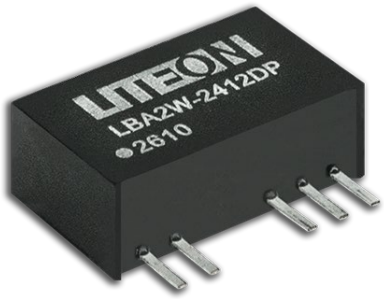
2W SIP7
Medical DC/DC Converter

LBA2W Series



Learn More

Description

The LBA2W series is a compact 2W isolated DC-DC converter housed in a SIP-7 package, supporting wide nominal input voltages of 3.3V, 5V, 12V, 15V and 24V DC. It provides stable single outputs from 3.3V to 15V with efficiencies up to 85%, high isolation up to 6kVDC, and reliable operation from −40°C to +95°C. Designed to meet UL62368-1, IEC62368-1, and EN60601-1 standards, it is ideal for industrial control, medical reuqipments and battery management system applications.

Features

- 2 Watt isolated output power
- Compact SIP-7 package
- 1:1 input voltage range
- -40˚C to +100˚C operating temperature
- 7mm clearance distance
- Reinforced insulation, rate for 300Vac working voltage
- Continuous short circuit protection
- Lead-free design, RoHS compliant
- 3-year product warranty

Applications

- Industry Control
- Electric Power Instrumentation
- High Isolation Requirpement
- Battery Mangement System

Model Numbering

LBA 2W – 05 33 – D

- Output Voltage: (±) output voltage
- Output Voltage: 3.3V / 5V / 12V
- Input Voltage: 5V / 12V / 24V
- Wattage: 2 W
- 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.)
				Min.	Typ.	
LBA2W-3.33.3	3.3 VDC±10%	3.3 VDC	606 mA	77.0%	74.0%	1000µF
LBA2W-3.305		5 VDC	400 mA	78.5%	75.5%	1000µF
LBA2W-3.312		12 VDC	167 mA	82.0%	79.0%	330µF
LBA2W-3.315		15 VDC	134 mA	83.0%	80.0%	330µF
LBA2W-3.305D		±5VDC	±200mA	81.0%	78.0%	680µF
LBA2W-3.312D		±12VDC	±84mA	85.0%	82.0%	150µF
LBA2W-3.315D		±15VDC	±67mA	84.0%	81.0%	150µF
LBA2W-053.3	5 VDC±10%	3.3 VDC	606 mA	77.0%	74.0%	1000µF
LBA2W-0505		5 VDC	400 mA	79.0%	76.0%	1000µF
LBA2W-0512		12 VDC	167 mA	83.0%	80.0%	330µF
LBA2W-0515		15 VDC	134 mA	84.0%	81.0%	330µF
LBA2W-0505D		±5VDC	±200mA	81.0%	78.0%	680µF
LBA2W-0512D		±12VDC	±84mA	82.0%	79.0%	150µF
LBA2W-0515D		±15VDC	±67mA	85.5%	82.5%	150µF
LBA2W-123.3	12 VDC±10%	3.3 VDC	606 mA	77.0%	74.0%	1000µF
LBA2W-1205		5 VDC	400 mA	80.0%	77.0%	1000µF
LBA2W-1212		12 VDC	167 mA	84.0%	81.0%	330µF
LBA2W-1215		15 VDC	134 mA	83.0%	80.0%	330µF
LBA2W-1205D		±5VDC	±200mA	82.0%	79.0%	680µF
LBA2W-1212D		±12VDC	±84mA	83.0%	80.0%	150µF
LBA2W-1215D		±15VDC	±67mA	84.0%	81.0%	150µF
LBA2W-243.3	24 VDC±10%	3.3 VDC	606 mA	79.0%	76.0%	1000µF
LBA2W-2405		5 VDC	400 mA	81.0%	78.0%	1000µF
LBA2W-2409		9 VDC	222 mA	84.0%	81.0%	4700µF
LBA2W-2412		12 VDC	167 mA	85.0%	82.0%	330µF
LBA2W-2415		15 VDC	134 mA	85.0%	82.0%	330µF
LBA2W-2405D		±5VDC	±200mA	82.0%	79.0%	680µF
LBA2W-2412D		±12VDC	±84mA	85.0%	82.0%	150µF
LBA2W-2415D		±15VDC	±67mA	84.0%	81.0%	150µF

Notes

#1: All specifications valid at nominal input voltage, full load and 25℃ unless otherwise stated.

#2: The efficiency is test by Nominal input and max. full load @ 25℃

#3: The capacitive load is test by minimum input and constant resistive load.

Electrical Specification

Model Number	LBA2W-☐☐
Input	
Filter	Internal capacitors
Input Voltage Range	+10%
Output	
Voltage Accuracy	± 5% max.
Minimum Load	0%
Line Regulation	1.2% typ. @1% of Vin
Load Regulation (10% to 100% Load)	15% @ 3.3V/ 5Vdc 10% @ 9-15Vdc
Ripple & Noise	100 mVp-p @ 20MHz BW (@ nominal Vin)
Operating Frequency	20KHz @ 100% load at Nominal Vin
Environment	
Operating Temperature	-40-+95 ˚C (Others)
	-40-+90 ˚C (LMS2-1212 / LMS2-1215 / LMS2-1212D)
Storage Temperature	-55-+125 ˚C
Max. Case Temperature	105˚C
Relative Humidity	5%-95% RH
Function	
Isolation Voltage	6 KVDC 1min. Input to Output
Isolation Resistance	10GΩ
Isolation Capacitance	10 pF
MTBF (MIL-HDBK-217F)	$12.9*10^6$ Hours (25˚C)
Short Circuit Protection	Continuous
Vibration	MIL-STD-202G
Safety Approvals	UL62368-1/ IEC62368-1/ EN60601-1

Physical	
Case Material	UL94V-0 black plastic
Potting Material	Silicone (UL94V-0)
Dimension	19.65 x 7.05 x 11.0 mm
Weight	2.8 g
Electromagnetic Compatibility	
Electromagnetic Interference	EN 55032 (Class A/B)
Electrostatic Discharge	IEC 61000-4-2, Air±15kV; Contact±8kV (Criteria A)
Radiated Immunity	IEC 61000-4-3, 3V/m (Criteria A)
Electrical Fast Transient	IEC 61000-4-4, ±2kV (Criteria A)
Surge Immunity	IEC 61000-4-5, ±1kV (Criteria A)
Conducted Immunity	IEC 61000-4-6, 3V/rms (Criteria A)
Magnetic Field Immunity	IEC 61000-4-8, 1A/m (Criteria A)

Notes

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

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

#3: In this datasheet, all test methods are based on our corporate standards.

#4. All characteristics are for listed models, and non-standard models may perform differently. Please contact our technical support for more detail.

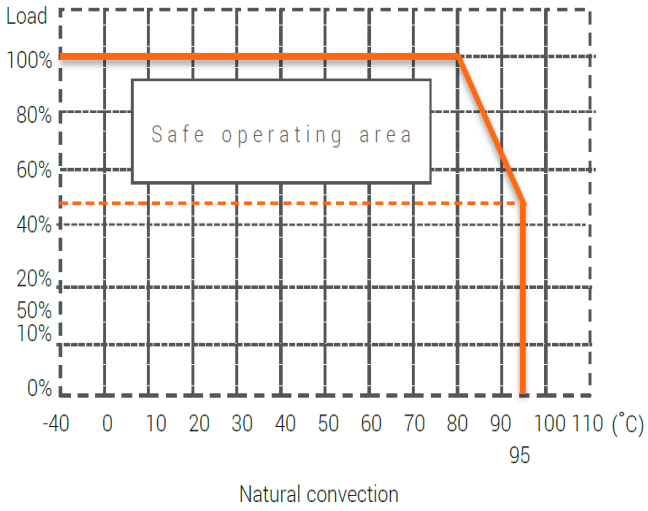
#5: Please contact our technical support for any specific requirement.

#6: Customers are allowed to test once in their production. Thereafter the test voltage and time must be reduced for any repeat testing.

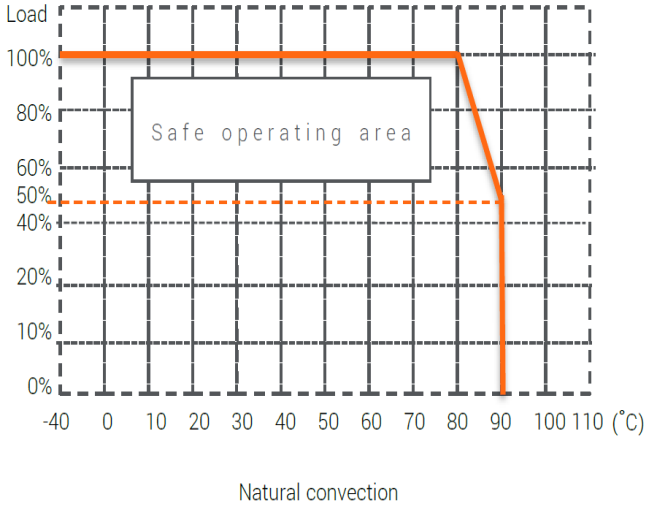
Mechanical Specification

Derating Curve

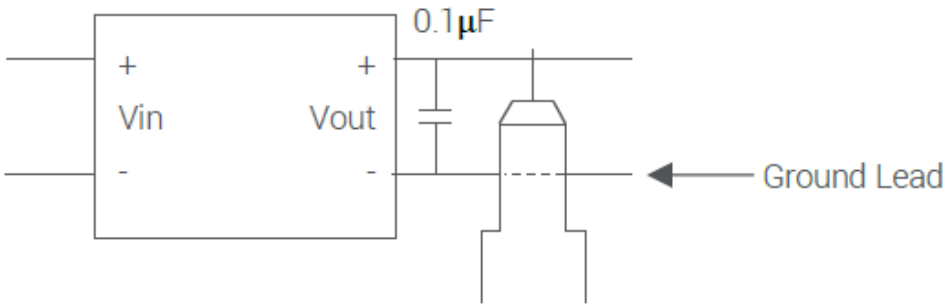
Others



LBA2W-1212 / LBA2W-1215 / LBA2W-1212D

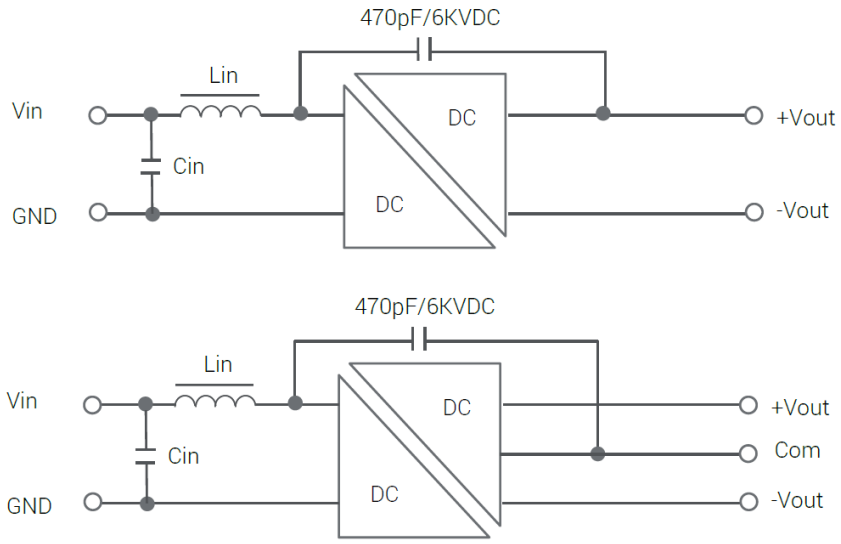


Ripple & Noise Measure Method



Measured with 20MHz bandwidth and 0.1μF ceramic capacitor

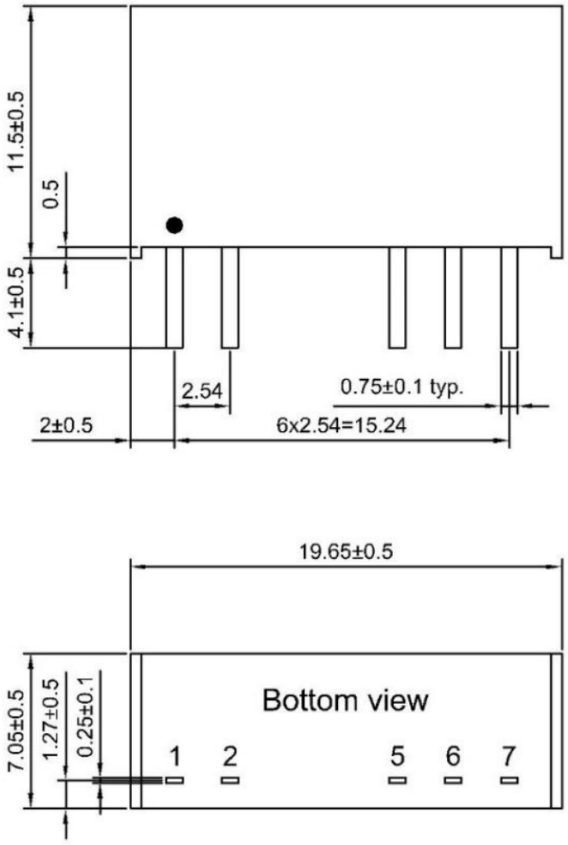
EMI Filtering-Suggestion for Class B



The External Filter for meet EN55032 Class B.

Part No.	Input Voltage	Inductance / Capacitance (Lin/Cin)
LBA2W	3.3V	47 µH / 22 µF
	5V	47 µH / 22 µF
	12V	47 µH / 10 µF
	24V	100 µH / 22 µF

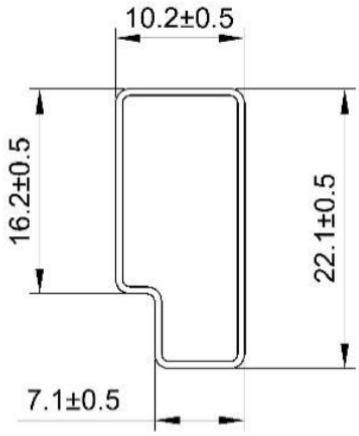
Mechanical Dimension & Pinning



Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
5	-Vout	-Vout
6	No Pin	COM
7	+Vout	+Vout

Package

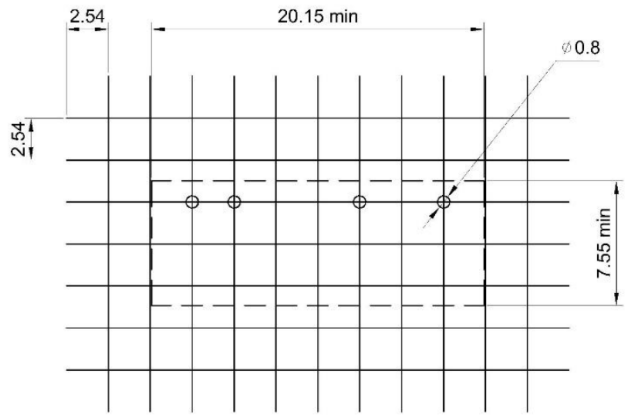
Anti-static liquid tube



UNIT:mm
1 Tube = 24 pcs
Length:520±2mm

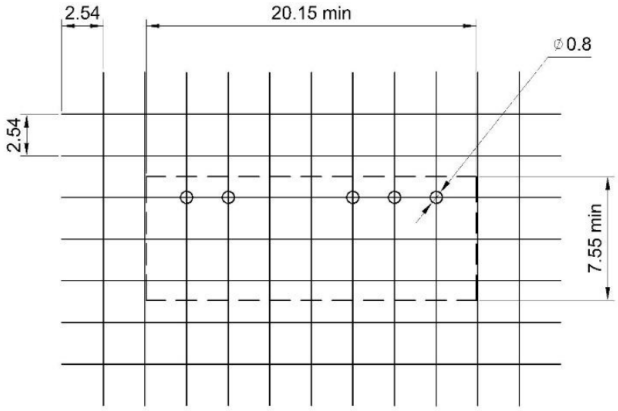
Recommended Footprint

Single



Footprint (Top view)

Dual



Footprint (Top view)