

- Operating temperature range: -40°C to +85°C
- Isolation Voltage: 1500VDC
- Maximum Efficiency: up to 82%
- Continuous Short-Circuit Protection
- Complies with the RoHS Directive



Selection Table

Product Model	Input Voltage (VDC)	Output		Full-Load Efficiency % (Min, Typ)	Maximum Capacitive Load (µF)
	Nominal(Range)	Output Voltage (VDC)	Maximum Current (mA)Max./Min		
LRS3-05S03	5 (4.5-9)	3.3	600/0	73/75	1800
LRS3-05S05		5	500/0	78/80	1000
LRS3-05S09		9	278/0	78/80	680
LRS3-05S12		12	210/0	79/81	680
LRS3-05S15		15	180/0	79/81	470
LRS3-05S24		24	110/0	81/82	330
LRS3-05D05		±5	±250/0	77/79	1000
LRS3-05D12		±12	±105/0	78/80	470
LRS3-05D15		±15	±90/0	79/81	330
LRS3-05D24		±24	±55/0	79/81	200
LRS3-12S03	12 (9-36)	3.3	600/0	73/75	1760
LRS3-12S05		5	600/0	78/80	1000
LRS3-12S09		9	333/0	78/80	680
LRS3-12S12		12	250/0	79/81	680
LRS3-12S15		15	200/0	79/81	470
LRS3-12S24		24	125/0	81/82	330
LRS3-12D05		±5	±300/0	77/79	1000
LRS3-12D09		±9	±167/0	77/79	470
LRS3-12D12		±12	±125/0	78/80	330
LRS3-12D15		±15	±100/0	79/81	200
LRS3-12D24	±24	±62/0	79/81	200	
LRS3-24S03	24 (9-36)	3.3	600/0	73/75	1760
LRS3-24S05		5	600/0	78/80	1000
LRS3-24S09		9	333/0	78/80	680
LRS3-24S12		12	250/0	79/81	680
LRS3-24S15		15	200/0	79/81	470
LRS3-24S24		24	125/0	81/82	330
LRS3-24D05		±5	±300/0	77/79	1000
LRS3-24D12		±12	±125/0	78/80	330

LRS3-24D15		±15	±100/0	79/81	200
LRS3-48S03	48 (18-75)	3.3	600/0	73/75	1760
LRS3-48S05		5	600/0	78/80	1000
LRS3-48S09		9	333/0	78/80	680
LRS3-48S12		12	250/0	79/81	680
LRS3-48S15		15	200/0	79/81	470
LRS3-48S24		24	125/0	81/82	330
LRS3-48D05		±5	±300/0	77/79	1000
LRS3-48D12		±12	±125/0	78/80	330
LRS3-48D15		±15	±100/0	79/81	200

Input Characteristics

Parameter	Condition	Min.	Typ.	Max.	Unit
Input Current (Full Load/No Load)	5VDC Input	--	730/40	--	mA
	12VDC Input	--	306/60	--	
	24VDC Input	--	140/25	--	
	48VDC Input	--	82/15	--	
Reflected Ripple Current		--	50	--	
Surge Voltage	5VDC Input	-0.7	--	12	VDC
	12VDC Input	-0.7	--	25	
	24VDC Input	-0.7	--	50	
	48VDC Input	-0.7	--	100	
Startup Voltage	5VDC Input	--	--	4.5	
	12VDC Input	--	--	9	
	24VDC Input	--	--	9	
	48VDC Input	--	--	18	
Input Filter Type		Capacitive Filter			
Hot Swap		Not Supported			
Remote Control Pin(CTRL)	Module Shutdown	0-0.7V Shutdown			
	Module Startup	Floating or 3.5-12V Startup			

Output Characteristics

Parameter	Condition	Min.	Typ.	Max.	Unit
Output Voltage Accuracy	5% to 100% Load	--	±1.0	±3.0	%
Line Regulation	Full Load, Output Voltage from Low to High Limit	--	±0.3	±0.5	
Load Regulation	10% to 100% Load	--	±0.5	±1.0	
Ripple and Noise	20MHz Bandwidth	--	50	150	mVp-p
Transient Recovery Time	25% Load Step Change	--	300	500	ms
Transient Response Deviation		--	±3	±5	%

DC/DC Power Module-3W Wide Voltage



Temperature Coefficient	Full Load	--	±0.01	±0.02	%/°C
Overload Protection		110	140	--	%
Short-Circuit Protection		Continuous, Self-Recovering			

General characteristics

Parameter	Condition	Min.	Typ.	Max.	Unit
Isolation Voltage	Input-Output, Test Time 1 Minute, Leakage Current < 1mA	1500	--	--	VDC
Insulation Resistance	Input-Output, Insulation Voltage 500VDC	1000	--	--	MΩ
Isolation Capacitance	Input-Output, 100KHz/0.1V	--	1000	--	pF
Operating Temperature	Derate at Temperature ≥85°C (see)	-40	--	85	°C
Storage Temperature		-55	--	105	
Storage Humidity	No Condensation	--	--	95	%RH
Lead Soldering Temperature	1.5mm from Housing, 10 Seconds	--	260	--	°C
Switching Frequency	Full Load, Nominal Input Voltage	--	300	--	kHz
MTBF	MIL-HDBK-217F@25°C	3500	--	--	kHours

Physical Characteristics

Housing Material	Black Flame-Retardant Heat-Resistant Plastic (UL 94V-0 rated)
Package Dimensions	22.00*9.50*12.00 mm
Weight	4.8g
Cooling Method	Natural Convection

EMC Characteristic

EMI	Conducted Emission	CISPR32/EN55032 CLASS B (Recommended Circuit see Figure3)
	Radiated Emission	CISPR32/EN55032 CLASS B (Recommended Circuit see Figure 3)
EMS	Electrostatic Discharge (ESD)	IEC/EN61000-4-2 Contact ±8KV perf. Criteria B

Product Feature Curve Diagram

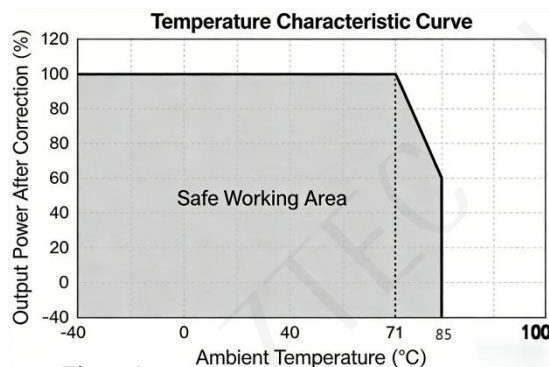
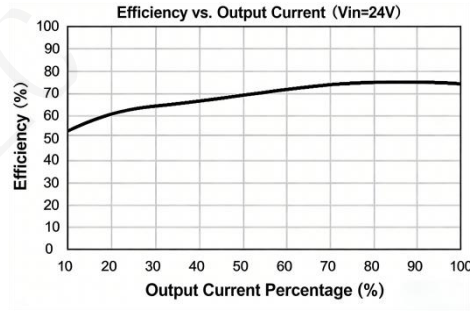
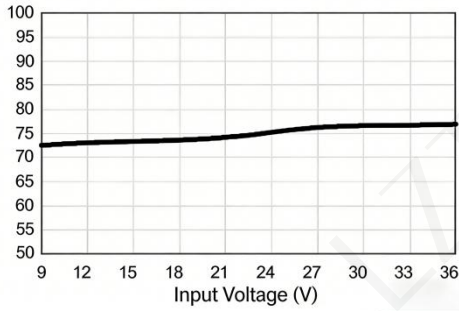
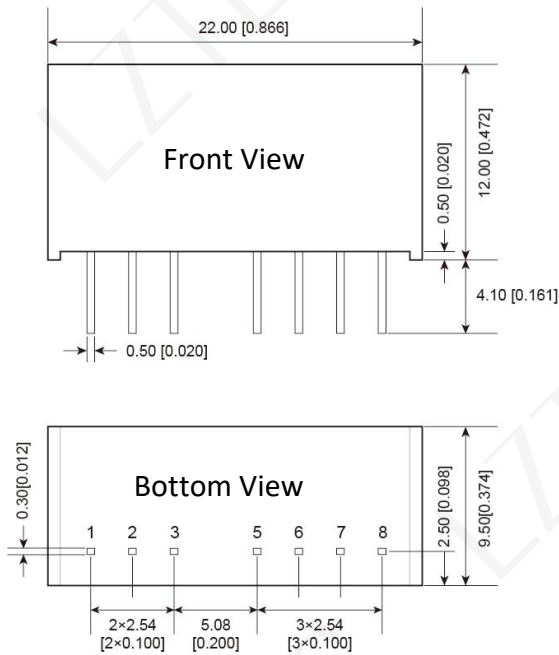


Figure 1



External dimensions/printing layout recommendations



PIN	Single channel	Double channel
1	GND	GND
2	Vin	Vin
3	CTRL	CTRL
5	NC	NC
6	+Vo	+Vo
7	-Vo	COM
8	CS	-Vo

NC: Do not connect to any external circuits.

Size unit: mm[inch]

End diameter tolerance: ± 0.10 [± 0.004]

Unmarked tolerances: ± 0.50 [± 0.020]

1. Application Circuit

All DC/DC converters in this series are tested according to the recommended test circuit (see Figure 2) before delivery.

To further reduce input and output ripple, the external capacitors C_{in1} , C_{in2} , C_s , and C_{out} can be increased or capacitors with low series equivalent resistance (ESR) can be selected. C_s is used to reduce ripple; if the ripple meets the requirements, C_s is not required. However, appropriate filter capacitors should be selected. Excessively large capacitors may cause startup issues. For each output, under safe and reliable operating conditions, the maximum capacitance of the filter capacitor shall not exceed the maximum capacitive load of the product.

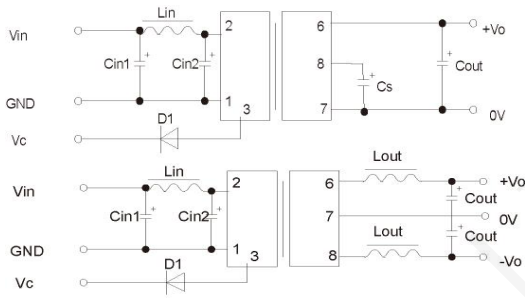


Figure 2

Vin	5、12V	24、48V
Cin1	100uF/25V	10uF/100V
Cin2	47uF/25V	1uF/100V
Lin	4.7uH-12uH	
Cs	10uF/50V-22uF/50V	
Cout	100uF/50V(Typ.)	
Lout	2.2uH-10uH	
Cd	47nF/100V	

2.EMC Solution - Recommended Circuit

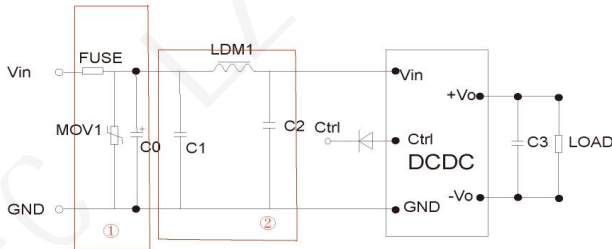


Figure 3

Component	5VDC	12VDC	24VDC	48VDC
FUSE	Selected according to actual customer input current			
MOV	--	14D390K	14D560K	14D101K
C0	1000uF/25V	1000uF/25V	330uF/50V	330uF/100V
C1	4.7uF/50V			4.7uF/100V
LDM1	12uH			
C2	4.7uF/50V			4.7uF/100V
C3	Refer to Cout parameter in Figure 2			
CY1	1nF/2KV			
D1	LMD914			

NOTE

1. If the product operates below the minimum required load, it cannot be guaranteed that all performance metrics specified in this manual will be met.
2. The maximum capacitive load is tested under the condition of input voltage range and full load.
3. Unless otherwise specified, all measurements in this manual are taken at Ta=25°C, temperature <75% RH, nominal input voltage, and rated output load.
4. All test methods in this manual are based on our company's enterprise standards.
5. We offer customized product solutions. For specific requirements, please contact our technical team directly.

Zhuhai LZTEC Technology Co., Ltd

E-Mail: sales@lyztec.com

E-Mail: zena.liu@lyztec.com

WEB:WWW.LYZTEC.COM