LD01 & LD02 SERIES

1W/2W, COMPACT AC-DC CONVERTER

LD01 & LD02 Series are compact PCB mount power supplies.
Featuring international approvals and standby power consumption of 0.6W (max) this high efficiency series can be wideley used in industrial, telecom, medical and instrumentation applications.

RoHS

Product features

Universal Input : 85 ~ 305Vac, 50/60Hz
DC input 120~430Vdc
EMC meets EN55022, EN55204
Low Ripple and Noise
High efficiency
Standby Power consumption 0.1W
Output short circuit protection, over-current protection and over-voltage protection
Meets IEC60950 and IEC61000 certification standards

Model selection

LD01-10B24

- Output voltage
- Output style
- Input voltage
- Isolation voltage
- Rated power
- Package style
- Product series

PRODUCT								
RS STOCK NO.	MODEL NO.	PACKAGE	POWER	OUTPUT (Vo / Io)	MAX CAPACITIVE LOAD (µF)	RIPPLE & NOISE (TYP.)	EFFICIENCY. (%TYP.)	STANDBY POWER (MAX.)
771-9388	LD01-10B05	33.7 x 22.2 x 18.0mm	1W	5V/200mA	4000	100mV	68	0.1W
771-9382	LD01-10B09			9V/111mA	2200		72	
771-9391	LD01-10B12			12V/83mA	2200		73	
771-9394	LD01-10B15			15V/67mA	1000		74	
771-9398	LD01-10B24			24V/42mA	680		75	
771-9408	LD02-10B03		2W	3.3V/600mA	4000		65	
771-9401	LD02-10B05			5V/400mA	4000		70	
771-9405	LD02-10B09			9V/222mA	2200		72	
771-9414	LD02-10B12			12V/167mA	2200		76	
771-9417	LD02-10B15			15V/133mA	1000		76	
771-9411	LD02-10B24			24V/83mA	680		78	

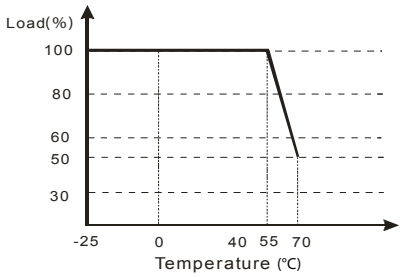
INPUT SPECIFICATIONS			
Input voltage range		85~305Vac, 120~430Vdc	
Input frequency		47~63Hz	
Input current		110Vac	230Vac
	LD01 SERIES	30mA, typ	17mA, typ
	LD02 SERIES	44mA, typ	25mA, typ
Inrush current		110Vac	230Vac
		5A, typ	11A, typ
Leakage current		0.1mA (max)	

OUTPUT SPECIFICATIONS			
Output voltage accuracy (max)		± 5% (max)	3.3V output ±6%(max)
Line voltage regulation (max)		±2% (max)	
Load variation (10% to 100%)		± 5% (max)	
Ripple & noise (p-p)	(20 MHz bandwidth)	100mV (typ)	200mV (max)
Short circuit protection		Continuous and auto resume	
Over current protection		≥110% I_o can auto resume	

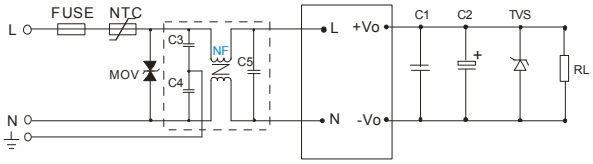
GENERAL SPECIFICATIONS				
Temperature ranges	Operating		-25°C to + 70°C (55~70 °C derating)	
	Power derating (above 55°C)		3.3% / °C	
	Storage		-40°C to + 85°C	
Humidity	Operating humidity		30~90% RH	
	Storage humidity		20~95% RH	
Switching frequency			100kHz (max)	
Isolation voltage (input-output)			3000Vac / 1 min	
EMC	EMI	CE	CISPR22/EN55022, CLASS B	
		RE	CISPR22/EN55022, CLASS B	
	EMS	ESD	IEC/EN 61000-4-2 Air ±8kV / Contact ±4kV	perf. Criteria B
		RS	IEC/EN 61000-4-3 10V/m	perf. Criteria A
		*EFT	IEC/EN 61000-4-4 ±2kV	perf. Criteria B
		*Surge	IEC/EN 61000-4-5 ±1kV/±2kV	perf. Criteria B
		CS	IEC/EN 61000-4-6 10 V rms	perf. Criteria A
		PFM	IEC/EN 61000-4-8 10 A/m	perf. Criteria A
		Voltage dips, short and interruptions immunity	IEC/EN 61000-4-11 0%-70%	perf. Criteria B
Safety approvals			UL60950/EN60950	
Safety class			CLASS II	
Case material			UL94V-0	
Installation			PCB	
Cooling			Free air convection	
MTBF			>300,000h @25°C	
Weight			20g (typ)	

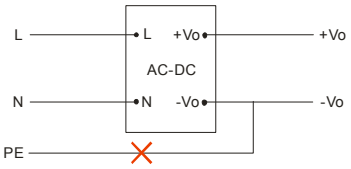
Note: 1. *External circuit is required for inrush and electrical fast transients experiment, refer to typical application.
2. Unless otherwise specified, all specifications above are measured at rated input voltage and rated output load, TA=25°C, humidity < 75%.

Temperature vs load



Typical applications



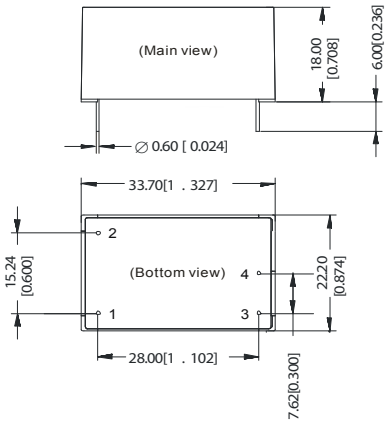


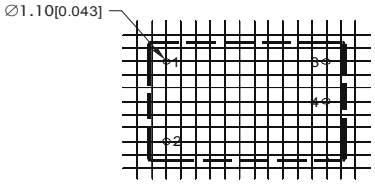
Note: This application is not supported for this series.

EXTERNAL CAPACITORS TYPICAL VALUE (UNIT: μF)			
MODEL	C1	C2	TVS
LD02-10B03	1μF/50V	220	SMBJ7.0A
LD01/02-20B05	1μF/50V	220	SMBJ7.0A
LD01/02-20B09	1μF/50V	120	SMBJ12A
LD01/02-20B12	1μF/50V	120	SMBJ20A
LD01/02-20B15	1μF/50V	120	SMBJ20A
LD01/02-20B24	1μF/50V	68	SMBJ30A

Note: 1. C1 is ceramic capacitor, it is used to filter high frequency noise. C2 is electrolytic capacitor, it is recommended to use high frequency and low impedance electrolytic capacitors. For capacitance and current of capacitor please refer to manufacture's datasheet. Voltage derating of capacitor should be 80% or above. TVS is a recommended component to protect load (if converter fails).
2. It is recommended to fit a FUSE, the parameter is 0.5A/250V slow blow. NTC is recommended to use 5D-9.
3. MOV: Varistor, model: 561KD14 it is used to protect the device under surge. C3,C4:Y capacitor, recommended parameter 2200pF/400V; C5:X capacitor, recommended parameter0.1-0.33μF/300V;
NF: common model choke, recommended inductance is about 15mH-30mH.

PCB mounting with solder pins





Note: grid 2.54*2.54mm.

FOOTPRINT DETAILS	
PIN	FUNCTION
1	N
2	L
3	-Vo
4	+Vo

Note:
Unit:mm[inch]Pin diameter tolerances: 0.10mm [0.004inch]
General tolerances: 0.50mm [0.020inch]