

Features

- ◇ 1 Watt Output Power
- ◇ Output Current up to 303mA
- ◇ Un-Regulated Output
- ◇ ±10% Input Voltage Range
- ◇ Efficiency up to 80%
- ◇ 1000VDC Isolation Voltage
- ◇ Single-In-Line Package (SIP)
- ◇ Industrial Standard Pin-out
- ◇ UL94V-0 Package Material
- ◇ Operating Temperature Range -40~+85°C
(Non-Derating)
- ◇ 3 Years Warranty



Description

A11N series are isolated 1 Watt DC/DC converters in miniature SIP-4pin packages, and allow a ±10% range input voltage of 5V, 12V and 24V to convert to 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 ℃
Operating Temperature	Ambient	-40	---	+85 ℃
	Case	-40	---	+90 ℃
Relative Humidity		---	---	95 %
Isolation Voltage	Input to Output, 60 sec.	1 KV	---	---
Isolation Resistance	Input to Output	1 G ohm	---	---
Isolation Capacitance	Input to Output	---	---	120 pF
Switching Frequency	Max. Load	---	80 KHz	---
MTBF	Vin-N, Max. Load, 25℃	---	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	
A11N-0303S	3.3 (2.97~3.63)	40	393.5	3.3	6.1	303	77	11	100
A11N-0305S			388.5	5	4	200	78	10	100
A11N-0503S	5 (4.5~5.5)	40	271	3.3	6.1	303	74	10	100
A11N-0505S			257	5	4	200	78	10	100
A11N-0512S			256	12	1.7	84	79	7	100
A11N-0515S			255	15	1.3	67	79	7	100
A11N-1203S	12 (10.8~13.2)	20	110	3.3	6.1	303	76	8	100
A11N-1205S			106	5	4	200	79	8	100
A11N-1212S			105	12	1.7	84	80	6	100
A11N-1215S			105	15	1.3	67	80	6	100
A11N-2403S	24 (21.6~26.4)	10	58	3.3	6.1	303	73	7	100
A11N-2405S			55	5	4	200	77	7	100
A11N-2412S			55	12	1.7	84	77	5	100
A11N-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 the Load is at No-Load or lower than Min. output current, the DC/DC converters will not be damaged; however, all the parameters may be not reaching all specifications listed.
- 3) Output Ripple & Noise Test please refer to E-Chin Technology Co., Ltd. proposed test-method.
- 4) Load Regulation and Line Regulation calculation 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 a protection as a recommended settlement in order to avoid a surge current or a maximum input current.
- 6) "Vin-H" means "Vin-High", "Vin-N" means "Vin-Nominal", and "Vin-L" means "Vin-Low".
- 7) The total Capacitive Loads of output should be lower than the value written above.
- 8) Other Input Voltages, Output Voltages and Specifications would be available, please contact us.

Input Specifications

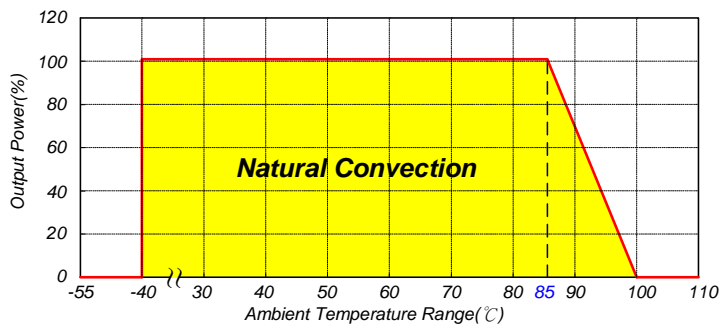
Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range	5VDC models	4.5	5	5.5 V
	12VDC models	10.8	12	13.2 V
	24VDC models	21.6	24	26.4 V
Input Filter	All models	Internal Capacitor		

Output Specifications

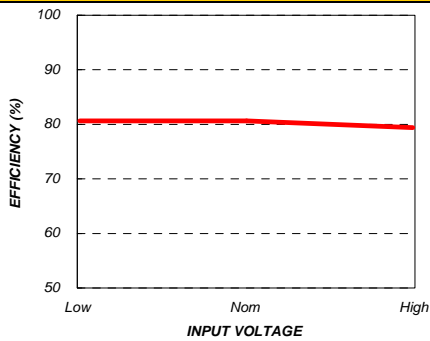
Parameter	Condition	Min.	Typ.	Max.
Output Voltage Accuracy	Vin-N, Max. Load	---	± 1.0	± 3.0 %
Line Regulation	Vin-L to Vin-H @ Max. Load	---	± 1.2	± 1.5 %
Load Regulation	Io = 20% to 100% Load @ Vin-N	See Model Selection Guide		
Temperature Drift	Lowest to Highest Temp.	---	± 0.01	± 0.02 %/°C
Ripple & Noise	Peak to Peak, Each Output, 20MHz	---	75	100 mV
Short Circuit Protection	Limited 0.5 sec. Max.			

Characteristic Curve

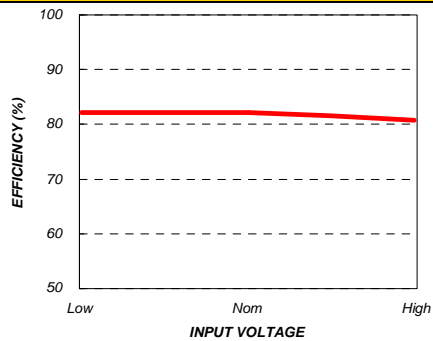
Derating Curve



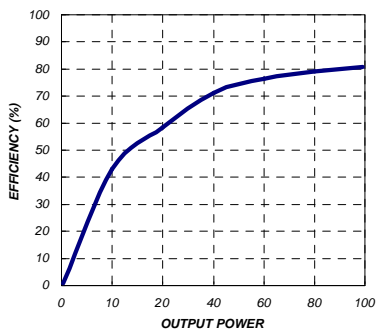
Efficiency-Curve



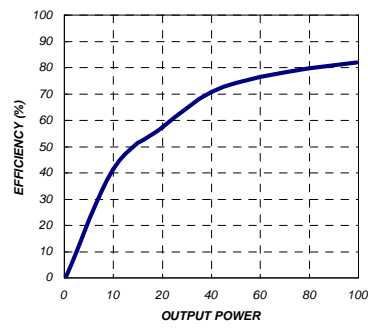
Input Voltage vs. Efficiency, Vo= 3.3V and 5V



Input Voltage vs. Efficiency, Other Output Voltages

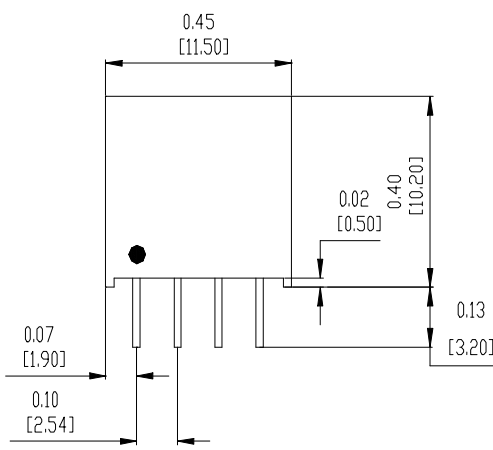
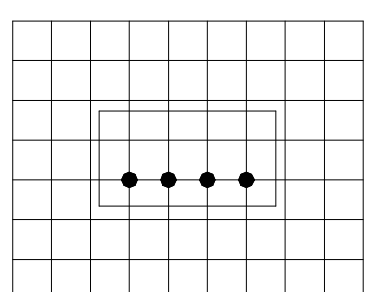
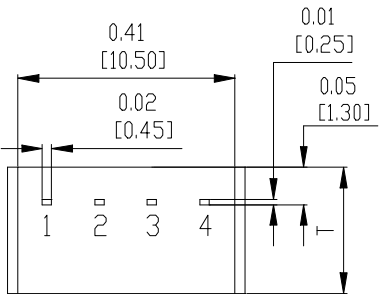


Output Power vs. Efficiency, Vo= 3.3V and 5V



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										
 <p>Note: T: 0.24 [6.1] for A11N-05XXX & A11N-12XXX 0.28 [7.1] for A11N-24XXX</p>	<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± 0.01 [XX.X±0.25]
 XX.XX± 0.01 [XX.XX±0.25]
Pin pitch tolerance ±0.01 [±0.25]
Pin diameter tolerance ±0.004 [±0.1]