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### Description

The LDA3W series is a compact 3W isolated DC-DC converter housed in a SIP-8 package, supporting wide nominal input voltages of 5V and 24V DC. It provides stable single outputs from 3.3V to 15V with efficiencies up to 81%, high isolation up to 2kVDC, and reliable operation from -40°C to +100°C. Designed to meet EN62368-1 standards, it is ideal for industrial control, Telecom/ Datacom and measurement/ semiconductor equipment applications.

### Features

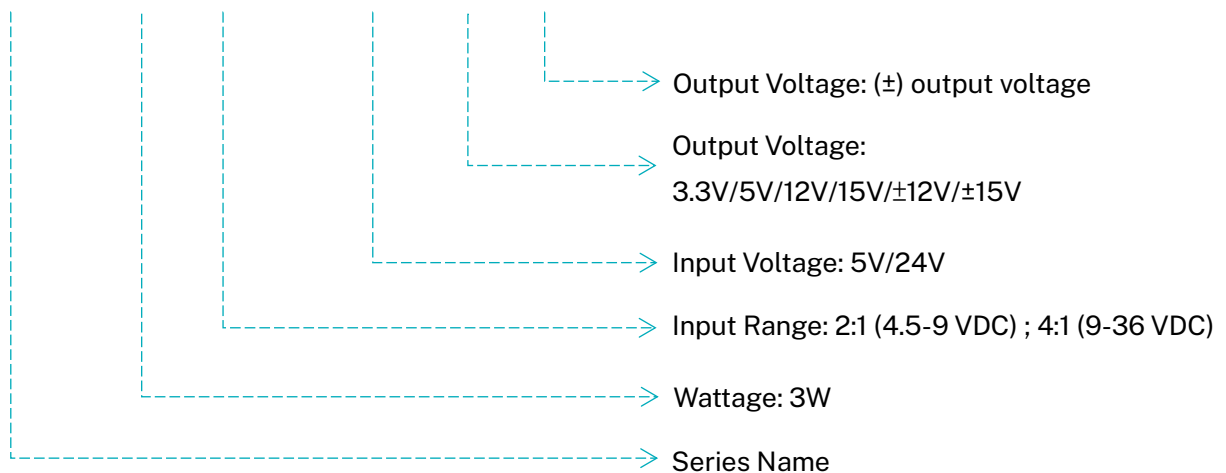
- 2:1 & 4:1 Wide input voltage range
- 2KVDC Isolated Voltage
- Efficiency up to 81%
- Operating temperature -40°C to +100°C
- Continuous short circuit protection
- External ON/OFF control

### Applications

- Industry Control System
- Telecom/ Datacom
- Measurement Equipment
- Semiconductor Equipment

### Model Numbering

LDA 3W 4 - 05 12 D



**Model Selection Guide**

Part No.	Input Voltage	Output Voltage	Output Current @ Full Load	Efficiency <sup>(1)</sup>	Capacitor Load <sup>(2)</sup> (Max.)
LDA3W2-053.3	4.5-9 VDC Nom. 5VDC	3.3 VDC	700mA	73%	2200μF
LDA3W2-0505		5 VDC	600mA	77%	2200μF
LDA3W2-0512		12 VDC	250mA	80%	1000μF
LDA3W2-0515		15 VDC	200mA	80%	820μF
LDA3W2-0512D		±12VDC	±125mA	80%	±220μF
LDA3W2-0515D		±15VDC	±100mA	80%	±330μF
LDA3W4-243.3	9-36 VDC Nom. 24VDC	3.3 VDC	700mA	75%	4400μF
LDA3W4-2405		5 VDC	600mA	79%	2200μF
LDA3W4-2412		12 VDC	250mA	81%	1000μF
LDA3W4-2415		15 VDC	200mA	81%	680μF
LDA3W4-2405D		±5VDC	±300mA	77%	±330μF
LDA3W4-2412D		±12VDC	±125mA	79%	±330μF
LDA3W4-2415D		±15VDC	±100mA	79%	±220μF

**Notes**

- #1: The efficiency is test by nominal input and max. full load @ 25°C
- #2: The capacitive load is test by minimum input and constant resistive load.
- #3: All specifications valid at nominal input voltage, full load and 25°C unless otherwise stated.

## Electrical Specification

Model Number		LDA3W□-□□
<b>Input</b>		
Input Filter		Capacitor type (5 Vin)
Input Voltage Range	5Vin	4.5V-9VDC
	24Vin	9-35VDC
No-Load Input Current	5Vin	100mA
	24Vin	10mA
Start-Up Time		30ms (100% load at nominal Vin)
Start-Up Voltage (0%-100% load)	5Vin	4.5VDC
	24Vin	9VDC
Under Voltage Lockout (0%-100% load)	5Vin	2.7VDC
	24Vin	7.5VDC
Input Surge Voltage (0.1s Max)	5Vin	15VDC
	24Vin	50VDC
Remote ON/OFF	5Vin	DC-DC ON_Open ; DC-DC OFF_5V $\leq$ Vr < 10V
	24Vin	DC-DC ON_Open or 3.5-15VDC; DC-DC OFF Short or 0-1.2VDC Input current (remote off mode): 2mA
<b>Output</b>		
Voltage Accuracy	5Vin	$\pm 1\%$
	24Vin	$\pm 3\%$
Minimum Load		0%
Line Regulation (LL to HL 100% load)	5Vin	$\pm 0.2\%$ Single Output $\pm 0.2\%$ Dual Output
	24Vin	$\pm 0.5\%$ Single Output $\pm 1.0\%$ Dual Output
Load Regulation (10% to 100% Load)	5Vin	$\pm 1.0\%$ Single Output $\pm 1.0\%$ Dual Output

	24Vin	± 1.0% Single Output ± 1.5% Dual Output
Cross Regulation		± 5% (Asymmetrical load 25%/100%)
Ripple & Noise	5Vin	100 mVp-p
	24Vin	300 mVp-p
Operating Frequency	5Vin	270KHz
	24Vin	400KHz
<b>Environment</b>		
Operating Temperature	-40-+100 °C with derating	
Storage Temperature	-55-+125 °C	
Max. Case Temperature	110°C	
Relative Humidity	5%-95% RH	
MTBF (MIL-HDBK-217F)	5Vin	2600 KHours (25°C)
	24Vin	3200 KHours (25°C)
<b>Function</b>		
Isolation Voltage	2 KVDC 1min. Input to Output	
Isolation Resistance	1000 MΩ	
Isolation Capacitance	50 pF	
Short Circuit Protection	Continuous, automatic recovery	
Over Load Protection	5Vin	180%
	24Vin	200%
Safety Approvals	EN62368-1	
<b>Physical</b>		
Case Material	Non-conductive plastic	
Potting Material	Silicone	
Dimension	22.3 x 10.0 x 11.3 mm	
Weight	4.5 g	
Cooling method	Free air convection	
Vibration	MIL-STD-202G	

Electromagnetic Compatibility	
Electromagnetic Interference	EN 55032 (Class A/B) with external filter
Radiated Immunity <sup>(2)</sup>	IEC 61000-4-3, 10 V/m
Electrostatic Discharge <sup>(2)</sup>	IEC 61000-4-2, Air±8kV; Contact±6kV (Criteria A)
Electrical Fast Transient <sup>(2)</sup>	IEC 61000-4-4, ±1kV (Criteria A) for 5Vin IEC 61000-4-4, ±2kV (Criteria A) for 24Vin
Surge Immunity <sup>(2)</sup>	IEC 61000-4-5, ±1kV (Criteria A) for 5Vin IEC 61000-4-5, ±2kV (Criteria A) for 24Vin
Conducted Immunity <sup>(2)</sup>	IEC 61000-4-6, 10V/rms (Criteria A)
Magnetic Field Immunity <sup>(2)</sup>	IEC 61000-4-8, 100A/m continuous, 1000A/m 1 second (Criteria A)

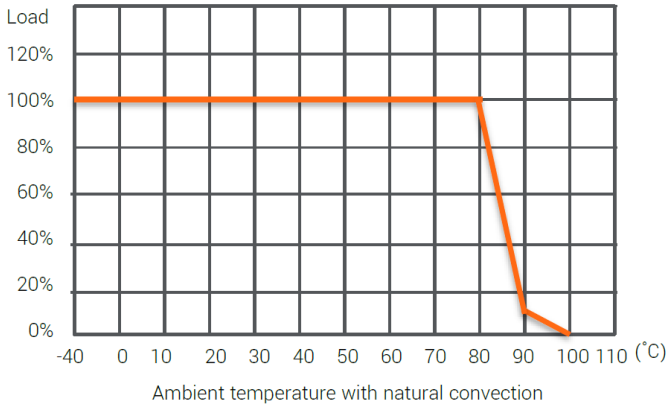
**Notes**

- #1: 5Vin measured with 20MHZ BW at Vin range 0%~100% load with 22µF MLCC. Light load ripple & noise is no more than 150mVpp. 24Vin measured with 20MHZ BW at Vin range 0%~100% load with 22µF\*2 MLCC. Light load ripple & noise is no more than 200mVpp.
- #2: 5Vin: External input capacitor required 1800µF/25V. 24Vin: External input capacitor required 1500µF/50V.
- #3: All specifications valid at nominal input voltage, full load and 25°C unless otherwise stated.
- #4. The product information and specifications are subject to change without prior notice.
- #5. About EMI circuit, please check suggestion circuit.

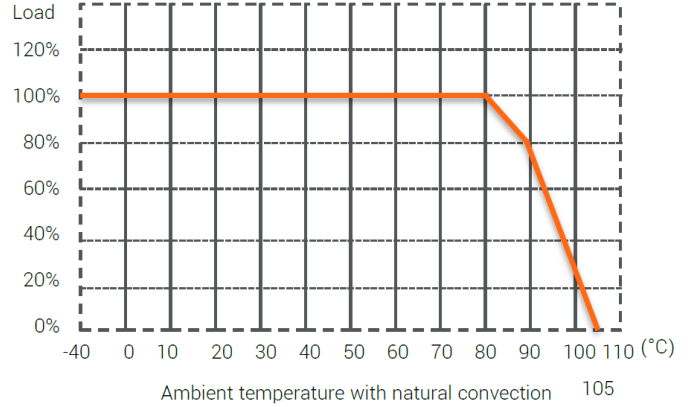
**Mechanical Specification**

**Derating Curve**

**5Vin**

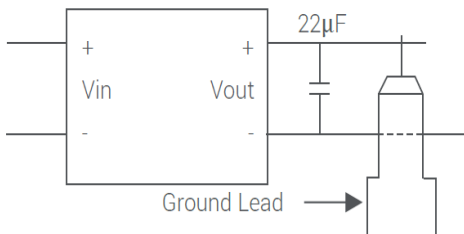


**24Vin**



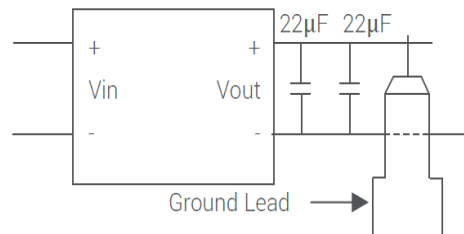
**Ripple & Noise Measure Method**

**5Vin**



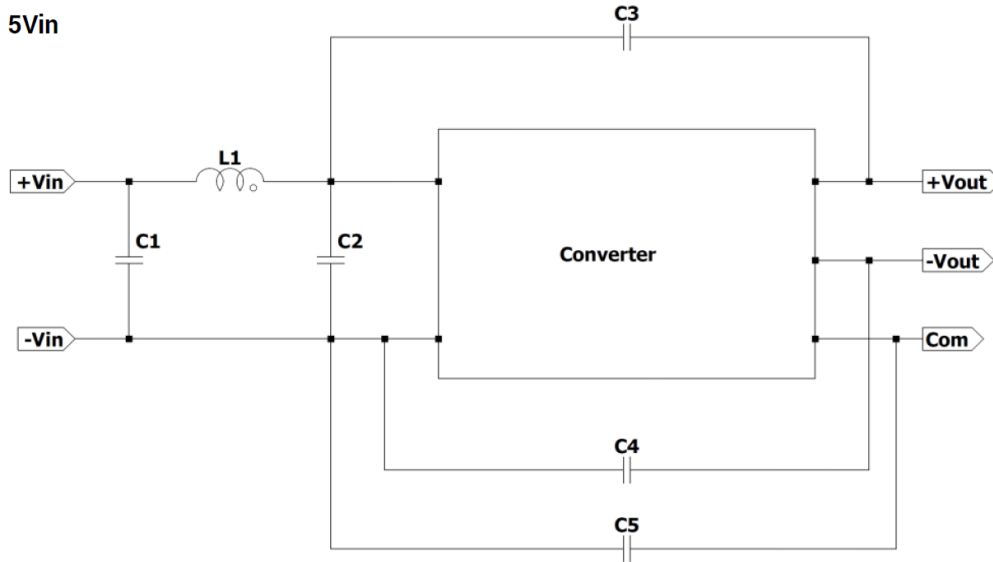
Measured with 20MHz bandwidth and 22µF ceramic capacitor.

**24Vin**

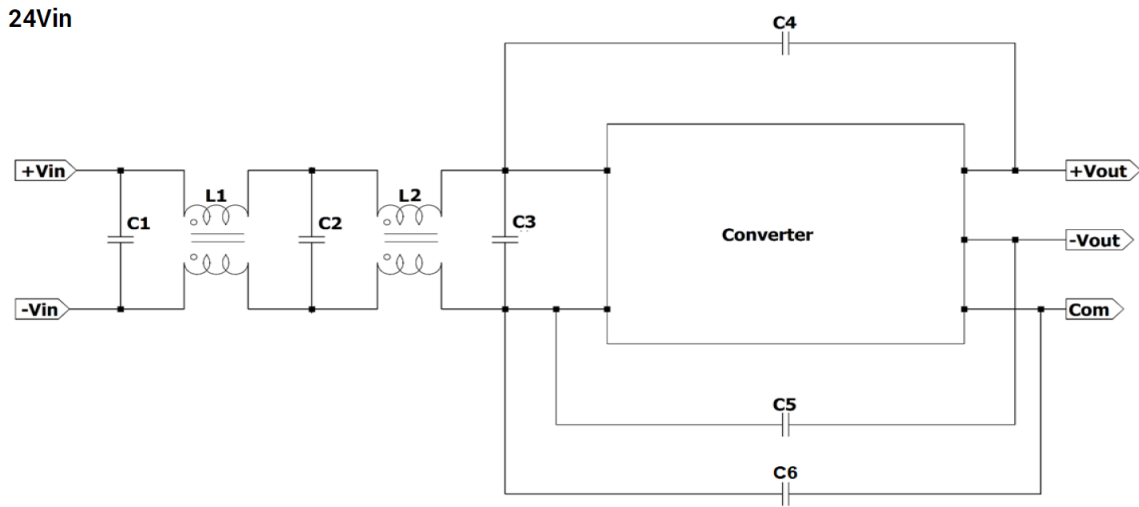


Measured with 20MHz bandwidth and 22µF\*2 ceramic capacitor.

#### EMI Filtering-Suggestion for Class A/B

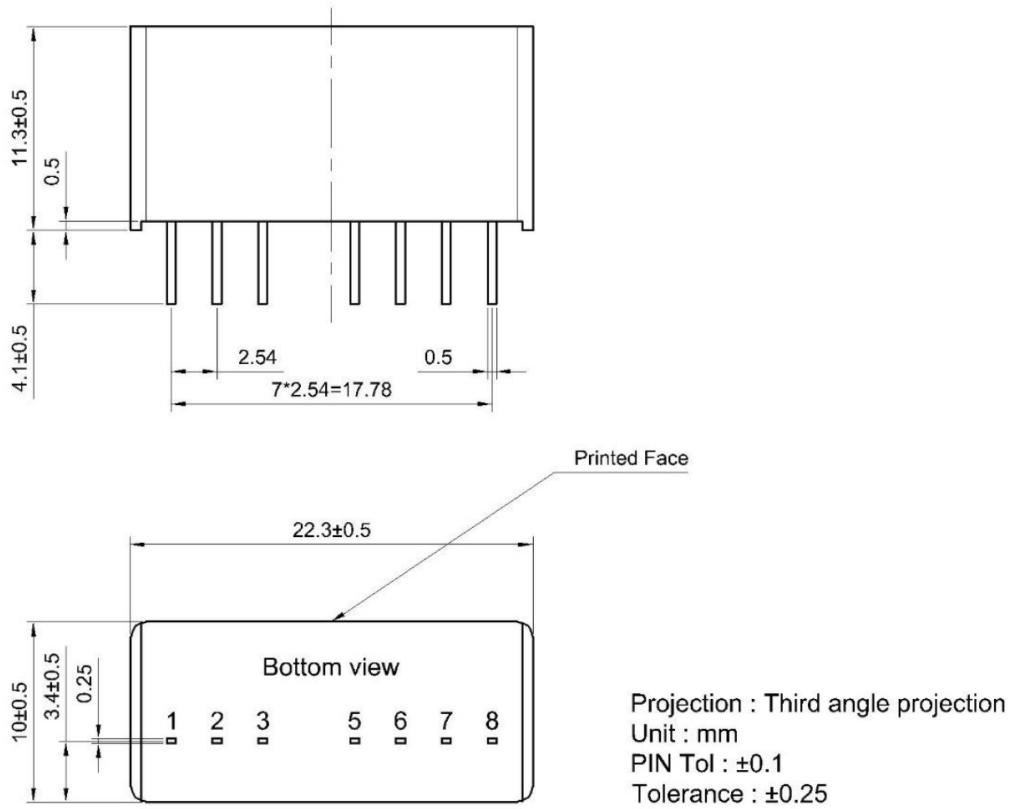


Model	Class A/B	C1	C2	C3	C4	C5	L1
Single Output	Class-A	10 $\mu$ F	NA	1000 pF	1000 pF	NA	10 $\mu$ H
Dual Output		10 $\mu$ F	NA	1000 pF	1000 pF	1000 pF	10 $\mu$ H
Single Output	Class-B	10 $\mu$ F*2pcs	10 $\mu$ F*2pcs	1000 pF	1000 pF	NA	15 $\mu$ H
Dual Output		10 $\mu$ F*2pcs	10 $\mu$ F*2pcs	1000 pF	1000 pF	1000 pF	15 $\mu$ H



Model	Class A/B	C1	C2	C3	C4	C5	C6	L1	L2
Single Output	Class-A	NA	4.7 $\mu$ F *2 pcs	4.7 $\mu$ F *2 pcs	470pF	470pF	NA	Short	130 $\mu$ H
Dual Output		NA	4.7 $\mu$ F *2 pcs	4.7 $\mu$ F *2 pcs	470pF	470pF	470pF	Short	130 $\mu$ H
Single Output	Class-B	4.7 $\mu$ F *2 pcs	4.7 $\mu$ F *2 pcs	4.7 $\mu$ F *2 pcs	470pF	470pF	NA	1mH	27 $\mu$ H
Dual Output		4.7 $\mu$ F *2 pcs	4.7 $\mu$ F *2 pcs	4.7 $\mu$ F *2 pcs	470pF	470pF	470pF	1mH	27 $\mu$ H

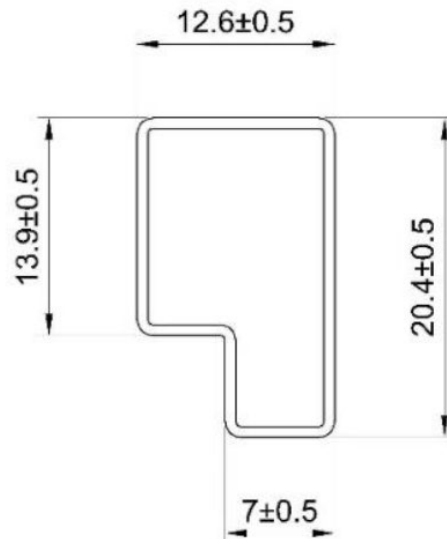
**Mechanical Dimension & Pinning**



Pin	Single	Dual
1	-Vin	-Vin
2	+Vin	+Vin
3	CTRL	CTRL
5	NC	NC
6	+Vout	+Vout
7	-Vout	COM
8	NC	-Vout

#### Package

#### Anti-static liquid tube



UNIT : mm

1 Tube = 22 pcs

Length :  $520 \pm 2$

#### Recommended Footprint

