



➡ D_S_LT-1W Series

Fixed input voltage
Unregulated single output
DC/DC Converter



• Product Feature

- ⦿ Constant voltage input(5-24VDC±5%)
- ⦿ Patch (SMD) package
- ⦿ Operating temperature range: -40°C~+ 105°C
- ⦿ Isolation voltage 3000VDC 0.5mA 1Minute
- ⦿ External patch design
- ⦿ Bare board
- ⦿ Comply with the RoHS directive
- ⦿ Heat dissipation mode: natural cooling
- ⦿ It has good shielding and anti-interference performance and electromagnetic compatibility, lightning protection, output overcurrent, short circuit protection, overheating protection, self-recovery and other functions.

• Product Feature

D_S_LT-1W is the latest product developed by our company, with a volume of 12.7*10.41*5.0mm. This product has the characteristics of high efficiency and low power consumption, the product meets the requirements of green environmental protection, has good shielding and anti-interference performance and electromagnetic compatibility, short-circuit protection, self-recovery and other functions.

• Application Area

Communication interface converter (RS232/485) cellular phone, semiconductor laser, operational amplifier power supply, portable instrument, automatic control device, etc.

Converter Parameters

Part No.	Input Voltage (V)	Output Voltage (V±4%)	Full load output current(mA)	Efficiency	Isolatio withstand voltage (VDC)	Weight ±1	Packaging
D3.3S3.3LT-1W	±3.3VDC (±5%)	3.3VDC	303	≥72%	3000VDC	2.5	SMD
D3.3S05LT-1W		5VDC	200	≥75%	3000VDC	2.5	SMD



Converter Parameters

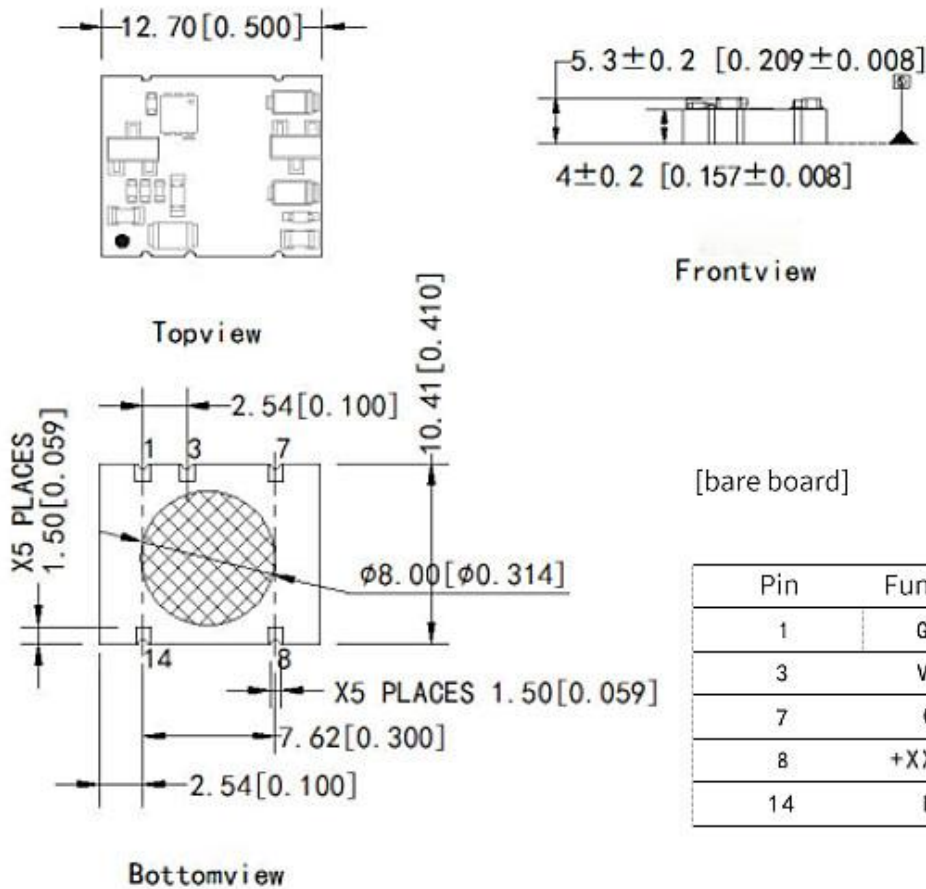
Part No.	Input Voltage (V)	Output Voltage (V±4%)	Full load output current(mA)	Efficiency	Isolatio withstand voltage (VDC)	Weight ±1	Packaging
D05S05LT-1W	±5VDC (±5%)	5VDC	200	≥72%	3000VDC	2.5	SMD
D05S12LT-1W		12VDC	83	≥75%	3000VDC	2.5	SMD
D05S15LT-1W		15VDC	66	≥75%	3000VDC	2.5	SMD
D05S24LT-1W		24VDC	42	≥78%	3000VDC	2.5	SMD
D12S05LT- 1W	±12VDC (±5%)	5VDC	200	≥76%	3000VDC	2.5	SMD
D12S09LT- 1W		9VDC	111	≥76%	3000VDC	2.5	SMD
D12S12LT- 1W		12VDC	83	≥78%	3000VDC	2.5	SMD
D12S15LT- 1W		15VDC	66	≥76%	3000VDC	2.5	SMD
D12S24LT- 1W		24VDC	41	≥72%	3000VDC	2.5	SMD
D24S05LT- 1W	±24VDC (±5%)	5VDC	200	≥72%	3000VDC	2.5	SMD
D24S09LT- 1W		9VDC	111	≥76%	3000VDC	2.5	SMD
D24S12LT- 1W		12VDC	83	≥78%	3000VDC	2.5	SMD
D24S15LT- 1W		15VDC	66	≥70%	3000VDC	2.5	SMD
D24S24LT- 1W		24VDC	41	≥72%	3000VDC	2.5	SMD



Overall dimensions and pin definition

D_S_LT-1W

12.70 × 10.41 × 5.00 (mm)





Electrical Characteristics

Electrical Characteristics

Item	Symbol	Condition except as otherwise herein provided $V_i, -40^{\circ}\text{C} \leq T_c \leq 85^{\circ}\text{C}$	Limit Value		Unit
			Min	Max	
Output Voltage	V_o	Full Load	$V_o - 4\%V_o$	$V_o + 4\%V_o$	V
Max Output Current	$I_{o\max}$	-	-	P_o/U_o	A
Output Ripple Voltage	V_{p-p}	Full Load, V_i , BW=20MHz, Normal Temperature	$50 \pm 10\%$	$300 \pm 10\%$	mV
Voltage regulation factor	S_v	$V_{i\min}$, V_i , $V_{i\max}$, Full Load	-	2.00	%
Load regulation	S_i	V_i , $I_o = (10\% \sim 100\%)I_{o\max}$	-	1.00	%
Efficiency	η	V_i , Full Load, Normal Temperature	72.00	-	%
Insulation Resistance	RI	Add 1000VDC between the input and output points Room temperature, $t \geq 35$	50	-	MΩ

General Characteristics

EMC	Magnetic field sensitivity test	GB6833.2-87
	Electrostatic discharge sensitivity test	GB6833.3-87
	Radiation sensitivity test	GB6833.5-87
	Conduction sensitivity test	GB6833.6-87
Temperature excursion	0.03%/°C	
Frequency	50K HZ~300K HZ (MAX)	
Humidness	90% (max)	
Leak Current	NO	
MTBF	>500,000 Hours	

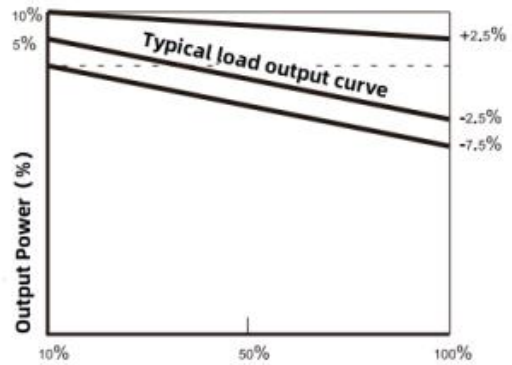


Temperature curve, error envelope curve

• Typical efficiency curve

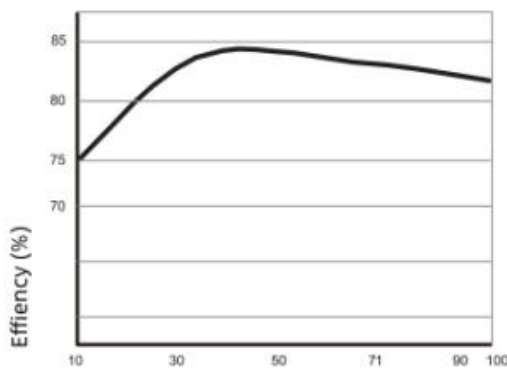


Environment temperature (°C)
Temperature profile



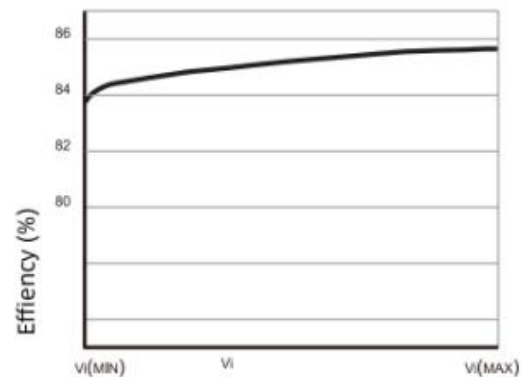
Environment temperature (°C)
Error envelope graph

• Typical efficiency curve



Load (%) (Input Voltage=Vin)

Efficiency/load graph

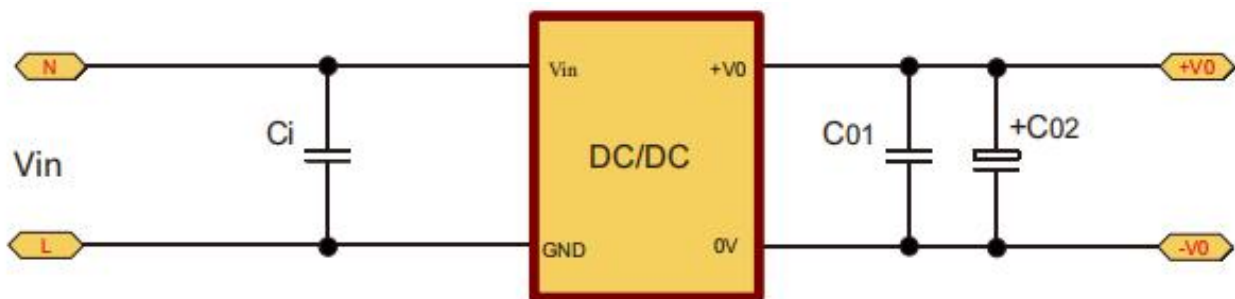


Load (%) (Input Voltage=Vin)

Efficiency/Input voltage graph

Typical Application

• Recommended Circuit





Typical Application

• Recommendation test

Filtering: In some circuits sensitive to noise and ripple, a filter capacitor can be externally connected to the input and output terminals of DC/DC to reduce ripple's impact on the system, but the value of the filter capacitance should be appropriate. If the capacitor is too large, it may cause startup problems. For each output line, under the condition of ensuring safe and reliable operation, The maximum capacity of its filtering capacitance can be referred to the external capacitance table. In order to obtain very low ripple, an "LC" filtering network can be connected to the input and output end of DC/DC converter, so that the filtering effect will be better. At the same time, it should be noted that the value of inductance and the frequency of "LC" filtering network should be staggered from the frequency of DC/DC module power supply to avoid mutual interference.

For each output line, it is recommended to see the capacitive load value (Table 1) under safe and reliable working conditions.

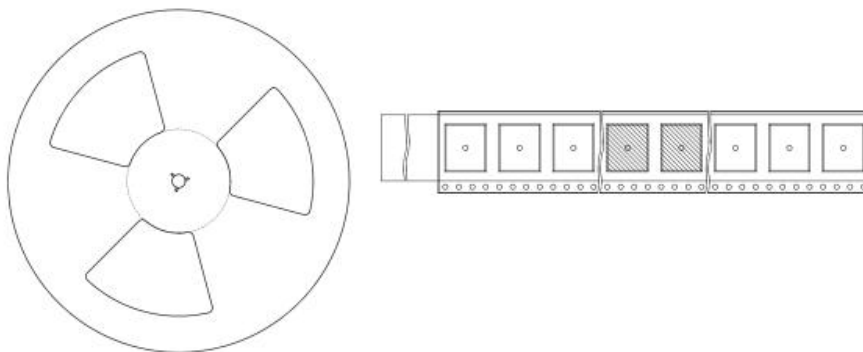
Table of recommended capacitive load values (Table 1)

Input Voltage (Vin+)	Input Capacitor(Cin)	Output Voltage(Vout)	Output Capacitor Cout)
5V	1uF	3.3V	4.7uF
12V	4.7uF	9V	2.2uF
24V	1uF	15V	0.47uF

➡ Explanatory matters

• Packing

This series module is packed with 2 electrostatic packing tubes.



• Transport

The modular package is allowed to be transported by any means of transport, which shall avoid direct rain or snow and mechanical damage.

• Store

Modules should be stored in a warehouse where the ambient temperature is -40 degrees ~ 125 degrees, the relative humidity is 10%~90%, and the surrounding environment is free from acid, alkaline and other harmful gases.

The above are the performance indicators of the product series listed in this manual. Some indicators of non-standard products may exceed the above requirements. In case of any inconsistency between the manual and the product specification documents, please refer to the specification documents.