



LD03 Series

UNIVERSAL INPUT VOLTAGE ISOLATED & REGULATED SINGLE OUTPUT AC-DC CONVERTER

multi-country patent protection **RoHS**

PRODUCT FEATURES

Compact, light Weight
 Universal input voltage(via same terminals)
 Wide input voltage range :
 85 to264VAC(120 to370VDC)
 Efficiency up to 73%
 Operating temperature :-20°C to+85°C
 Heat dissipation :natural
 Switching frequency :40-150kHz
 Continuous no load protection and short circuit protection
 MTBF>200,000Hours
 Industrial class

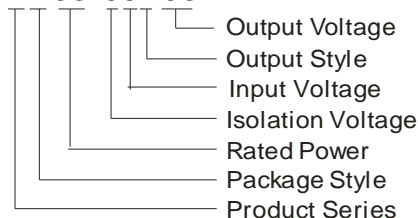
APPLICATION

LD03 series has many features such as wide input voltage range (Universal input voltage, applicable for global electric supply network), stable output voltage, high transfer efficiency, compact size, simple external circuit, high reliability and safety isolation.

This model is single output. Main applications are: AC electric supply where needs safety isolation, mini-power, multiple output and specially occasions where request compact size and simple external circuit.

SELECTION GUIDE

LD03-00B03



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PRODUCT PROGRAM

Model	Input voltage		Output			Efficiency (%) (Typ)	Package style
	Rating (VAC)	Range (VAC)	Voltage (VDC)	Current (mA)	Ripple & Noise (mV)		
LD03-00B03	100-240	85-264	3.3	700	≤150	65	DIP
LD03-00B05	100-240	85-264	5.0	500	≤100	70	DIP
LD03-00B09	100-240	85-264	9.0	300	≤100	71	DIP
LD03-00B12	100-240	85-264	12	250	≤100	72	DIP
LD03-00B15	100-240	85-264	15	200	≤100	72	DIP
LD03-00B24	100-240	85-264	24	125	≤100	73	DIP

ISOLATION FEATURES

Item	Operation Conditions	Min	Typ	Max	Units
Isolation Resistance	Input & Output	2500			VAC
Isolation Resistance	Input & Case	2000			VAC
Isolation Resistance	Output & Case	500			VAC
Isolation Resistance	Isolation Voltage:500VDC	1000			MΩ

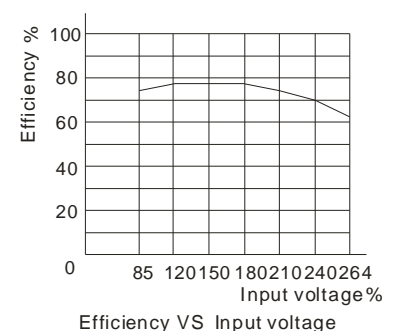
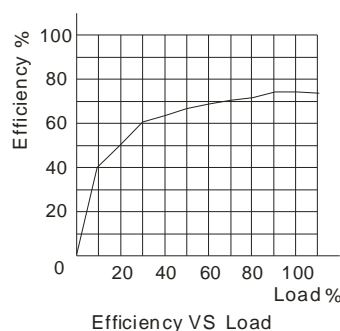
OUTPUT FEATURES

Item	Operation Conditions	Min	Typ	Max	Units
Rated output power	Please refer to model list for details		3		W
Output voltage (Setting accuracy)	Refer to recommended circuit		±1	±3	%
Load regulation	From 10% loading to 100% loading			±1	
Voltage regulation	Input voltage from low to high			±0.5	
Temperature drift(Vout)	Refer to recommended circuit		0.03		%/°C
Starting delay			≤1		s
Switching frequency	100% load, rated input voltage	40	100	130	kHz

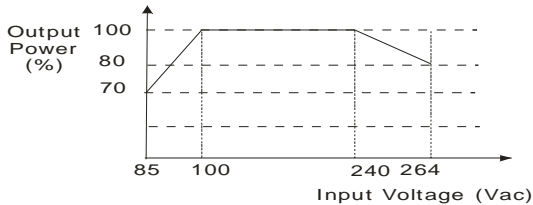
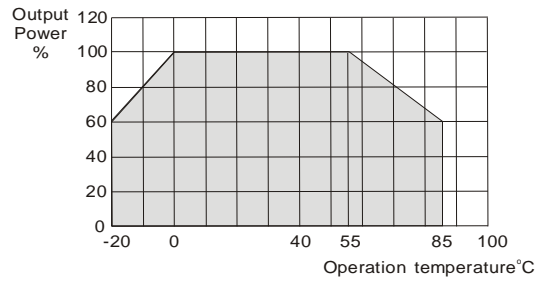
Notes:

1. Unless otherwise specified, data above are on the basis of TA=25°C, humidity<75%, typical input voltage and rated loading;
2. Above are characteristic specification of model on this datasheet, specifications of custom product may be different. Please contact our service people directly for certain conditions.

TYPICAL EFFICIENCY CURVE



TYPICAL DERATING CURVE



TYPICAL APPLICATION GUIDE

AC/DC application

- Recommended circuit: Typical application circuit is shown as Figure 1. If EMC performance is not required, Circuit in frame of dashed line can be removed.
- Clearance and creepage: for application Environment of Class I and Class II devices, users should guarantee there is clearance no less than 2mm and creepage no less than 2.5mm between L and N before the fuse.
- Fuse, 1A/250V or 10Ω/2W wire-wound resistor
- Input filtering capacitor. Terminals 22 and 26 are internal rectification and filtering terminals. To protect the models further, it is recommended to connect an electrolytic capacitor C4 (it is recommended to be 4.7uF/400V). If operation voltage of the module is between 160~264VAC, C4 can be removed.
- Input EMI filtering network. (Refer to Figure 1) Combination of NF, C1, C2 and C3 form input EMI filtering network.

MOV: pressure sensitive resistor, model 471KD07

C1: Xcapacitor, recommended parameter 0.01uF/275V
CY: 102K/400V

NF: common model choke, UU9.8 or ring core, inductance is about 10mH, wire diameter 0.22mm.

- To make sure the product work at perfect operation status with full loading external capacitor is necessary and it is recommended to use high frequency low resistance electrolytic capacitor. Recommended value refer to the below table.

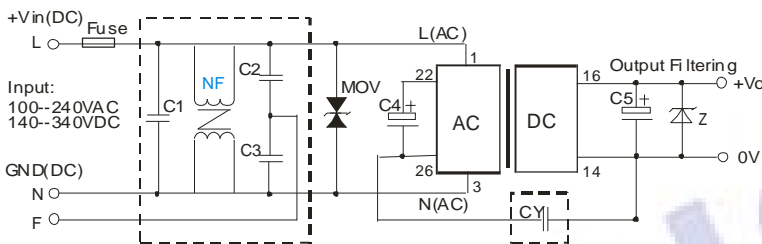
Vout(VDC)	C5	Vout(VDC)	C5
3.3	330μF/16V	12	220μF/25V
5	330μF/16V	15	220μF/25V
9	330μF/16V	24	150μF/35V

- "Z" is a TVS to protect post circuits (when module works incorrectly), is recommended.
- Refer to RIPPLE TESTING DEMONSTRATION, C6 is recommended to be 0.1uF and C5 10uF.

APPLICATION NOTE

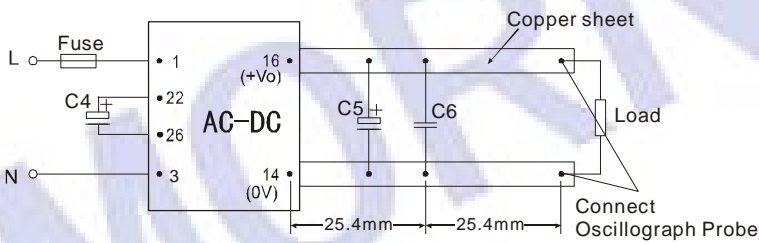
- Please make sure all terminals are connected in accordance with instruction manual.
- The module is a sort of electronic components, installing and using should be implemented by professionals.
- This series of power module is a sort of first level power supply, safety standard must be strictly abided in application.
- Make sure the input of module is connected with a fuse, to meet the requirement of safety standard. The parameters of fuse should be appropriate.
- The input and output of module are dangerous energies, and it must be guaranteed that end users will not be able to touch them.
- Application circuits and parameters are for reference only. They should be confirmed by experiment before finish a circuit design.
- You may not be noticed for amendments and updated of this document. Please pay attention on new application in actual application.
- No parallel connection or plug and play.

TYPICAL APPLICATION CIRCUIT



(Figure 5)

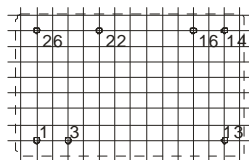
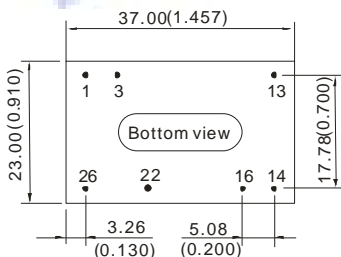
RIPPLE TESTING DEMONSTRATION



DIMENSIONS AND PINOUTS

First Angle Projection

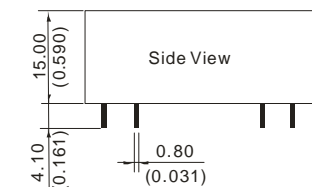
RECOMMENDED FOOTPRINT
Top view, grid: 2.54mm(0.1inch),
diameter: 1.00mm(0.039inch)



FOOTPRINT DETAILS

Pin	Singles
1	L
3	N
13	NC
14	-Vo
16	+Vo
22	+Vin(DC)
26	-Vin(DC)

NC: No connection



Note:
Unit: mm(inch)
Pin diameter: ±0.80mm(±0.031inch)
Pin diameter tolerance: ±0.05mm(±0.002inch)
General tolerance: ±0.50mm(±0.020inch)