

Features

- ◇ 1 Watt Output Power
- ◇ Output Current up to 303mA
- ◇ Un-Regulated Output
- ◇ ±10% Input Voltage Range
- ◇ Efficiency up to 81%
- ◇ 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

B11N series are isolated 1 Watt series in miniature SIP-7pin 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, 15V, ±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.	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°C	---	2 MHrs	---
Weight	Epoxy	---	3.0 g	---
Dimensions	See Package Dimensions			
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.
	VDC	Typ.	Typ.	VDC	mA	mA	Typ.		
B11N-0503S	5 (4.5~5.5)	40	271	3.3	6.1	303	74	10	220
B11N-0505S			257	5	4	200	78	10	220
B11N-0509S			257	9	2.2	110	77	8	220
B11N-0512S			256	12	1.7	84	79	7	220
B11N-0515S			255	15	1.3	67	79	7	220
B11N-0505D			274	± 5	± 2	± 100	73	10	100
B11N-0512D			252	± 12	± 0.8	± 42	80	7	100
B11N-0515D			248	± 15	± 0.7	± 33	80	7	100
B11N-1203S	12 (10.8~13.2)	20	110	3.3	6.1	303	76	8	220
B11N-1205S			106	5	4	200	79	8	220
B11N-1209S			105	9	2.2	110	79	7	220
B11N-1212S			105	12	1.7	84	80	6	220
B11N-1215S			105	15	1.3	67	80	6	220
B11N-1205D			112	± 5	± 2	± 100	75	8	100
B11N-1212D			104	± 12	± 0.8	± 42	81	6	100
B11N-1215D			102	± 15	± 0.7	± 33	81	6	100
B11N-2403S	24 (21.6~26.4)	10	58	3.3	6.1	303	73	7	220
B11N-2405S			55	5	4	200	77	7	220
B11N-2409S			55	9	2.2	110	75	6	220
B11N-2412S			55	12	1.7	84	77	5	220
B11N-2415S			54	15	1.3	67	78	5	220
B11N-2405D			58	± 5	± 2	± 100	73	7	100
B11N-2412D			54	± 12	± 0.8	± 42	79	5	100
B11N-2415D			53	± 15	± 0.7	± 33	79	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.

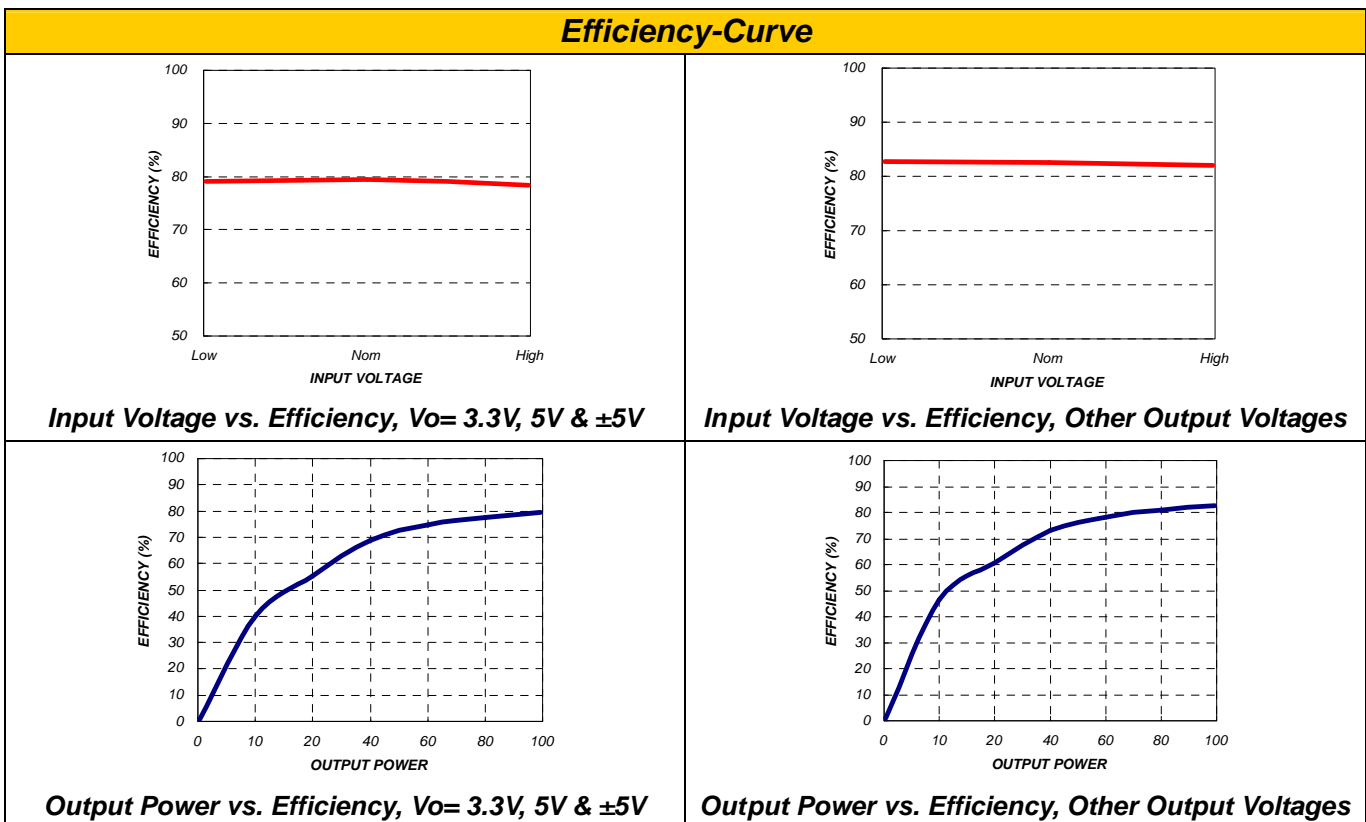
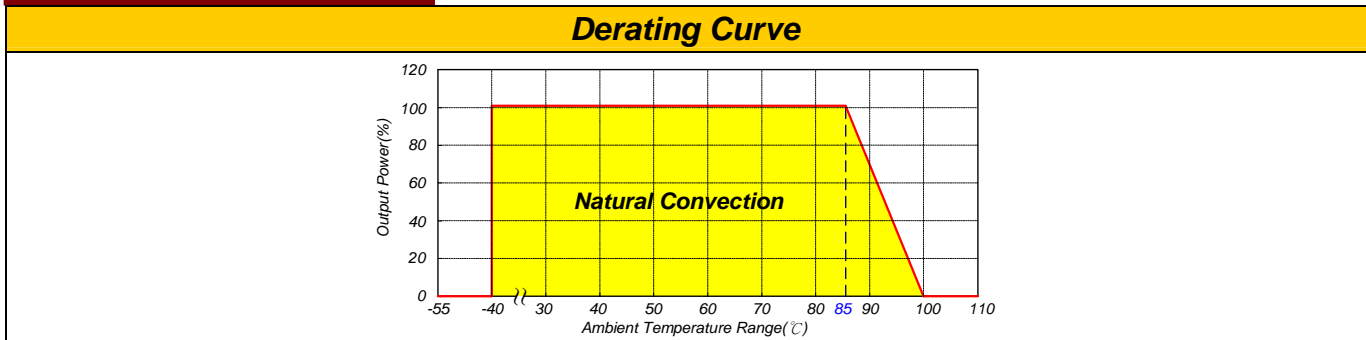
Input Specifications

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		

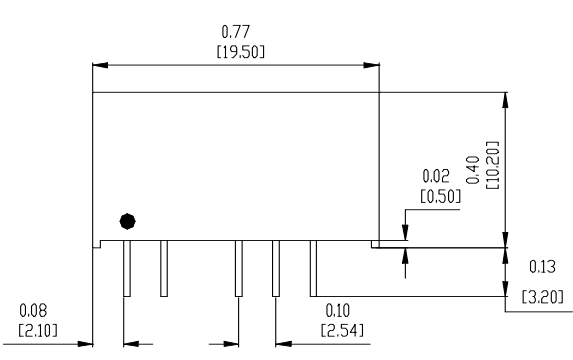
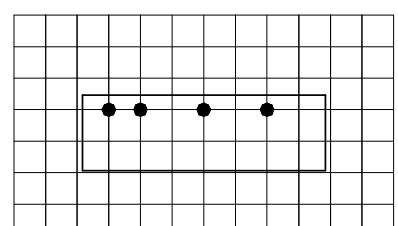
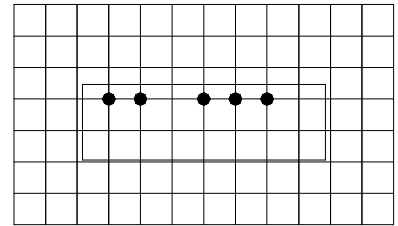
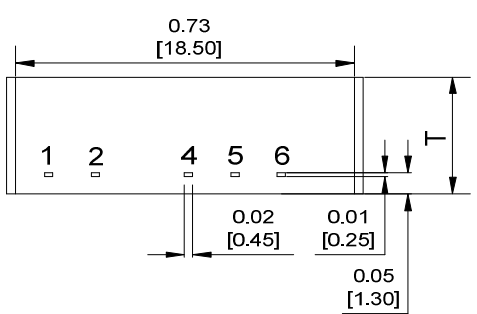
Output Specifications

Parameter	Condition	Min.	Typ.	Max.
Output Voltage Accuracy	Vin-N, Max. Load	---	± 1.0	± 3.0 %
Balance Regulation	Vin-N, Max. Load, Dual Output	---	± 0.5	± 1.0 %
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	---	50	75 mV
Short Circuit Protection	Limited 0.5 sec. Max.			

Characteristic Curve



Package Dimension

Front View	Recommend Footprint Details (Top View)																		
	 <p>Single Output</p>  <p>Dual Output</p> <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 style="background-color: #FFD700;">Pin No.</th> <th style="background-color: #FFD700;">Single Output</th> <th style="background-color: #FFD700;">Dual Output</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>+Vin</td> <td>+Vin</td> </tr> <tr> <td>2</td> <td>-Vin</td> <td>-Vin</td> </tr> <tr> <td>4</td> <td>-Vout</td> <td>-Vout</td> </tr> <tr> <td>5</td> <td>No Pin</td> <td>Common</td> </tr> <tr> <td>6</td> <td>+Vout</td> <td>+Vout</td> </tr> </tbody> </table>	Pin No.	Single Output	Dual Output	1	+Vin	+Vin	2	-Vin	-Vin	4	-Vout	-Vout	5	No Pin	Common	6	+Vout	+Vout
Pin No.	Single Output	Dual Output																	
1	+Vin	+Vin																	
2	-Vin	-Vin																	
4	-Vout	-Vout																	
5	No Pin	Common																	
6	+Vout	+Vout																	
<p>Note:</p> <p>T: 0.24 [6.1] for B11N-05XXX & B11N-12XXX 0.28 [7.1] for B11N-24XXX</p>																			

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]