ARCH ELECTRONICS CORP.

AC-DC Power Module

ATCN SERIES 15 Watts

KEY FEATURES

- Switching Power Module for PCB Mountable
- Fully Encapsulated Plastic Case
- Universal Input Range 90-264VAC
- <0.3W No Load Input Power
- High Average Efficiency (25%, 50%, 75%, 100% Load Points)
- Ultra Compact Size: 2.53” x 1.78” x 0.85” Inches
- Screw Terminal For Optional
- Isolation Class II
- Isolation 4KV AC
- CE, 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.

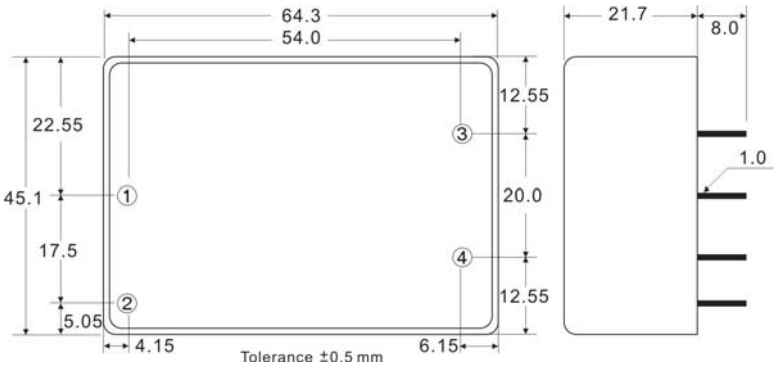
Model No. (Single Output)		ATCN-5S	ATCN-12S	ATCN-15S	ATCN-24S
Max Output Wattage (W)		15W			
Input	Voltage	90-264 VAC or 120-370 VDC			
	Frequency (Hz)	50 / 60 Hz			
	Current (Full load)	315 mA max. (115 VAC) / 195 mA max. (230 VAC)			
	Inrush Current	15 A max. (115 VAC) / 30 A max. (230 VAC) (cold start)			
	Leakage Current	0.25 mA max. (at <240 VAC)			
	External Fuse (mandatory)	1.5 A slow blow type			
Output	Voltage (V.DC.)	5V	12V	15V	24V
	Voltage Accuracy	±2%			
	Current (mA) max	3000	1250	1000	625
	Line Regulation (LL-HL) (typ.)	±0.5%			
	Load Regulation (10-100%) (typ.)	±1%			
	Maximum Capacitive Load (at 100-240 VAC)	1100uF	200uF	200uF	47uF
	Ripple & Noise (typ.)	100mV (Vp-p)	120mV (Vp-p)	200mV (Vp-p)	240mV (Vp-p)
	Efficiency (at 230 VAC)	78%	82%	81%	82%
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)	4000V			
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)	2.53 x 1.78 x 0.85 Inches (64.3 x 45.1 x 21.7 mm) Tolerance ±0.5 mm			
	Case Material	Plastic resin with Fiberglass (flammability to UL 94V-0)			
	Weight	92 g			
	Cooling Method	Free air convection			
Safety	Agency Approvals	UL/cUL, CE			
EMC	EMI (Conducted & Radiated Emission)	EN 55022 class B			
	EMS (Noise Immunity)	EN 55024			

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NOTE

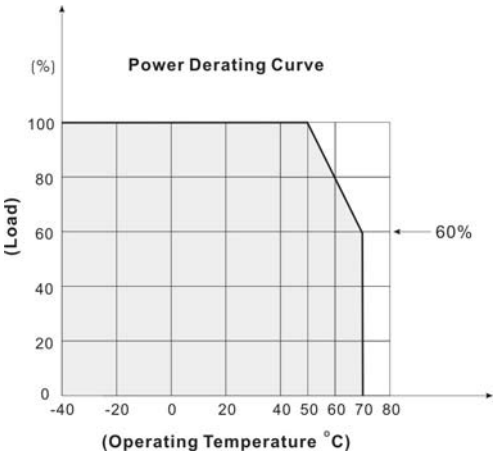
1. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
2. It's necessary to add Varistor 14S471K at L / N input side in parallel.

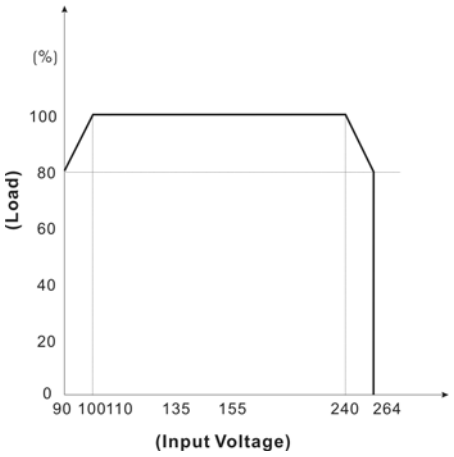
MECHANICAL DIMENSION (Top View)



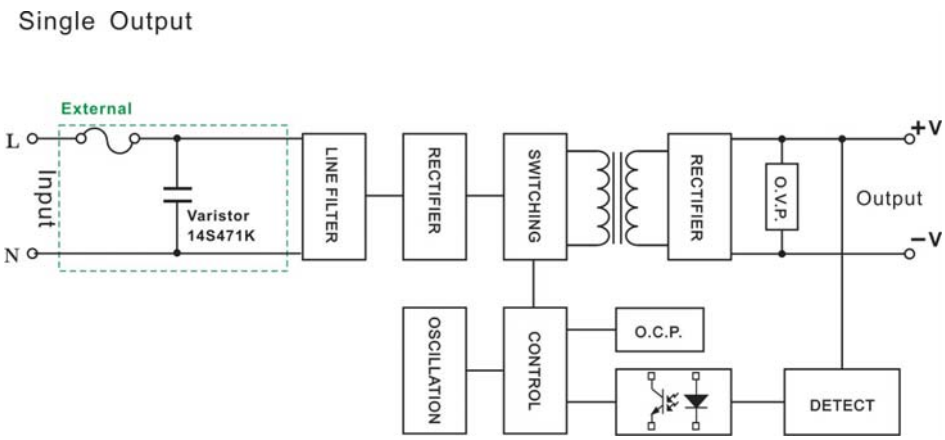
PIN#	Single
1	AC IN (N)
2	AC IN (L)
3	-DC OUT
4	+DC OUT

DERATING





BLOCK DIAGRAM



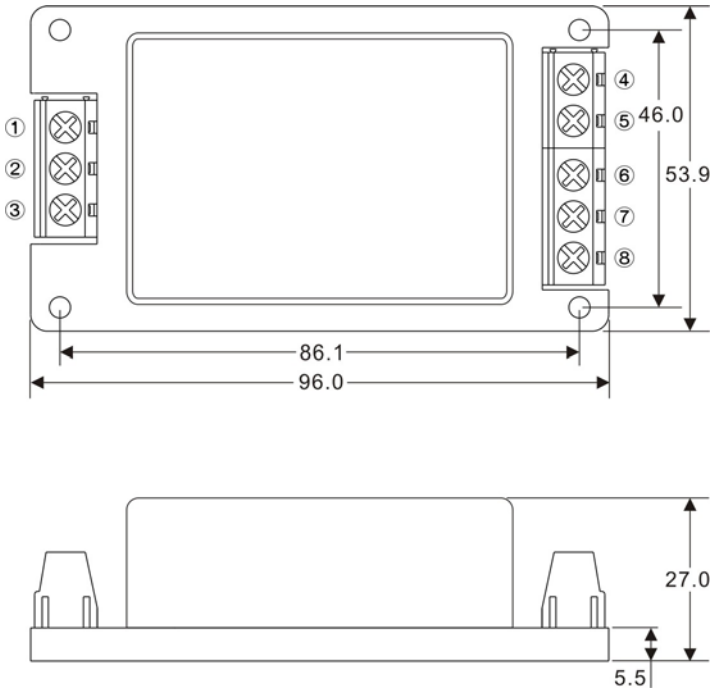
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SCREW TERMINAL

ATCN-A2



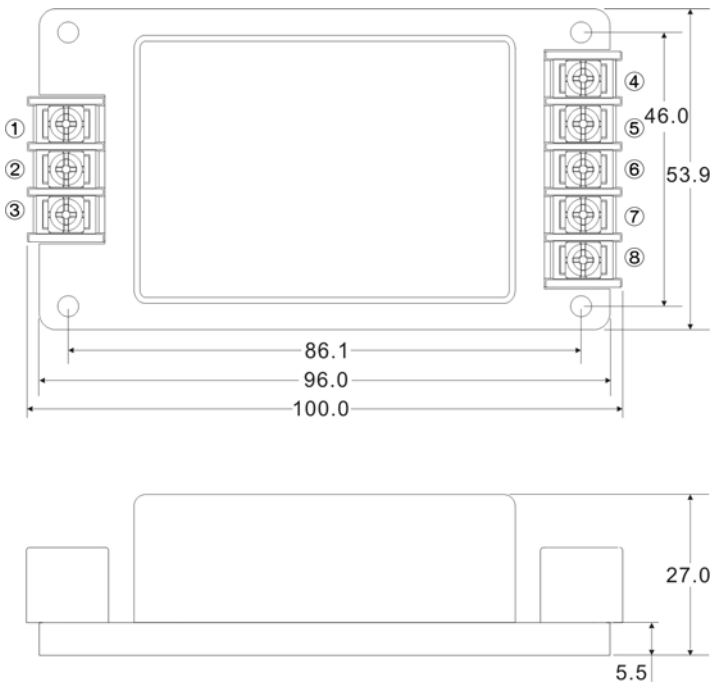
PIN#	Single
1	NO CONNECT
2	AC IN (N)
3	AC IN (L)
4.	NO CONNECT
5	-DC OUT
6	NO CONNECT
7	+DC OUT
8	NO CONNECT



ATCN-A5



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



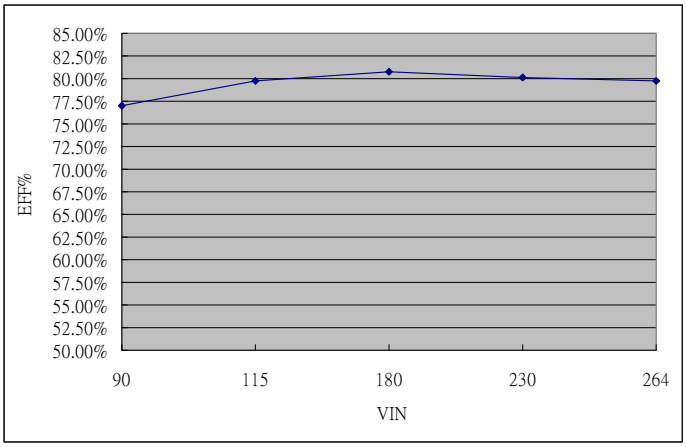
ATCN SERIES 15 Watts

EFFICIENCY VERSUS LOAD

ATCN-5S

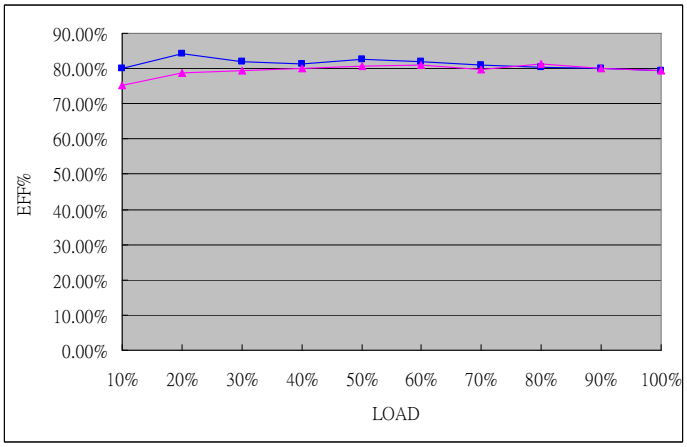
VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	77.0	79.8	80.8	80.1	79.8



LOAD VS Efficiency

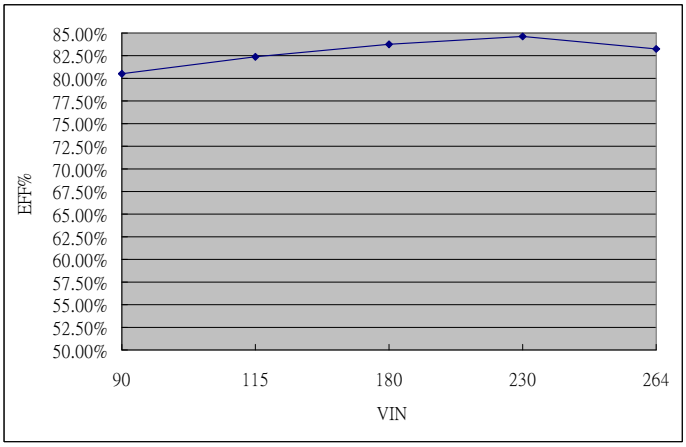
Load (%)	10	20	30	40	50
115V (%)	80.0	84.2	81.9	81.4	82.7
230V (%)	75.1	78.8	79.6	79.9	80.8
Load (%)	60	70	80	90	100
115V (%)	82.1	80.9	80.3	80.2	79.4
230V (%)	81.1	79.7	81.4	80.1	79.3



ATCN-12S

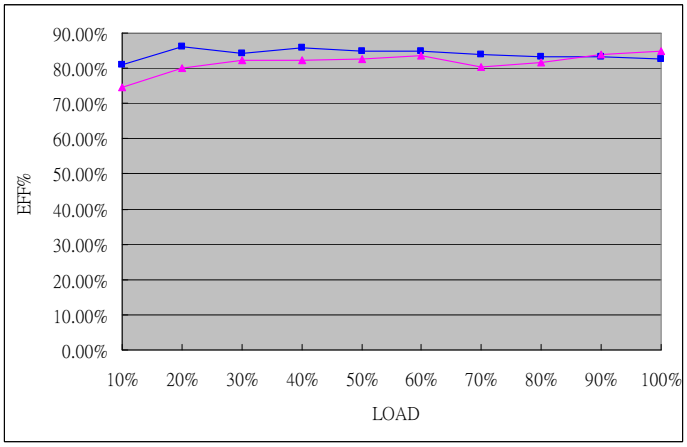
VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	80.5	82.4	83.7	84.6	83.3



LOAD VS Efficiency

Load (%)	10	20	30	40	50
115V (%)	81.1	86.1	84.2	85.9	85.0
230V (%)	74.5	80.0	82.4	82.3	82.6
Load (%)	60	70	80	90	100
115V (%)	85.0	83.9	83.1	83.3	82.6
230V (%)	83.6	80.2	81.7	83.8	84.8



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EFFICIENCY VERSUS LOAD

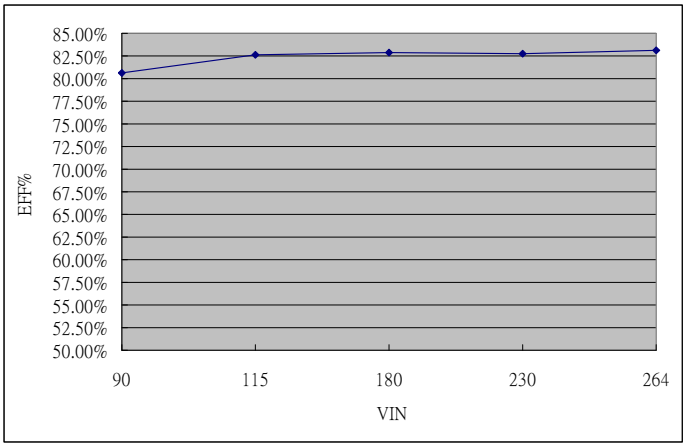
ATCN-15S

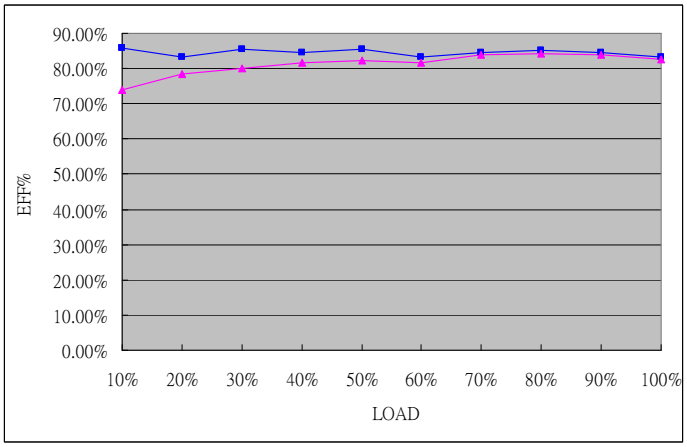
VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	80.6	82.6	82.9	82.7	83.1

LOAD VS Efficiency

Load (%)	10	20	30	40	50
115V (%)	85.9	83.3	85.7	84.7	85.4
230V (%)	74.0	78.5	79.9	81.7	82.3
Load (%)	60	70	80	90	100
115V (%)	83.4	84.5	85.1	84.6	83.2
230V (%)	81.7	84.0	84.3	84.0	82.6





ATCN-24S

VIN VS Efficiency

Input Voltage (V)	90	115	180	230	264
Efficiency (%)	79.9	82.3	84.9	85.8	84.2

LOAD VS Efficiency

Load (%)	10	20	30	40	50
115V (%)	79.5	86.3	84.6	86.5	85.4
230V (%)	70.1	80.0	79.5	80.7	81.7
Load (%)	60	70	80	90	100
115V (%)	87.3	84.6	83.8	83.0	82.7
230V (%)	83.2	80.0	81.6	83.7	86.3

