



10/11/2017

FEATURES

- 3.3, 5, 9, 12, 15, 24, and 48VDC Nominal Input Voltages
- 1 Watt Output Power
- RoHS Compliant
- Unregulated Output Types
- Two Package Sizes Available
- DAP Case Material
- No External Components Required
- 5-Pin SIP Package
- High Efficiency up to 82%
- Internal SMD Construction
- Industry Standard Pinout

DESCRIPTION

When board space is at a premium and voltage conversions require low power, the LAN E series miniature converters offer superior solutions at an economical price. A multitude of options and operating ranges allow you to custom-tailor these converters to application requirements. At the compact size of 0.77" x 0.24" x 0.39" or 0.77" x 0.28" x 0.39", the LAN E series provides 1 Watt of power while maintaining specifications over the entire industrial operating temperature range.

Model Number*	MODEL SELECTION TABLE										
Name											
LANE3.33N LANE3.39N SAVDC 303mA 70%	Model Number(1)	Input Voltage Range							Pinnle & Noise	Output Bower	
LANE3.305N LANE3.305N LANE3.305N LANE3.315N LANE3.312N (2.97-3.63VDC) 12VDC 12VDC 84mA 84mA 78%	Woder Number	input voltage Kange		Package 2	Package 1	Package 2	Package 1	Package 2	Kippie & Noise	Output Fower	
LANE3.399N LANE3.39N LANE3.39N LANE3.39N LANE3.31SN LANE3.31SN LANE3.31SN LANE3.31SN LANE3.31SN LANE3.31SN LANE3.31SN LANE3.31SN LANE3.324N LANE3.324N LANE3.324N LANE3.324N LANE3.324N LANE3.324N LANE3.324N LANE3.324N LANE5.05N SVDC SVDC SVDC 200mA 200mA 70% 70% LANE5.05N				-		-		-			
LANE3.312N	LANE3.305N				200mA	200mA		70%			
LANE3.312N	LANE3.309N				112mA	112mA			100m\/n n	1 \\/\att	
LANE3.324N LANE3.324N LANE5.33N SVDC SVDC SVDC 200mA 200mA 70% 7	LANE3.312N	(2.97~3.63VDC)	12VDC		84mA	84mA	78%	78%	тооптур-р	1 Wall	
LANESSAN LANESSAN SVDC SVDC 200mA 200mA 70% 70% 100mVp-p 1 Watt 12mA 112mA 75% 75% 100mVp-p 1 Watt 12mB151N 14mB151N 15vDC 15vDC 24vDC 24v	LANE3.315N		15VDC	15VDC	67mA	67mA	80%	80%]		
LANESOSN	LANE3.324N		24VDC	24VDC	42mA	42mA	82%	82%]		
LANE509N LANE509N LANE512N LANE512N LANE512N LANE512N LANE512N LANE515N LANE524N LANE525N LANE55N LA	LANE533N		3.3VDC	-	303mA	-	70%	-	1		
LANE512N	LANE505N		5VDC	5VDC	200mA	200mA	70%	70%			
LANE512N	LANE509N	5VDC	9VDC	9VDC	112mA	112mA	75%	75%	100m\/n n	1 \\/ott	
LANE524N LANE333N LANE4933N LANE4933	LANE512N	(4.5~5.5VDC)	12VDC	12VDC	84mA	84mA	78%	78%	Тооттур-р	i wan	
LANE933N	LANE515N	, , ,	15VDC	15VDC	67mA	67mA	80%	80%	1		
LANE908N	LANE524N		24VDC	24VDC	42mA	42mA	82%	82%	1		
LANE909N	LANE933N		3.3VDC	-	303mA	-	70%	-			
LANE912N	LANE905N		5VDC	5VDC	200mA	200mA	70%	70%	1		
LANE912N	LANE909N	9VDC	9VDC	9VDC	112mA	112mA	75%	75%	100 1/	4.187.77	
LANE915N	LANE912N	(8.1~9.9VDC)	12VDC	12VDC	84mA	84mA		78%	100mvp-p	1 Watt	
LANE1233N		,			67mA	67mA	80%	80%	1		
LANE1233N	LANE924N		24VDC	24VDC	42mA	42mA	82%	82%	1		
LANE1205N	LANE1233N		3.3VDC	-	303mA	-	70%	-			
LANE1209N (10.8~13.2VDC) 9VDC 12VDC 12VDC 84mA 84mA 78% 78% 100mVp-p 1 Watt	LANE1205N			5VDC		200mA	70%	70%	1		
LANE1212N (10.8~13.2VDC) 12VDC 15VDC 67mA 67mA 80% 80% 80% 15VDC 5VDC 24VDC 42mA 42mA 82% 82% 100mVp-p 1 Watt 1505N LANE1505N LANE1509N LANE1515N LANE1524N 24VDC 12VDC 12VDC 84mA 84mA 75% 75% 75% 100mVp-p 1 Watt 1505N LANE1515N LANE1524N 24VDC 24VDC 42mA 42mA 82% 82% 100mVp-p 1 Watt 1500m 15VDC 12VDC 12VDC 12VDC 84mA 84mA 75% 75% 75% 100mVp-p 1 Watt 1500m 15VDC 12VDC 42mA 42mA 82% 82% 100mVp-p 1 Watt 1500m 15VDC 15VDC 24VDC 42mA 42mA 82% 82% 100mVp-p 1 Watt 1500m 15VDC 15VDC 24VDC 42mA 42mA 82% 82% 100mVp-p 1 Watt 1500m 15VDC 15	LANE1209N	12VDC			112mA	112mA	75%	75%	400 1/	4 187 11	
LANE1215N	LANE1212N	(10.8~13.2VDC)				84mA			100mVp-p	1 Watt	
LANE1224N	LANE1215N		15VDC	15VDC	67mA	67mA	80%	80%	1		
LANE1505N	LANE1224N		24VDC	24VDC	42mA	42mA	82%		1		
LANE1505N	LANE1533N		3.3VDC	-	303mA	-	70%	-			
LANE1509N LANE1512N LANE1512N LANE1515N LANE1524N LANE2433N LANE2405N LANE2409N LANE2412N LANE2412N LANE2415N LANE2424N 15VDC 12VDC 15VDC 24				5VDC		200mA		70%	1		
LANE1512N (13.5~16.5VDC) 12VDC 15VDC 24VDC 42mA 84mA 78% 78% 82% 82% 82% 82% 82% 82% 82% 82% 82% 8	LANE1509N	15VDC	9VDC	9VDC	112mA	112mA		75%	400 1/	4 187 17	
LANE1524N LANE2433N LANE2405N LANE2409N LANE2412N LANE2415N LANE2424N LANE2424N LANE2424N LANE2424N LANE2424N LANE2424N LANE2424N LANE2412N LANE2412N LANE2412N LANE2412N LANE2412N LANE2415N LANE2412N LANE24		(13.5~16.5VDC)	12VDC			84mA			100mVp-p	1 Watt	
LANE1524N LANE2433N LANE2405N LANE2409N LANE2412N LANE2415N LANE2424N LANE2424N LANE2424N LANE2424N LANE2424N LANE2424N LANE2424N LANE2412N LANE2412N LANE2412N LANE2412N LANE2412N LANE2415N LANE2412N LANE24	LANE1515N		15VDC	15VDC	67mA	67mA	80%	80%	1		
LANE2433N LANE2405N LANE2409N LANE2412N LANE2412N LANE2415N LANE2424N LANE2424N LANE2424N LANE2424N LANE2424N LANE2415NP LANE485NP LANE4812NP LANE4815NP L									1		
LANE2405N LANE2409N LANE2412N LANE2412N LANE2415N LANE2424N LANE2424N LANE2424N LANE2424N LANE2412N LANE2412N LANE2412N LANE2412N LANE2412N LANE2412N LANE2412N LANE2424N LANE				_		-		-			
LANE2409N 24VDC (21.6~26.4VDC) 9VDC 9VDC 112mA 75% 75% 75% 100mVp-p 1 Watt LANE2412N LANE2415N LANE2415N 15VDC 15VDC 67mA 67mA 80% 80% 80% 80% LANE2424N LANE2424N 42mA 42mA 42mA 82% <t< td=""><td></td><td></td><td></td><td>5VDC</td><td></td><td>200mA</td><td></td><td>70%</td><td>1</td><td></td></t<>				5VDC		200mA		70%	1		
LANE2412N (21.6~26.4VDC) 12VDC 12VDC 84mA 84mA 78% 78% LANE2415N 15VDC 15VDC 67mA 67mA 80% 80% LANE2424N 24VDC 24VDC 42mA 42mA 82% 82% LANE485NP - 5VDC - 200mA - 70% LANE489NP - 9VDC - 112mA - 75% LANE4812NP - 12VDC - 84mA - 78% LANE4815NP - 15VDC - 67mA - 80%		24VDC						75%	100mVp-p	1 Watt	
LANE2415N LANE2424N 15VDC 24VDC 15VDC 24VDC 67mA 42mA 60% 42mA 80% 82% 80% 82% LANE485NP LANE489NP LANE4812NP LANE4815NP - 5VDC - - 200mA - - 70% - - LANE4812NP LANE4815NP - 12VDC - - 84mA - - 78% - 100mVp-p 1 Watt		_									
LANE2424N 24VDC 24VDC 42mA 42mA 82% 82% LANE485NP - 5VDC - 200mA - 70% LANE489NP - 9VDC - 112mA - 75% LANE4812NP - 12VDC - 84mA - 78% LANE4815NP - 15VDC - 67mA - 80%		(= = 0)									
LANE485NP LANE489NP LANE4812NP LANE4812NP LANE4815NP - 5VDC - 200mA - 70% - 9VDC - 112mA - 75% - 12VDC - 84mA - 78% - 15VDC - 67mA - 80%	-										
LANE489NP 48VDC - 9VDC - 112mA - 75% LANE4812NP - 12VDC - 84mA - 78% LANE4815NP - 15VDC - 67mA - 80%			-	_			+				
LANE4812NP LANE4815NP 48VDC - 12VDC - 84mA - 78% - 15VDC - 67mA - 80% 100mVp-p 1 Watt		_	_		_		<u> </u>		1		
LANE4815NP (43.2~52.8VDC) - 15VDC - 67mA - 80%			_		_		_		100m\/n-n	1 Watt	
		(43.2~52.8VDC)	_						1007 P	'''''	
	LANE4824NP		_	24VDC	_	42mA	-	82%	-		



			MOD	EL SELECT	ION TABLE				
Dual Output Models									
Model Number ⁽¹⁾	Innut Valtage Denge	Output	Voltage	Output	t Current	Effic	iency	Ripple & Noise	Output Bourer
woder wumber	Input Voltage Range	Package 1	Package 2	Package 1	Package 2	Package 1	Package 2	Rippie & Noise	Output Power
LANE3.333ND		±3.3VDC	-	±150mA	-	70%	-		
LANE3.305ND		±5VDC	±5VDC	±100mA	±100mA	70%	70%		
LANE3.309ND	3.3VDC	±9VDC	±9VDC	±56mA	±56mA	75%	75%	100m\/n n	1 Watt
LANE3.312ND	(2.97~3.63VDC)	±12VDC	±12VDC	±42mA	±42mA	78%	78%	100mVp-p	ı vvall
LANE3.315ND		±15VDC	±15VDC	±34mA	±34mA	80%	80%		
LANE3.324ND		±24VDC	±24VDC	±21mA	±21mA	82%	82%	1	
LANE533ND		±3.3VDC	-	±150mA	-	70%	-		
LANE505ND		±5VDC	±5VDC	±100mA	±100mA	70%	70%		
LANE509ND	5VDC	±9VDC	±9VDC	±56mA	±56mA	75%	75%	400>/	4 10/-44
LANE512ND	(4.5~5.5VDC)	±12VDC	±12VDC	±42mA	±42mA	78%	78%	100mVp-p	1 Watt
LANE515ND	,	±15VDC	±15VDC	±34mA	±34mA	80%	80%		
LANE524ND		±24VDC	±24VDC	±21mA	±21mA	82%	82%		
LANE933ND		±3.3VDC	-	±150mA	-	70%	-		
LANE905ND		±5VDC	±5VDC	±100mA	±100mA	70%	70%	1	1 Watt
LANE909ND	9VDC	±9VDC	±9VDC	±56mA	±56mA	75%	75%	100mVp-p	
LANE912ND	(8.1~9.9VDC)	±12VDC	±12VDC	±42mA	±42mA	78%	78%		
LANE915ND	,	±15VDC	±15VDC	±34mA	±34mA	80%	80%		
LANE924ND		±24VDC	±24VDC	±21mA	±21mA	82%	82%	1	
LANE1233ND		±3.3VDC	-	±150mA	-	70%	-		
LANE1205ND		±5VDC	±5VDC	±100mA	±100mA	70%	70%	1	
LANE1209ND	12VDC	±9VDC	±9VDC	±56mA	±56mA	75%	75%	100mVp-p	
LANE1212ND	(10.8~13.2VDC)	±12VDC	±12VDC	±42mA	±42mA	78%	78%		1 Watt
LANE1215ND	(/	±15VDC	±15VDC	±34mA	±34mA	80%	80%	1	
LANE1224ND		±24VDC	±24VDC	±21mA	±21mA	82%	82%	1	
LANE1533ND		±3.3VDC	-	±150mA	-	70%	-		
LANE1505ND		±5VDC	±5VDC	±100mA	±100mA	70%	70%	1	
LANE1509ND	15VDC	±9VDC	±9VDC	±56mA	±56mA	75%	75%	1	
LANE1512ND	(13.5~16.5VDC)	±12VDC	±12VDC	±42mA	±42mA	78%	78%	100mVp-p	1 Watt
LANE1515ND	(.5.5 .5.5755)	±15VDC	±15VDC	±34mA	±34mA	80%	80%	1	
LANE1524ND		±24VDC	±24VDC	±21mA	±21mA	82%	82%	†	
LANE2433ND		±3.3VDC	-	±150mA	-	70%	-		
LANE2405ND		±5VDC	±5VDC	±100mA	±100mA	70%	70%		1 Watt
LANE2409ND	24VDC	±9VDC	±9VDC	±56mA	±56mA	75%	75%		
LANE2412ND	(21.6~26.4VDC)	±12VDC	±12VDC	±42mA	±42mA	78%	78%	100mVp-p	
LANE2415ND	(=1.0 20.1700)	±15VDC	±15VDC	±34mA	±34mA	80%	80%		
LANE2424ND		±24VDC	±24VDC	±21mA	±21mA	82%	82%		
LANE485NDP		-	±5VDC	-	±100mA	-	70%		
LANE489NDP		_	±9VDC		±56mA	_	75%	-	
LANE4812NDP	48VDC	_	±12VDC		±42mA	_	78%	100mVp-p	1 Watt
LANE4815NDP	(43.2~52.8VDC)	_	±15VDC	<u> </u>	±34mA	-	80%	1001117	1 vvall
LANE4824NDP			±24VDC		±34IIIA ±21mA	 	82%	1	
LANCHUZHNUF			±24 V D C	=	±2 1111/A		02/0		



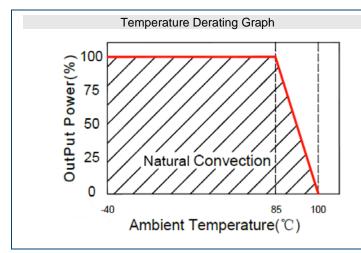
SPECIFICATIONS								
All specifications		out Voltage, and Maximum Outpur specifications based on technology		therwise note	ed.			
SPECIFICATION		ONDITIONS	Min	Тур	Max	Unit		
INPUT SPECIFICATIONS				• • • • • • • • • • • • • • • • • • • •				
Input Voltage Range	Vo, Io Nom				±10	%		
Input Filter				Capacit	or			
OUTPUT SPECIFICATIONS								
Output Voltage				See Tal	ole			
Voltage Tolerance	100% Full Load				±5	%		
Line Regulation	For 1% of Vin			1.2		%		
Load Regulation	10% to 100% Full Load	3.3V & 5V output models 9V, 12V, 15V, 24V			15 10	%		
Output Power		(0.1, 1.2.1, 1.0.1, 2.1.		See Tal				
Output Current				See Tal	ole			
Ripple & Noise	BW=DC to 20MHz				100	mVp-p		
Transient Response Setting Time	50% load step change					μS		
PROTECTION				350				
Short Circuit Protection	Short term				1	Sec		
ENVIRONMENTAL SPECIFICATION	IS							
Operating Ambient Temperature			-40		+85	°C		
Humidity	Non-Condensing				95	%		
Cooling					Free Air Convection			
MTBF	MIL-HDBK-217F @25°C		3,500,000			Hours		
GENERAL SPECIFICATIONS								
Efficiency ⁽²⁾				See Tal	ole			
Switching Frequency	Full Load, Nominal Input			100		KHz		
Isolation Resistance	500VDC		1000			ΜΩ		
PHYSICAL SPECIFICATIONS								
Weight	Package 1	0.074oz (2.1g)						
vveignt	Package 2 ("P" suffix)	0.095oz (2.7g)						
Dimensions (L x W x H)	Package 1	0.77in x 0.24in x 0.39in (19.5mm x 6mm x 10mm)						
` '	Package 2 ("P" suffix)	0.77in x 0.28in x 0.39in (19.5mm x 7.1mm x 10mm)						
Case Material				DAP				
SAFETY								
Safety Approvals	Single Outputs			UL 609	50			

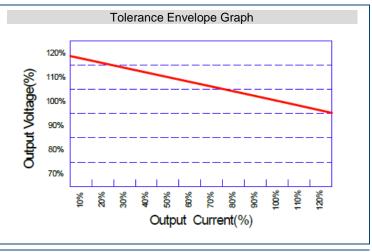
NOTES

- (1) Add "P" to end of model number to indicate Package 2 type.
 3.3VDC output voltage is only available for Package 1 type.
 48VDC nominal input voltage models are only available for Package 2 type.
- (2) As the input voltage increases there will be an increase in efficiency.

*Due to advances in technology, specifications are subject to change without notice.

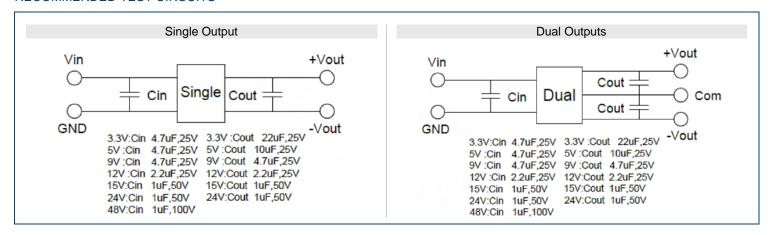
DERATING CURVES



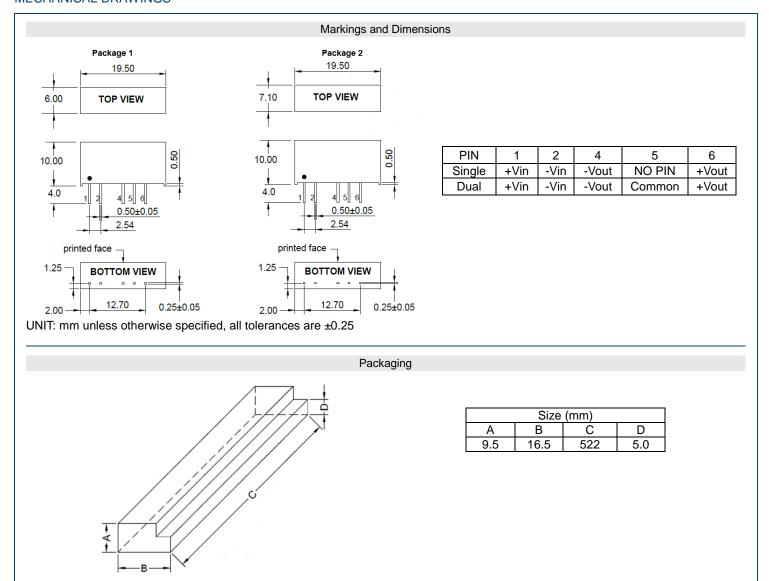




RECOMMENDED TEST CIRCUITS



MECHANICAL DRAWINGS





FILTERING •

In some circuits, which are sensitive to noise and ripple, a filtering capacitor may be added to the DC/DC output end and input end to reduce the noise and ripple. However, the capacitance of the output filter must be appropriate. If the capacitance is too big, a startup problem may arise. To ensure safe and reliable operation, please refer to the capacitance table below for the maximum filter capacitor size for each output voltage. To get an extremely low ripple, an "LC" filtering network may be connected to the input and output ends of the DC/DC converter. It should also be noted that the inductance and the frequency of the "LC" filtering network should be staggered with the DC/DC frequency to avoid mutual interference (see figure 1 below.



<Figure 1>

External Capacitor Table

Vin	External	Vout	External		
VIII	Capacitor	Vout	Capacitor		
3.3VDC	4.7uF/25V	3.3VDC	22uF/16V		
5VDC	4.7uF/25V	5VDC	10uF/25V		
9VDC	4.7uF/25V	9VDC	4.7uF/25V		
12VDC	2.2uF/25V	12VDC	2.2uF/25V		
15VDC	1uF/50V	15VDC	1uF/50V		
24VDC	1uF/50V	24VDC	1uF/50V		
48VDC	1uF/100V				

COMPANY INFORMATION

Wall Industries, Inc. has created custom and modified units for over 50 years. Our in-house research and development engineers will provide a solution that exceeds your performance requirements on-time and on budget. Our ISO9001-2008 certification is just one example of our commitment to producing a high quality, well-documented product for our customers.

Our past projects demonstrate our commitment to you, our customer. Wall Industries, Inc. has a reputation for working closely with its customers to ensure each solution meets or exceeds form, fit and function requirements. We will continue to provide ongoing support for your project above and beyond the design and production phases. Give us a call today to discuss your future projects.

Contact Wall Industries for further information:

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