

Features

- ◇ 1 Watt Output Power
- ◇ Output Current up to 303mA
- ◇ Un-Regulation Output
- ◇ +/-10% Range Input Voltage
- ◇ Efficiency up to 81%
- ◇ 1000 VDC Isolation Voltage
- ◇ Single-In-Line Package (SIP)
- ◇ Industrial Standard Pin-out
- ◇ RoHS Compliance
- ◇ UL94V-0 Package Material
- ◇ -40~85°C Operating Temperature Range
(Non-Derating)
- ◇ 2 Years Warranty
- ◇ Reasonable Cost



Description

B11N series is a 1 Watt series in a miniature SIP package, and consists of +/-10% range input voltage of 5V, 12V, 24V, and provides 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	-55	---	+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	---	2.1 g	---
Dimensions	See Package Dimensions	0.77 x T X 0.4 inch		
Case Material	Non-Conductive Black Plastic (Meets UL94V-0)			

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	
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-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-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-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, 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 these devices; however it may not meet all specifications.
- 3) Output Ripple & Noise Test please refers to ECHIN Technology Co., Ltd. proposed test-method.
- 4) Load Regulation and Line Regulation calculating please refers to ECHIN Technology Co., Ltd. proposed formula.
- 5) An external fuse is needed at the front end of DC/DC converters for protection and base on surge current and maximum input current when settle it in recommended.
- 6) "Vin-H" mean "Vin-High", "Vin-N" mean "Vin-Nominal", and "Vin-L" mean "Vin-Low" in all specifications.
- 7) Total Capacitive Loads of output should be lower than this value.
- 8) Other Input Voltage, Output Voltage and Specifications may be available, please contact us.

Input Specifications

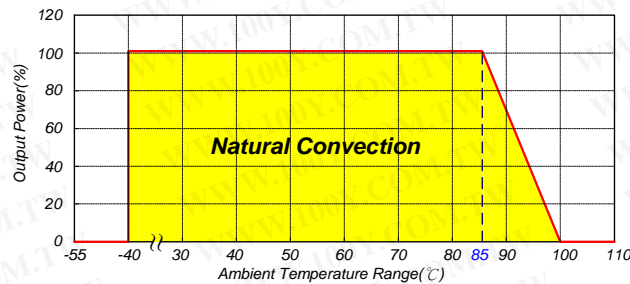
Parameter	Condition	Min.	Typ.	Max.
Input Voltage Range	5VDC models	4.5	5	5.5 V
	12VDC models	10.8	12	13.2 V
	24VDC models	21.6	24	26.4 V
Input Filter	All models	Internal Capacitor		

Output Specifications

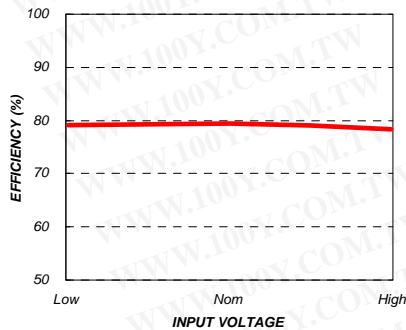
Parameter	Condition	Min.	Typ.	Max.
Output Voltage Accuracy	Vin-N , Max. Load	---	± 1	± 3 %
Output Voltage Balance	Vin-N , Max. Load ,Dual Output	---	± 0.1	± 1 %
Line Regulation	Vin-L to Vin-H @ Max. Load	---	± 1.2	± 1.5 %
Load Regulation	Io = 20% to 100% Load @ Vin-N	See Model Selection Guide		
Temperature Drift	Lowest to Highest Temp.	---	± 0.01	± 0.02 %/°C
Ripple & Noise	Peak to Peak , Each Output,20MHz	---	50	75 mV
Short Circuit Protection	Momentary	---	---	0.5 Sec.

Characteristic Curve

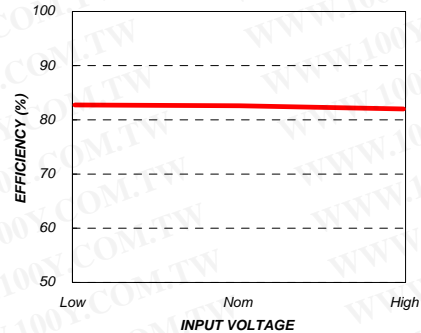
Derating Curve



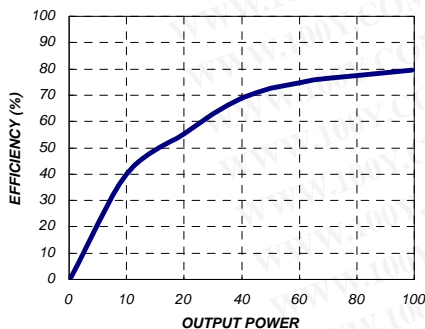
Efficiency-Curve



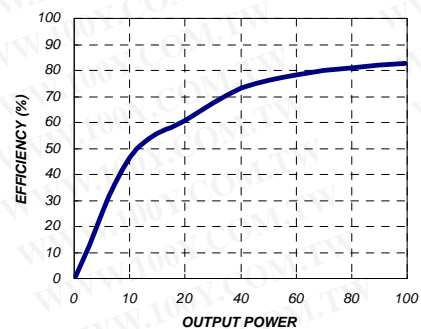
Input Voltage vs. Efficiency, Vo=3.3V,5V & ±5V



Input Voltage vs. Efficiency ,Other Output Voltages



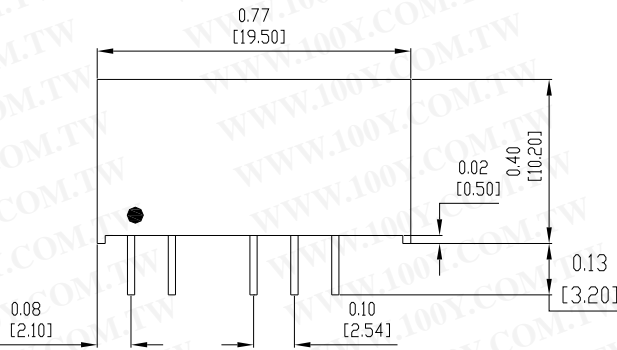
Output Power vs. Efficiency, Vo=3.3V,5V & ±5V



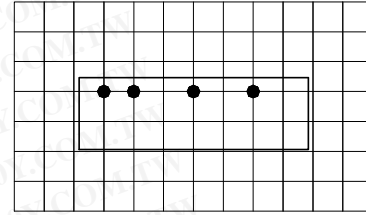
Output Power vs. Efficiency ,Other Output Voltages

Package Dimension

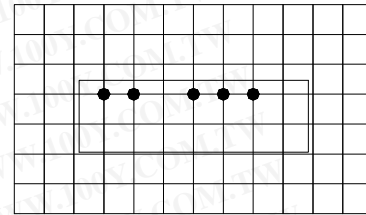
Front View



Recommend Footprint Details (Top View)



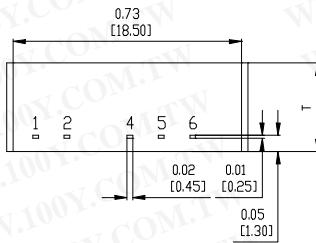
Single Output



Dual Output

Grid : 0.1 inch / 2.54 mm
Dot(Drill Hole): Φ 0.8 +0.2 / -0 mm

Bottom View



Note:

T: 0.24[6.1] for B11N-05XXX & B11N-12XXX
0.28[7.1] for B11N-24XXX

Pin Functions

Pin No.	Single Output	Dual Output
1	+Vin	+Vin
2	-Vin	-Vin
4	-Vout	-Vout
5	N.P.	Common
6	+Vout	+Vout

N.P. : No-Pin

Note:

All dimensions in inch [mm]

Tolerance : XX.X± 0.01 [XX.X±0.25]

XX.XX± 0.005 [XX.XX±0.13]

Pin pitch tolerance ±0.01[±0.25]

Pin dimension tolerance ±0.004 [±0.1]

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