

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
- Screw Terminal For Optional
- CE, UL, TUV Approval
- 3-Years Product Warranty



ELECTRICAL SPECIFICATIONS

Model No. (Single Output)	APC-3.3S-E1	APC-5S-E1	APC-12S-E1	APC-15S-E1	APC-24S-E1
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)				
	120 mA max. (115 VAC) / 70 mA max. (230 VAC)				
Output	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				
	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					
40000 uF 19000 uF 4000 uF 3500 uF 900 uF					
Ripple					
<0.2% Vout +40mV max (Vp-p)					
Noise					
<0.5% Vout +50mV max (Vp-p)					
Efficiency					
63% 71% 75% 75% 74%					
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				
	-40°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					

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

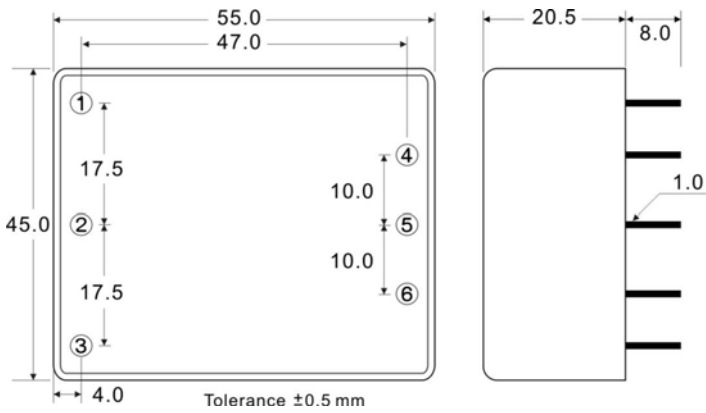
2.Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.

ELECTRICAL SPECIFICATIONS

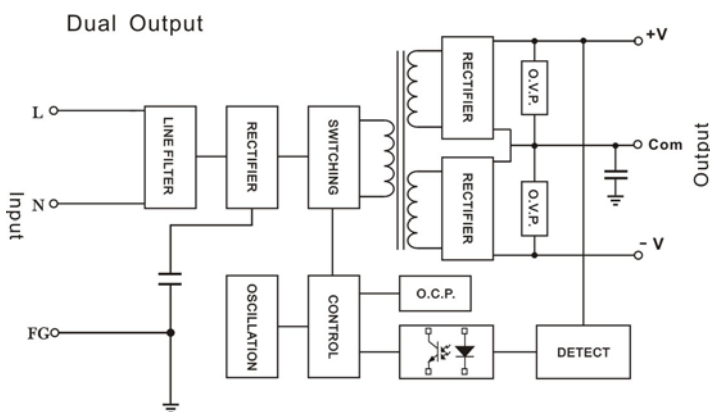
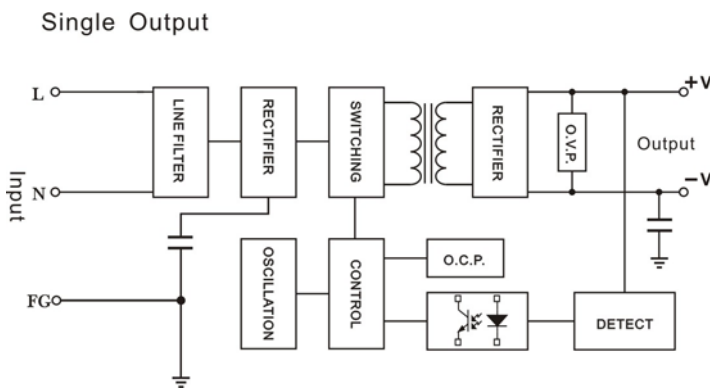
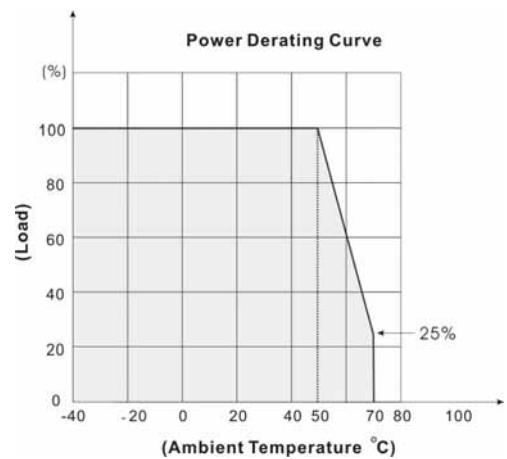
Model No. (Dual Output)	APC-5D-E1	APC-12D-E1	APC-15D-E1	
Max Output Wattage (W)	5W	5W	5W	
Input	Voltage	90-264 VAC or 120-370 VDC		
	Frequency (Hz)	47-440 Hz		
	Current (Full load)	120 mA max. (115 VAC) / 70 mA max. (230 VAC)		
	Inrush Current (<2ms)	23 A max. (115 VAC) / 46 A max. (230 VAC)		
	Leakage Current	0.75 mA max.		
	External Fuse (recommend)	1.5 A slow blow type		
Output	Voltage (V.DC.)	±5V	±12V	±15V
	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	±9500 uF	±1400 uF	±950 uF
	Ripple	<0.2% Vout +40mV max (Vp-p)		
	Noise	<0.5% Vout +50mV max (Vp-p)		
	Efficiency	72%	74%	74%
	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	-40°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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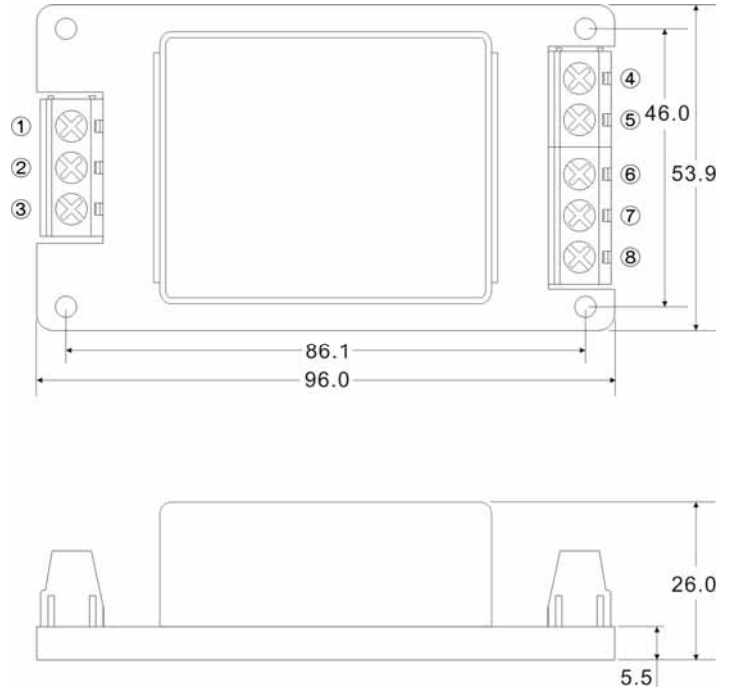
MECHANICAL DIMENSION (Top View)


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


APC-E1 SERIES
5 Watts
SCREW TERMINAL
APC-E1-A2


PIN#	Single	Dual
1	FG	FG
2	AC IN (N)	AC IN (N)
3	AC IN (L)	AC IN (L)
4.	NO CONNECT	NO CONNECT
5	-DC OUT	-DC OUT
6	NO CONNECT	COMMON
7	+DC OUT	+DC OUT
8	NO CONNECT	NO CONNECT


APC- E1-A5


PIN#	Single	Dual
1	FG	FG
2	AC IN (N)	AC IN (N)
3	AC IN (L)	AC IN (L)
4.	NO CONNECT	NO CONNECT
5	-DC OUT	-DC OUT
6	NO CONNECT	COMMON
7	+DC OUT	+DC OUT
8	NO CONNECT	NO CONNECT

