

Features

- ◇ 1 Watt Output Power
- ◇ Output Current up to 303mA
- ◇ Un-Regulation Output
- ◇ ±10% Range Input Voltage
- ◇ Efficiency up to 80%
- ◇ 3000 VDC Isolation Voltage
- ◇ Single-In-Line Package (SIP)
- ◇ Industrial Standard Pin-out
- ◇ UL94V-0 Package Material
- ◇ -40~85°C Operating Temperature Range
(Non-Derating)
- ◇ Reasonable Cost
- ◇ 3 Years Warranty



Description

A11NH is a 1 Watt series in a miniature SIP package, and allows a +/-10% range input voltage of 5V, 12V and 24 to provide a standard output voltage of 3.3V, 5V, 12V, and 15V.

Applications

- △ Automatic Control System
- △ Industry Computer
- △ Communication System
- △ Distribute Power System
- △ Movable/Portable Test Equipment
- △ Local Power System
- △ Other Applications meet Specifications.

General Specifications

Parameter	Condition	Min.	Typ.	Max.
Storage Temperature	Ambient	-40	---	+125 °C
Operating Temperature	Ambient	-40	---	+85 °C
	Case	-40	---	+90 °C
Relative Humidity		---	---	95 %
Isolation Voltage	Input to Output, 60 sec.	3 KV	---	---
Isolation Resistance	Input to Output	10 G ohm	---	---
Isolation Capacitance	Input to Output	---	---	120 pF
Switching Frequency	Max. Load	---	80 KHz	---
MTBF	Vin-N, Max. Load, 25°C	---	2 Mhrs	---
Weight	Epoxy	---	2.0 g	---
Dimensions	See Package Dimensions	0.45 x T X 0.4 inch		
Case Material	Non-Conductive Black Plastic (meets UL94V-0)			

Selection Guide

Part Number	Input			Output			Efficiency Load	Regulation	Cap. Load ⁽⁷⁾
	Voltage	Current		Voltage	Current				
	Nominal (Low ~ High)	No Load	Max.Load	Typ.	Min.	Max.	Max. Load	Max.	Max.
		Typ.	Typ.				Typ.		
VDC	mA	mA	VDC	mA	mA	%	%	μF	
A11NH-0503S	5 (4.5~5.5)	40	271	3.3	6.1	303	74	10	100
A11NH-0505S			257	5	4	200	78	10	100
A11NH-0512S			256	12	1.7	84	79	7	100
A11NH-0515S			255	15	1.3	67	79	7	100
A11NH-1203S	12 (10.8~13.2)	20	110	3.3	6.1	303	76	8	100
A11NH-1205S			106	5	4	200	79	8	100
A11NH-1212S			105	12	1.7	84	80	6	100
A11NH-1215S			105	15	1.3	67	80	6	100
A11NH-2403S	24 (21.6~26.4)	10	58	3.3	6.1	303	73	7	100
A11NH-2405S			55	5	4	200	77	7	100
A11NH-2412S			55	12	1.7	84	77	5	100
A11NH-2415S			54	15	1.3	67	78	5	100

Note:

- 1) All specifications are measured at nominal input voltage, constant resistive load between Min. and Max. output current, and probe bandwidth should be under 20MHz, Ta = +25°C.
- 2) When Load is lower than Min. output current or under no-Load, it will not damage the devices; however, it may not meet all specifications.
- 3) Output Ripple & Noise Test please refer to E-Chin Technology Co., Ltd. proposed test-method.
- 4) Load Regulation and Line Regulation calculating please refer to E-Chin Technology Co., Ltd. proposed formula.
- 5) An external fuse is needed at the front end of DC/DC converters for protection based on surge current and maximum input current when settle it in recommended.
- 6) "Vin-H" means "Vin-High", "Vin-N" means "Vin-Nominal", and "Vin-L" means "Vin-Low".
- 7) Total Capacitive Loads of output should be lower than this value.
- 8) Other Input Voltages, Output Voltages and Specifications may be available, please contact us.

Input Specifications

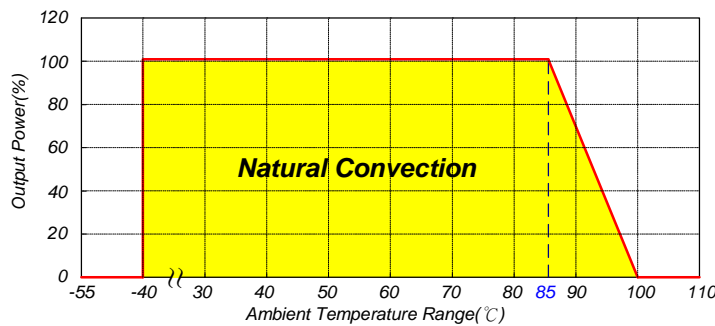
Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range	5VDC models	4.5	5	5.5 V
	12VDC models	10.8	12	13.2 V
	24VDC models	21.6	24	26.4 V
Input Filter	All models	Internal Capacitor		

Output Specifications

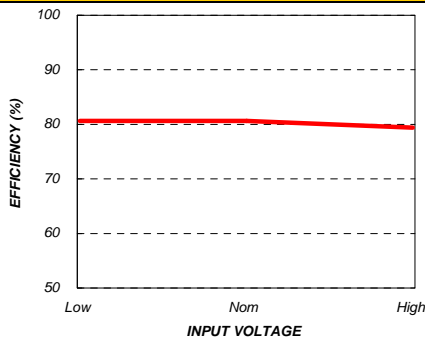
Parameter	Condition	Min.	Typ.	Max.
Output Voltage Accuracy	Vin-N, Max. Load	---	± 1	± 3 %
Line Regulation	Vin-L to Vin-H @ Max. Load	---	± 1.2	± 1.5 %
Load Regulation	Io = 20% to 100% Load @ Vin-N	See Model Selection Guide		
Temperature Drift	Lowest to Highest Temp.	---	± 0.01	± 0.02 %/°C
Ripple & Noise	Peak to Peak, Each Output, 20MHz	---	75	100 mV
Short Circuit Protection	Momentary	---	---	0.5 Sec.

Characteristic Curve

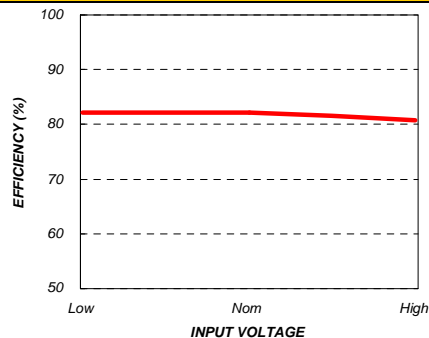
Derating Curve



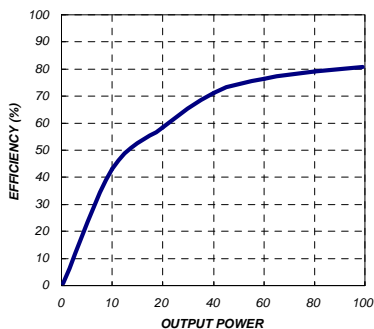
Efficiency-Curve



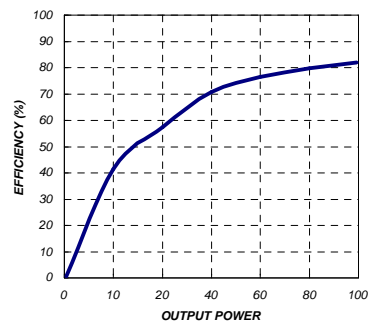
Input Voltage vs. Efficiency, Vo= 3.3V, 5V



Input Voltage vs. Efficiency, Other Output Voltages



Output Power vs. Efficiency, Vo= 3.3V, 5V



Output Power vs. Efficiency, Other Output Voltages

Package Dimension

Front View	Recommend Footprint Details (Top View)										
	<p>Grid: 0.1 inch / 2.54 mm Dot(Drill Hole): Φ 0.8 +0.2 / -0 mm</p>										
Bottom View	Pin Functions										
	<table border="1"> <thead> <tr> <th>Pin No.</th> <th>Pin Functions</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-Vin</td> </tr> <tr> <td>2</td> <td>+Vin</td> </tr> <tr> <td>3</td> <td>-Vout</td> </tr> <tr> <td>4</td> <td>+Vout</td> </tr> </tbody> </table>	Pin No.	Pin Functions	1	-Vin	2	+Vin	3	-Vout	4	+Vout
Pin No.	Pin Functions										
1	-Vin										
2	+Vin										
3	-Vout										
4	+Vout										

Note:

All dimensions in inch [mm]

Tolerance: XX.X \pm 0.01 [XX.X \pm 0.25]

XX.XX \pm 0.01 [XX.XX \pm 0.25]

Pin pitch tolerance \pm 0.01 [\pm 0.25]

Pin diameter tolerance \pm 0.004 [\pm 0.1]