



5 Watt Ultraminiature Modular Switching Power Supplies

APC series

KEY FEATURES

- Switching Power Module for PCB Mountable
- Fully Encapsulated Plastic Case
- Universal Input Range 90-264VAC, 47-440 Hz
- Regulated Output
- Low Ripple and Noise
- High Efficiency
- CE, cUL, TUV Approvals
- 2-Year Product Warranty



ELECTRICAL SPECIFICATIONS

Model No. (Single Output)	APC-3.3S	APC-5S	APC-12S	APC15S	APC24S
Max Output Wattage (W)	5W	5W	5W	5W	5W
Input	Voltage				
	90-264 VAC or 120-370 VDC				
	Frequency (Hz)				
	47-440 Hz				
	Current (Full load)				
	110 mA max. (115 VAC) / 70 mA max. (230 VAC)				
Output	Inrush Current (<2ms)				
	10 A max. (115 VAC) /20 A max. (230 VAC)				
	Leakage Current				
	0.75 mA max.				
	External Fuse (recommend)				
	1.5 A slow blow type				
	Voltage (V.DC.)				
	3.3V				
	5V				
	12V				
	15V				
	24V				
Voltage Accuracy					
±2%					
Current (mA) max					
1500					
1000					
416					
333					
200					
Line Regulation (LL-HL) (typ.)					
±0.3%					
Load Regulation (5-100%) (typ.)					
±0.5%.					
Minimum Load					
4%					
1%					
1%					
0%					
0%					
Maximum Capacitive Load					
470-23,000µF depending on model					
Ripple					
<0.2% Vout +40mV max (Vp-p)					
Noise					
<0.5% Vout +50mV max (Vp-p)					
Efficiency					
62%					
65%					
70%					
70%					
71%					
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)				
	3000V				
	Input-FG (V.AC)				
1500V					
Output-FG (V.AC)					
500V					
Environment	Operating Temperature				
	-25°C...+70°C (with derating)				
	Storage Temperature				
	-40°C...+85°C				
	Temperature Coefficient				
±0.02%/°C					
Humidity					
95% RH					
MTBF					
>300,000 h @ 25°C (MIL-HDBK-217F)					
Physical	Dimension (L x W x H)				
	2.17 x 1.77 x 0.81 Inches (55.0 x 45.0 x 20.5 mm) Tolerance ±0.5 mm				
	Case Material				
	Plastic resin with Fiberglass (flammability to UL 94V-0)				
Weight					
80 g					
Cooling Method					
Free air convection					
Safety	Agency Approvals				
UL/cUL, CE, TUV					
EMC	EMI (Conducted & Radiated Emission)				
	EN 55022 class B				
EMS (Noise Immunity)					
EN 50082-1					

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

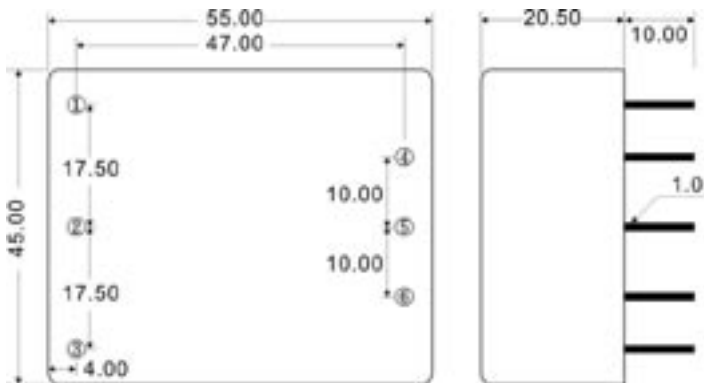


ELECTRICAL SPECIFICATIONS

Model No. (Dual Output)	APC-5D	APC-12D	APC15D	
Max Output Wattage (W)	5W	5W	5W	
Input	Voltage			
	90-260 VAC or 120-370 VDC			
	Frequency (Hz)			
	47-440 Hz			
	Current (Full load)			
	110 mA max. (115 VAC) / 70 mA max. (230 VAC)			
Inrush Current (<2ms)				
10 A max. (115 VAC) /20 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
	Voltage Accuracy	±2%		
	Current (mA) max	±500	±200	±160
	Line Regulation (LL-HL) (typ.)	±0.3%		
	Load Regulation (5-100%) (typ.)	±0.5%.		
	Minimum Load	0%	0%	3%
	Maximum Capacitive Load	470-23,000µF depending on model		
	Ripple	<0.2% Vout +40mV max (Vp-p)		
	Noise	<0.5% Vout +50mV max (Vp-p)		
	Efficiency	70%	67%	67%
	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)	3000V		
	Input-FG (V.AC)	1500V		
	Output-FG (V.AC)	500V		
Environment	Operating Temperature	-25°C...+70°C (with derating)		
	Storage Temperature	-40°C...+85°C		
	Temperature Coefficient	±0.02%/°C		
	Humidity	95% RH		
	MTBF	>300,000 h @ 25°C (MIL-HDBK-217F)		
Physical	Dimension (L x W x H)	2.17 x 1.77 x 0.81 Inches (55.0 x 45.0 x 20.5 mm) Tolerance ±0.5 mm		
	Case Material	Plastic resin with Fiberglass (flammability to UL 94V-0)		
	Weight	80 g		
	Cooling Method	Free air convection		
Safety	Agency Approvals	UL/cUL, CE, TUV		
EMC	EMI (Conducted & Radiated Emission)	EN 55022 class B		
	EMS (Noise Immunity)	EN 50082-1		

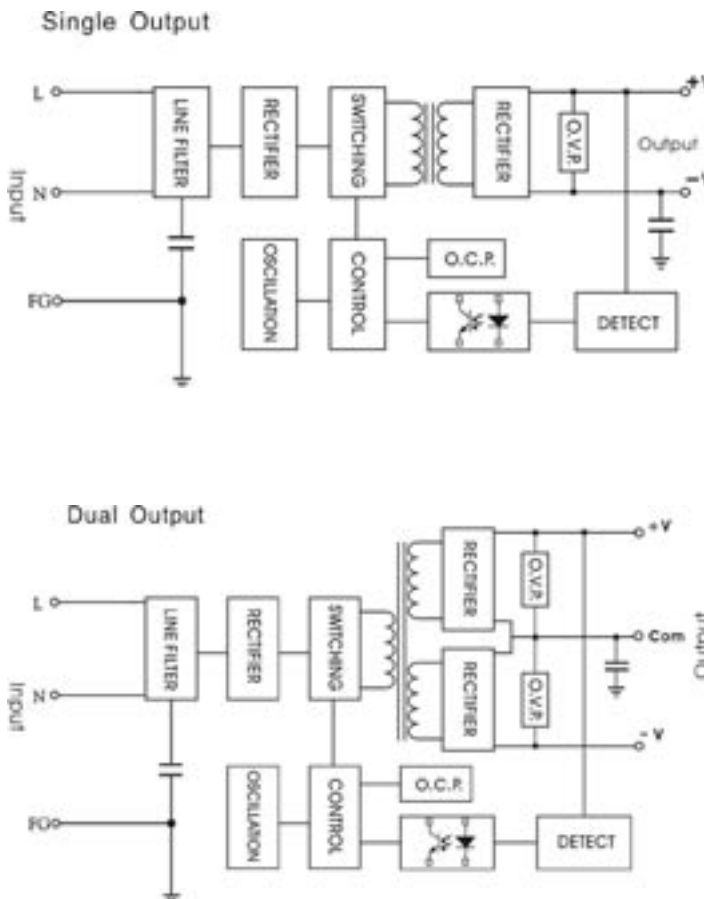
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MECHANICAL DIMENSION (Top View)



PIN#	SINGLE	Dual
1	FG	FG
2	AC IN (N)	AC IN (N)
3	AC IN (L)	AC IN (L)
4	-DC OUT	-DC OUT
5	NO PIN	COMMON
6	+DC OUT	+DC OUT

BLOCK DIAGRAM



DERATING

