   Auxiliary outputs (V2 and V3): Main output 100% load, auxiliary 100%, other auxiliary 25% to 100% or main output 25%, auxiliary 25%, other auxiliary 25% to 100%.

Cool Power Solutions Oy
Vanha Rajamäentie 173
FI-05200 Rajamäki
FINLAND

Tel: +358-9-2906 1990
Fax: +358-9-2906 1991

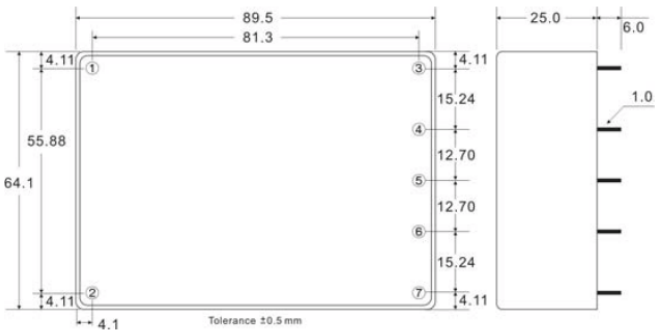
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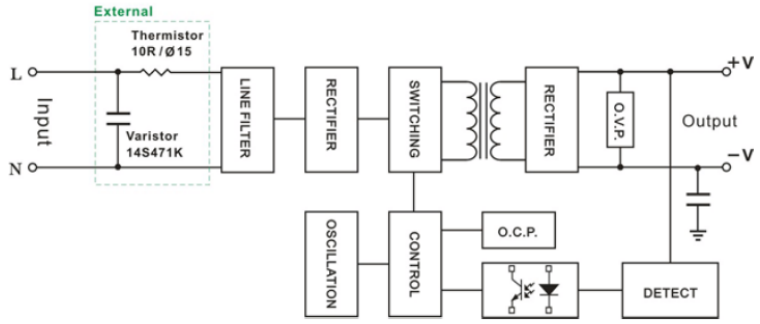
MECHANICAL DIMENSION (Top View)



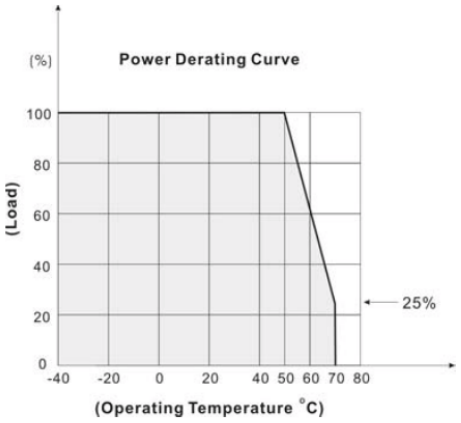
PIN#	Single	Dual	5S/12S	Triple
1	AC IN (N)	AC IN (N)	AC IN (N)	AC IN (N)
2	AC IN (L)	AC IN (L)	AC IN (L)	AC IN (L)
3	+DC OUT	+DC OUT	+12V OUT	+DC OUT
4	NO PIN	NO PIN	+5V OUT	+5V OUT
5	-DC OUT	COMMON	+12V RTN	COMMON
6	NO PIN	NO PIN	+5 VRTN	+5V RTN
7	NO CONNECT	-DC OUT	NO PIN	-DC OUT

BLOCK DIAGRAM

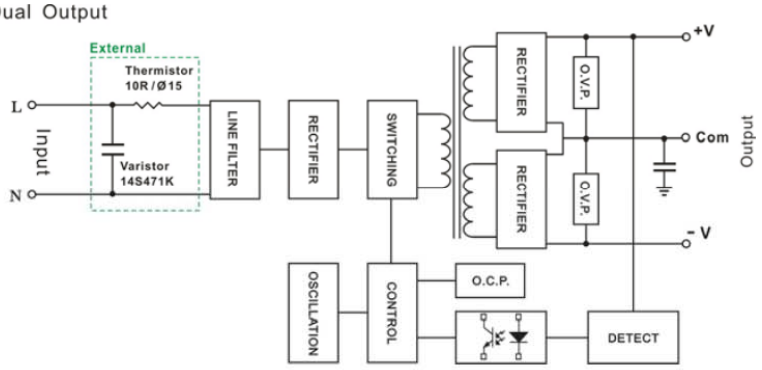
Single Output



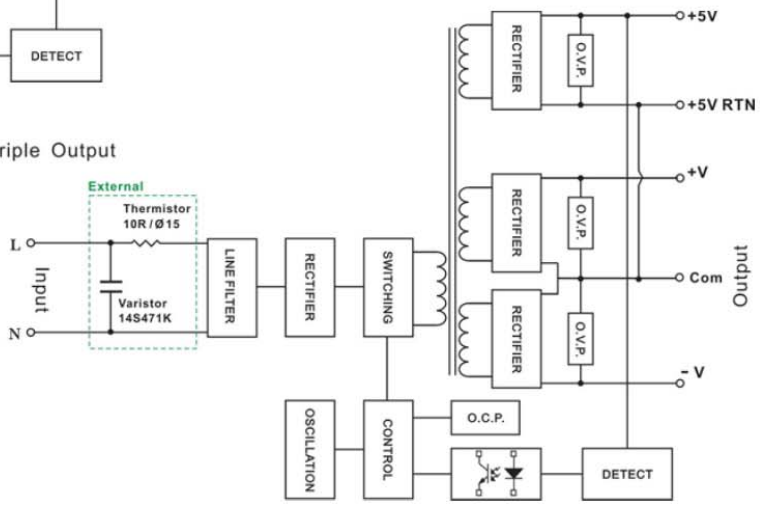
DERATING



Dual Output



Triple Output



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FI-05200 Rajamäki
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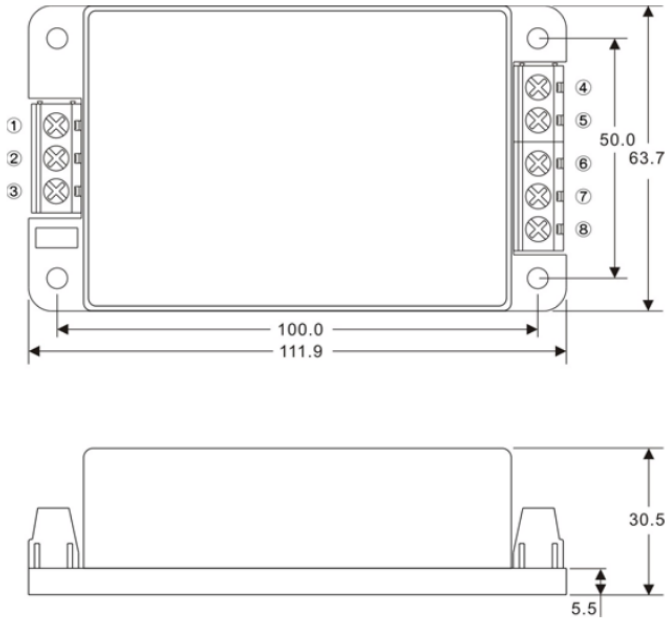
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SCREW TERMINAL

ASC-A2



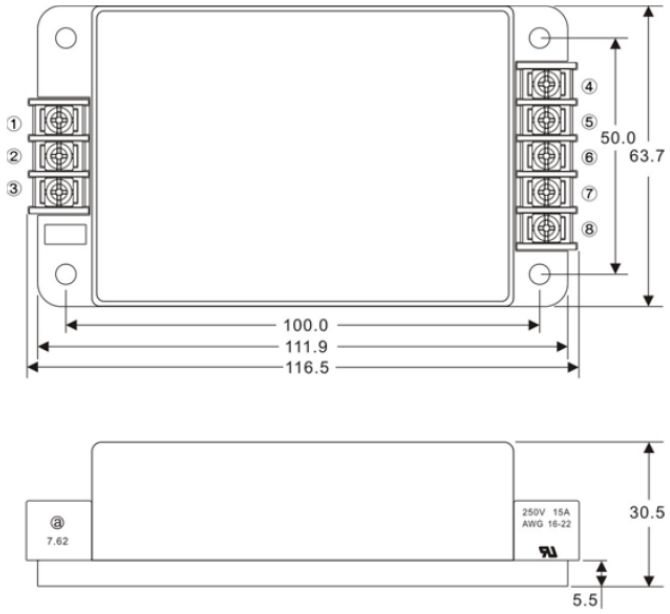
PIN#	Single	Dual	5S/12S	Triple
1	NOCONNECT	NOCONNECT	NOCONNECT	NOCONNECT
2	AC IN (N)	AC IN (N)	AC IN (N)	AC IN (N)
3	AC IN (L)	AC IN (L)	AC IN (L)	AC IN (L)
4	+DC OUT	+DC OUT	+12V OUT	+DC OUT
5	NOCONNECT	NOCONNECT	+5V OUT	+5V OUT
6	-DC OUT	COMMON	+12V RTN	COMMON
7	NOCONNECT	NOCONNECT	+5V RTN	+5V RTN
8	NOCONNECT	-DC OUT	NOCONNECT	-DC OUT



ASC-A5



PIN#	Single	Dual	5S/12S	Triple
1	NOCONNECT	NOCONNECT	NOCONNECT	NOCONNECT
2	AC IN (N)	AC IN (N)	AC IN (N)	AC IN (N)
3	AC IN (L)	AC IN (L)	AC IN (L)	AC IN (L)
4	+DC OUT	+DC OUT	+12V OUT	+DC OUT
5	NOCONNECT	NOCONNECT	+5V OUT	+5V OUT
6	-DC OUT	COMMON	+12V RTN	COMMON
7	NOCONNECT	NOCONNECT	+5V RTN	+5V RTN
8	NOCONNECT	-DC OUT	NOCONNECT	-DC OUT



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