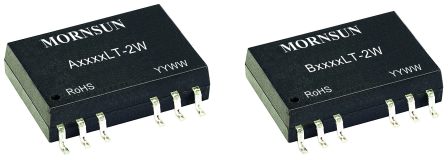
2W, Fixed input voltage, isolated & unregulated dual/single output



Patent Protection RoHS

FEATURES

- Efficiency up to 85%
- Operating temperature range: -40℃ to +85℃
- Isolation voltage: 1K VDC
- Ultra-thin SMD Package
- Internal surface mounted design
- International standard pin-out

A_LT-2W & B_LT-2W series is specially designed for applications where an isolated voltage is required in a distributed power supply system. It is suitable for

1.Where the voltage of the input power supply is stable (voltage variation: ±10%Vin);

2.Where isolation is necessary between input and output (isolation voltage ≤1000VDC);

3.Where do not has high requirement of line regulation , load regulation and the ripple & noise of the output voltage;

Such as: pure digital circuits, low frequency analog circuits, and IGBT power device driving circuits.

Selection Guide

Part No.	Input Voltage (VDC)	Output		Efficiency (%,Min./Typ.) @ Full Load	Max. Capacitive Load* (μF)
	Nominal (Range)	Output Voltage (VDC)	Output Current (mA)(Max./Min.)		
A0505LT-2W	5 (4.5-5.5)	±5	±200/±20	78/82	100
A0512LT-2W		±12	±83/±9	80/84	
B0505LT-2W		5	400/40	76/80	220
B0512LT-2W		12	167/17	80/84	
B0515LT-2W		15	133/14	80/84	
A1215LT-2W	12 (10.8-13.2)	±15	±67/±7	81/85	100
B1209LT-2W		9	222/23	79/83	220

Note:* The capacitive loads of positive and negative outputs are identical.

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Current (full load / no-load)	5VDC input	--	500/35	--	mA
	12VDC input	--	200/20	--	
Surge Voltage (1sec. max.)	5VDC input	-0.7	--	9	VDC
	12VDC input	-0.7	--	18	
Input Filter		Capacitor filter			

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy			See tolerance envelope graph (Fig. 1)			
Line Regulation	Input voltage change: ±1%		--	--	±1.2	--
Balance of Output Voltage	Dual output, balanced load		--	±0.4	--	%
Load Regulation	10%-100% load	5VDC output	--	12.8	15	
		9VDC output	--	8.3	10	
		12VDC output	--	6.8	10	
		15VDC output	--	6.3	10	
Ripple & Noise*	20MHz bandwidth		--	75	200	mVp-p
Temperature Drift Coefficient	100% load		--	--	±0.03	%/℃
Output Short Circuit Protection**			--	--	1	s

Notes:
1.Load unbalance of Dual output models is ±5%.
2.*Ripple and noise tested with "parallel cable" method, please see *DC-DC Converter Application Notes* for specific operation methods.
3.**Supply voltage must be discontinued at the end of short circuit duration.

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Isolation Voltage	Input-output, with the test time of 1 minute and the leak current lower than 1mA	1000	--	--	VDC
Isolation Resistance	Input-output, isolation voltage 500VDC	1000	--	--	MΩ
Isolation Capacitance	Input-output, 100KHz/0.1V	--	30	--	pF
Operating Temperature	Derating if the temperature ≥85℃, (see Fig. 2)	-40	--	85	℃
Storage Temperature		-55	--	125	
Casing Temperature Rise	Ta=25℃	--	25	--	
Pin Welding Resistance Temperature	Welding spot is 1.5mm away from the casing, 10 seconds	--	--	300	
Reflow Soldering Temperature		Peak temp.≤245℃, maximum duration time≤60s at 217℃. For actual application, please refer to IPC/JEDEC J-STD-020D.1.			
Storage Humidity	Non-condensing	--	--	95	%
Switching Frequency	100% load, nominal input voltage	--	70	--	KHz
MTBF	MIL-HDFK-217F@25℃	3500	--	--	K hours

Physical Specifications

Casing Material	Black flame-retardant heat-proof epoxy resin (UL94-V0)
Package Dimensions	17.78*17.78*6.00 mm
Weight	2.1 g(Typ.)
Cooling Method	Free air convection

EMC Specifications

EMI	Conducted disturbance	CISPR22/EN55022 CLASS A (see Fig. 5 for recommended circuit)
EMS	Electrostatic discharge	IEC/EN61000-4-2 Contact ±6KV perf. Criteria B

Product Characteristic Curve

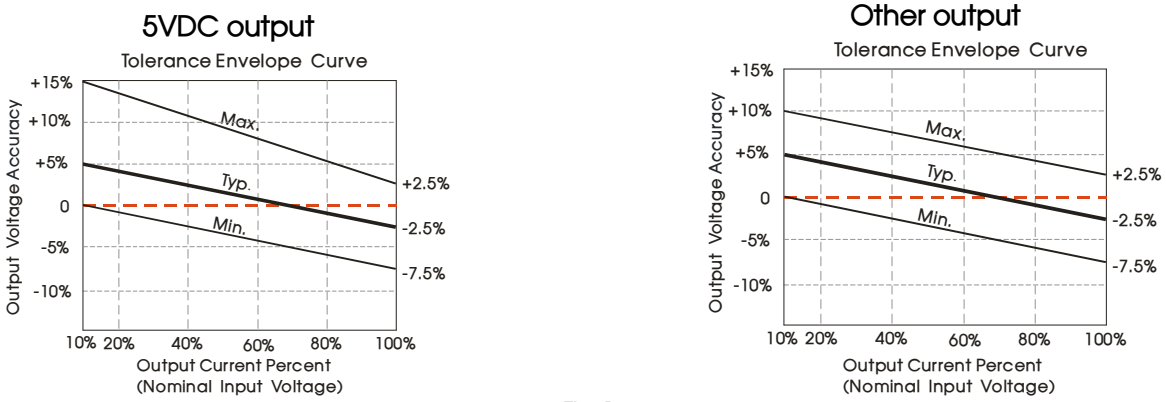


Fig. 1

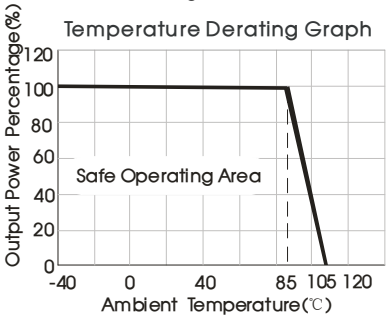
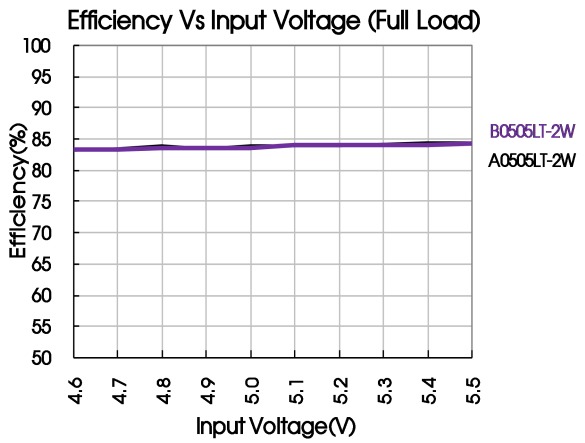
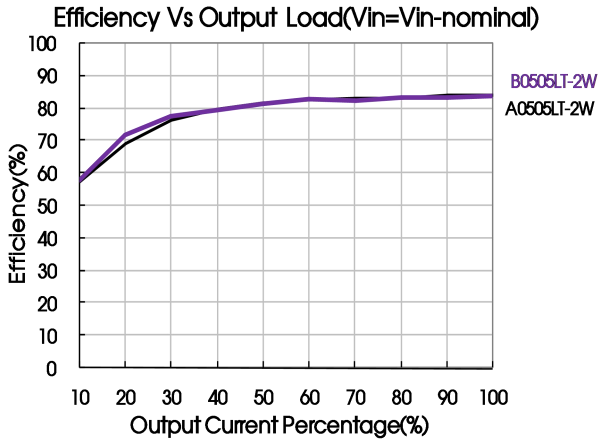


Fig. 2





Design Reference

1. Typical application

If it is required to further reduce input and output ripple, a filter capacitor can be connected to the input and output terminals, see Fig.3. Moreover, choosing suitable filter capacitor is very important , start-up problems may be caused by too large capacitance. To ensured the modules running well, the recommended capacitive load values as shown in Table 1.

The simplest device for output voltage regulation, over-voltage and over-current protection is a linear voltage regulator with overheat protection that is connected to the input or output end in series (see Fig. 4).

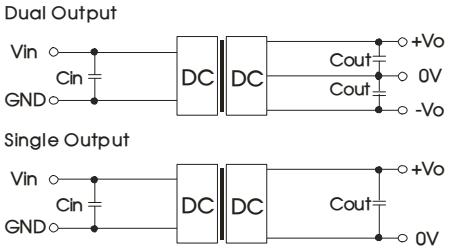


Fig.3

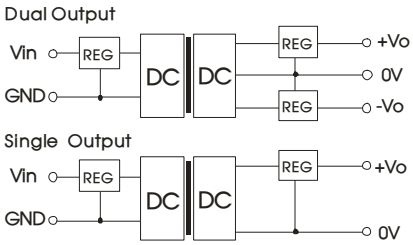


Fig.4

Recommended capacitive load value table (Table 1)

Vin (VDC)	Cin (μF)	Single Vout (VDC)	Cout (μF)	Dual Vout (VDC)	Cout* (μF)
5	4.7	5	10	±5	4.7
12	2.2	9	4.7	±12	1
-	-	12	2.2	±15	0.47
-	-	15	1	--	--

2. EMC typical recommended circuit

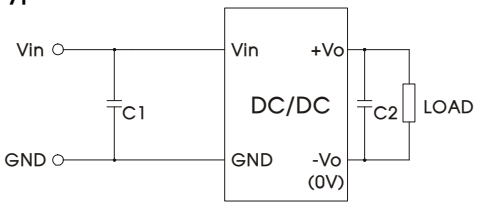


Fig. 4

Input voltage (V)		5/12
EMI	C1	2.2μF /50V
	C2	Refer to the Cout in Fig.3

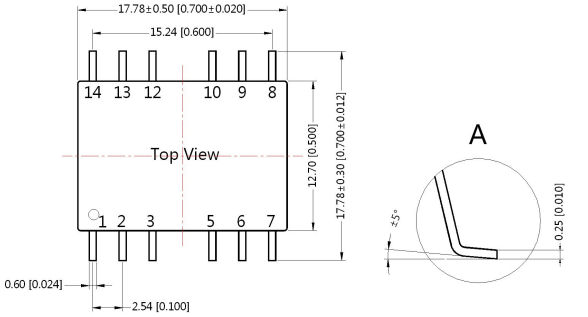
3. Output load requirements

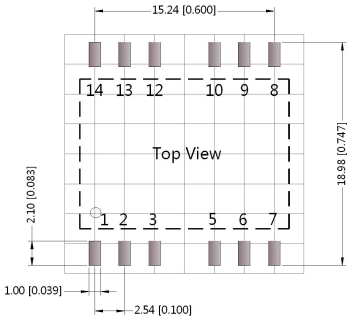
In order to ensure the converter can work reliably with high efficiency, the minimum load should not less than 10% rated load when it is used. If the needed power is indeed small, please parallel a resistor on t the output side (The sum of the efficient power and resistor consumption power is not less than 10%).

4.For more information please find the application notes on www.mornsun-power.com

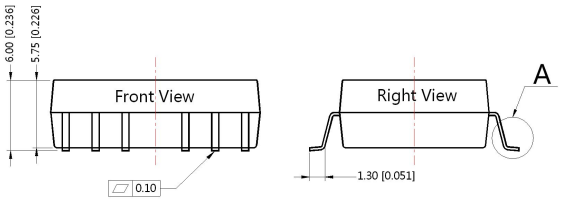
Dimensions and Recommended Layout

THIRD ANGLE PROJECTION





Note: Grid 2.54*2.54mm



Note:
Unit: mm[inch]
Pin section tolerances: ±0.10[±0.004]
General tolerances: ±0.25[±0.010]

Pin-Out		
Pin	B_LT	A_LT
1	GND	GND
2	Vin	Vin
5	NC	-Vo
6	0V	0V
7	+Vo	+Vo
10	NC	-Vo
Others	NC	NC

NC: No Connection

Notes:

1. Packing Information please refer to 'Product Packing Information'. Packing bag number: 58200025;
2. If the product is operated under the min. required load, the product performance cannot be guaranteed to comply with all performance indexes in this datasheet;
3. The max. capacitive load should be tested within the input voltage range and under full load conditions;
4. Unless otherwise specified, data in this datasheet should be tested under the conditions of Ta=25° C, humidity<75% when inputting nominal voltage and outputting rated load;
5. All index testing methods in this datasheet are based on our Company's corporate standards;
6. The performance indexes of the product models listed in this manual are as above, but some indexes of non-standard model products will exceed the above-mentioned requirements, and please directly contact our technicians for specific information;
7. We can provide product customization service;
8. Specifications of this product are subject to changes without prior notice.

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