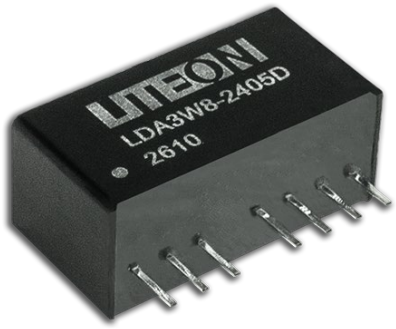
3W SIP8 DC/DC Converter

LDA3W8 Series



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Description

The LDA3W8 series is a compact 3W isolated DC-DC converter housed in a SIP-8 package, supporting wide nominal input voltages of 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 euuipment applications.

Features

- 8:1 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 8 – 24 12 D

- D → Output Voltage: (±) output voltage
- 12 → Output Voltage: 3.3V/5V/12V/15V/±5/±12V/±15V
- 24 → Input Voltage: 24V
- 8 → Input Range: 8:1 (9-75 VDC)
- 3W → Wattage: 3W
- LDA → Series Name

No. 90, Jian 1st Rd., Zhonghe Dist., New Taipei City 23545, Taiwan

Model Selection Guide

Part No.	Input Voltage	Output Voltage	Output Current @ Full Load	Efficiency (1)	Capacitor Load (2) (Max.)
LDA3W8-243.3	9-75 VDC Nom. 24VDC	3.3 VDC	700mA	75%	4400μF
LDA3W8-2405		5 VDC	600mA	79%	2200μF
LDA3W8-2412		12 VDC	250mA	81%	1000μF
LDA3W8-2415		15 VDC	200mA	81%	680μF
LDA3W8-2405D		±5VDC	±300mA	77%	±330μF
LDA3W8-2412D		±12VDC	±125mA	79%	±330μF
LDA3W8-2415D		±15VDC	±100mA	79%	±220μF

Notes

#1: The efficiency is test by 24VDC input and max. full load @ 25℃

#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℃ after warm-up unless otherwise stated.

Electrical Specification

Model Number		LDA3W8-24□
Input		
Input Voltage Range		9V-75VDC
No-Load Input Current		10mA
Start-Up Time		30ms @ 100% load at nominal Vin
Start-Up Voltage (0%-100% load)		4.5VDC
Under Voltage Lockout (0%-100% load)		7.5VDC
Input Surge Voltage (0.1s Max)		100VDC
Remote ON/OFF		DC-DC ON_Open or 3.5-15VDC; DC-DC OFF Short or 0-1.2VDC Input current (remote off mode): 2mA
Output		
Voltage Accuracy		± 3%
Minimum Load		0%
Line Regulation (LL to HL 100% load)	Single Output	± 0.5%
	Dual Output	± 1.0%
Load Regulation (10% to 100% Load)	Single Output	± 1.0%
	Dual Output	± 1.5%
Cross Regulation		± 5% (Asymmetrical load 25%/100%)
Ripple & Noise		100 mVp-p (Nominal Vin)
Operating Frequency 100% Load nominal Vin		300KHz (243.3) 270KHz (2415/2415D) 400KHz (2405/2405D/2412/2412D)
Environment		
Operating Temperature		-40-+100 ˚C with derating
Storage Temperature		-55-+125 ˚C
Max. Case Temperature		105˚C
Relative Humidity		5%-95% RH
MTBF (MIL-HDBK-217F)		2400 KHours (+25˚C)

Function	
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	200%
Safety Approvals	EN62368-1
Physical	
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(2)	IEC 61000-4-3, 10 V/m
Electrostatic Discharge(2)	IEC 61000-4-2, Air±8kV; Contact±6kV (Criteria A)
Electrical Fast Transient(2)	IEC 61000-4-4, ±2kV (Criteria A)
Surge Immunity(2)	IEC 61000-4-5, ±2kV (Criteria A)
Conducted Immunity(2)	IEC 61000-4-6, 10V/rms (Criteria A)
Magnetic Field Immunity(2)	IEC 61000-4-8, 100A/m continuous, 1000A/m 1 second (Criteria A)

Notes

#1: Ripple & Noise measured with 20MHZ BW at Vin range 0%~100% load with 22μF*2+0.1uF MLCC. Light load ripple & noise is no more than 200mVpp.

#2: External input capacitor required 1500μF/100V.

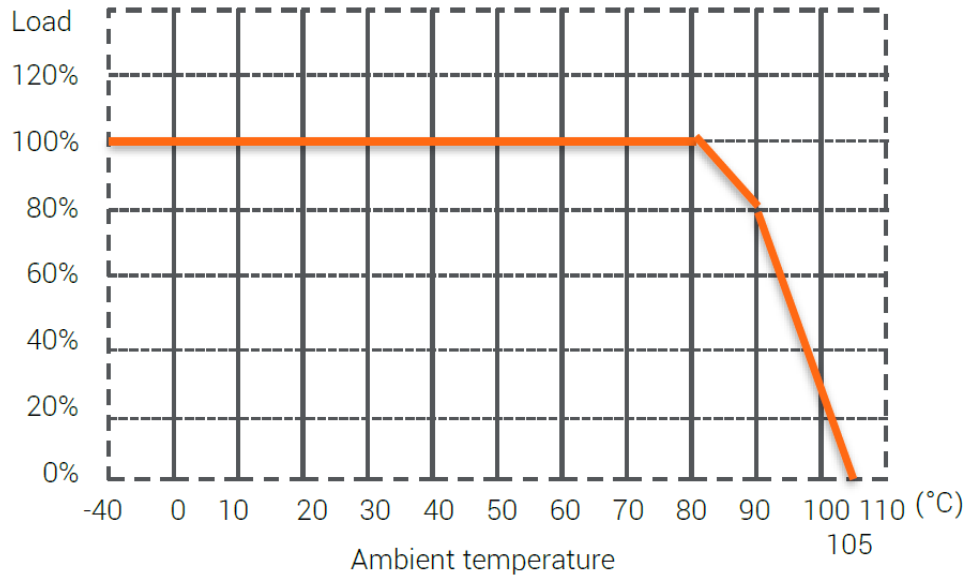
#3: All specifications valid at nominal input voltage, full load and 25˚C unless otherwise stated.

#4: The product information and specifications are subject to change without prior notice.

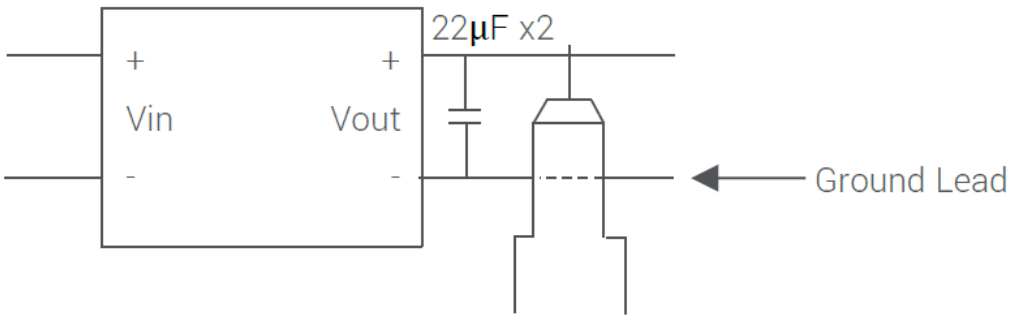
#5: About EMI circuit, please check suggestion circuit.

Mechanical Specification

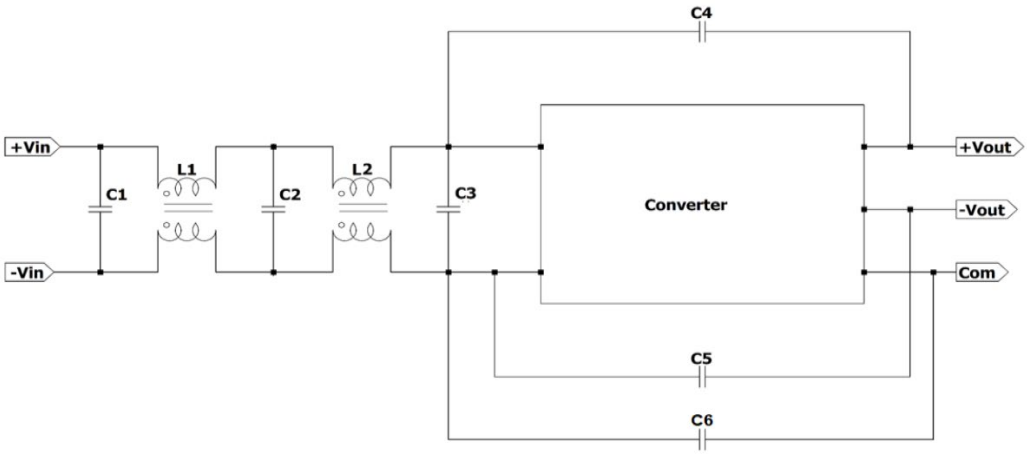
Derating Curve



Ripple & Noise Measure Method

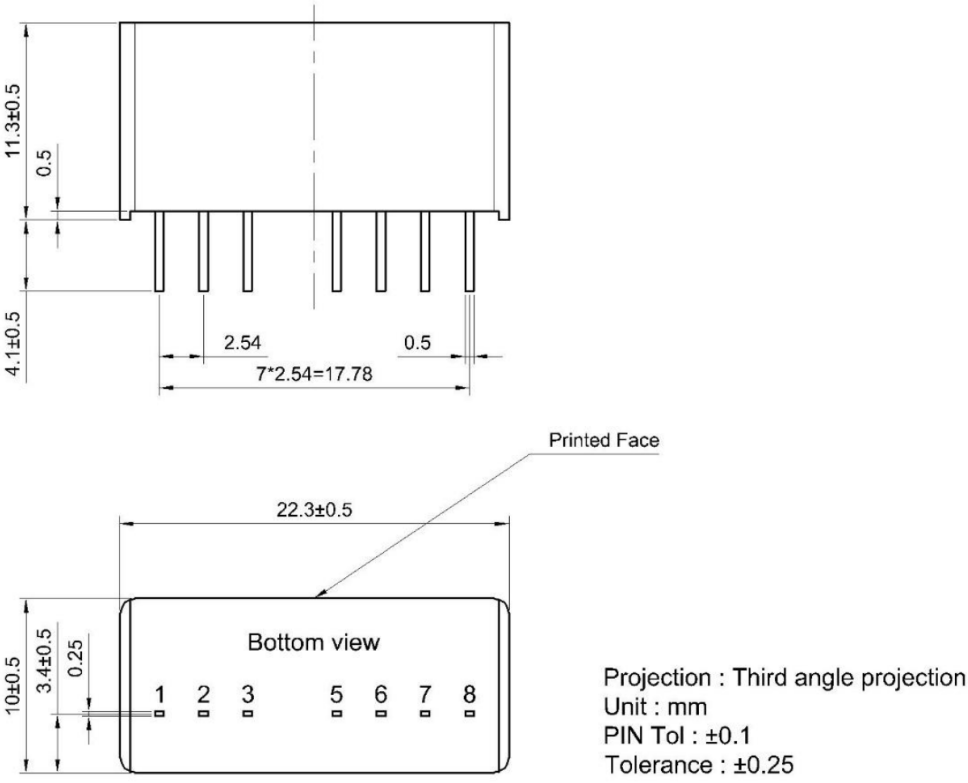


EMI Filtering-Suggestion for Class A/B



Model	Model A/B	C1	C2	C3	C4	C5	C6	L1	L2
Single Output	Class A	NA	4.7μF/ 100V ×2	4.7μF/ 100V ×2	470pF	470pF	NA	Short	130μH
Dual Output		NA	4.7μF/ 100V ×2	4.7μF/ 100V ×2	470pF	470pF	470pF	Short	130μH
Single Output	Class B	4.7μF/ 100V ×2	4.7μF/ 100V ×2	4.7μF/ 100V ×2	470pF	470pF	NA	1mH	27μH
Dual Output		4.7μF/ 100V ×2	4.7μF/ 100V ×2	4.7μF/ 100V ×2	470pF	470pF	470pF	1mH	27μH

Mechanical Dimension & Pinning

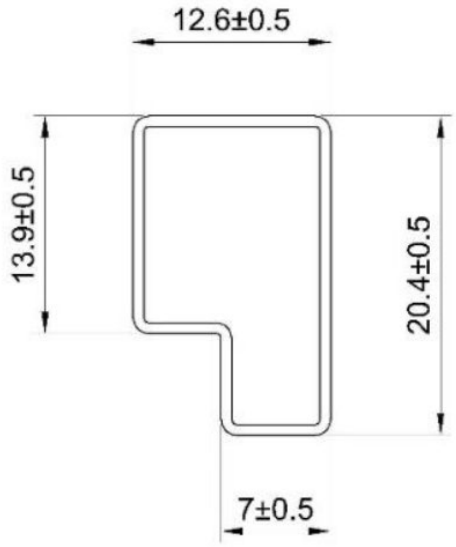


Projection : Third angle projection
Unit : mm
PIN Tol : ±0.1
Tolerance : ±0.25

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±2

Recommended Footprint