

**DESCRIPTION**

The AD-URBxxxxYMD-15WR3 (Single) and AD-URAxxxxYMD-15WR3 (Dual) series are isolated 15W DC-DC converter products a 4:1 input voltage range. They feature efficiencies of up to 91%, 1500VDC input to output isolation, operating ambient temperature of -40°C to +85°C, input under-voltage protection, output over-current, short-circuit protection, which is widely used in medical, industrial controls, electricity, instrumentation, communications and other fields.

FEATURES

- Wide 4:1 input voltage range, 15W output.
- High efficiency up to 91%
- I/O isolation test voltage 1.5K VDC
- No-load power consumption bottom 0.036W
- Input under-voltage protection, output short-circuit, over-current protection
- Continuous short-circuit protection
- Operating temperature range:-40°C to +85°C
- International Standard Pinout with DIP package.

ORDERING INFORMATION

Part Number	Input Voltage (VDC)	Output		Full Load Efficiency(%) Min/Typ	Capacitive Load (uF) Max.
	Nominal (Range)	Voltage (VDC)	Current (mA) Max/Min		
AD-URA2405YMD-15WR3	24.0 (9.0~36.0) Max:40	±5	±1500/0	85/87	1500
AD-URA2412YMD-15WR3		±12	±625/0	88/90	470
AD-URA2415YMD-15WR3		±15	±500/0	88/90	330
AD-URA2424YMD-15WR3		±24	±313/0	86/88	200
AD-URB2403YMD-15WR3		3.3	4000/0	86/88	4700
AD-URB2405YMD-15WR3		5	3000/0	88/90	4700
AD-URB2412YMD-15WR3		12	1250/0	88/90	1000
AD-URB2415YMD-15WR3		15	1000/0	89/91	820
AD-URB2424YMD-15WR3		24	625/0	89/91	270
AD-URA4805YMD-15WR3	48 (18.0~75) Max:80	±5	±1500/0	84/86	1500
AD-URA4812YMD-15WR3		±12	±625/0	87/89	470
AD-URA4815YMD-15WR3		±15	±500/0	87/89	330
AD-URA4824YMD-15WR3		±24	±313/0	88/90	200
AD-URB4803YMD-15WR3		3.3	4000/0	86/88	4700
AD-URB4805YMD-15WR3		5	3000/0	88/90	4700
AD-URB4812YMD-15WR3		12	1250/0	88/90	1000
AD-URB4815YMD-15WR3		15	1000/0	89/91	820
AD-URB4824YMD-15WR3		24	625/0	89/91	270



INPUT SPECIFICATIONS

Item	Operating Conditions	Min	Typ	Max	Unit
Input Current (Full Load/No-Load)	24VDC input, 3.3VDC output		625/30	640/50	mA
	24VDC input, 5VDC output		694/30	710/50	
	24VDC input, 12VDC output		694/69	710/35	
	24VDC input, 15VDC output		678/69	703/15	
	24VDC input, 24VDC output t		678/10	703/20	
	24VDC input, ±5VDC output		718/25	735/35	
	24VDC input, ±12VDC output		686/1.5	702/2	
	24VDC input, ±15VDC output		686/1.5	702/2	
	24VDC input, ±24VDC output		686/1.5	702/2	
	48VDC input, 3.3VDC output		313/15	320/30	
	48VDC input, 5VDC output		348/15	356/30	
	48VDC input, 12VDC output		344/3	352/11	
	48VDC input, 15VDC output		344/3	352/11	
	48VDC input, 24VDC output t		344/4	352/11	
	48VDC input, ±5VDC output		359/1	368/1.5	
	48VDC input, ±12VDC output		343/1	351/1.5	
	48VDC input, ±15VDC output		343/1	351/1.5	
	48VDC input, ±24VDC output		343/1	351/1.5	
Reflect Ripple Current	24V series input		30		mA
	48V series input		30		
Surge Voltage (1sec. max)	24VDC input	-0.7	--	50	VDC
	48VDC input	-0.7	--	100	
Start-up Voltage	24VDC input	--	--	9	VDC
	48VDC input	--	--	18	
Input under-voltage protection	24VDC input	5.5	6.5		VDC
	48VDC input	12	15.5		
Input Filter		PI Filter			
Hot Plug		Unavailable			
Start-up Time	Standard input with Constant Resistance load	10ms			
Ctrl *	Module on	Ctrl pin open or pulled high (3.5~12VDC)			
	Module off	Ctrl pin pull low to GND (0~1.2VDC)			

*The Ctrl pin voltage is referenced to input GND.



OUTPUT SPECIFICATIONS

Item	Operating Conditions	+Vo1 / -Vo2			
		Min	Typ	Max	Unit
Output Voltage Accuracy		--	±1.0/2.0	±2.0/3.0	%
Linear Regulation	Input voltage variation from low to high at full load	--	±0.2/1.5	±0.5/2.0	%
Load Regulation	10~100% Load	--	±0.5/4.0	±1.0/5.0	%
Ripple & Noise	Pure resistance load, 20MHz bandwidth peak-to-peak value	--	50	80	mVp-p
Start Delay time		--	1	--	ms
Output Over Current Protection	Full Voltage input range	110% Io	150% Io	200% Io	
Output Over Voltage Protection	Full Voltage input range	110% Vo		160% Vo	
Output Short Circuit Protection	Full Voltage input range	Continuous, self-recovery			
Transient Recovery Time	25% load step change	--	0.3	0.5	ms
Transient Response Deviation		--	±3.0/3.0	±5.0/5.0	%
Output Voltage Adjustment	Full Voltage input range	NA	NA	NA	

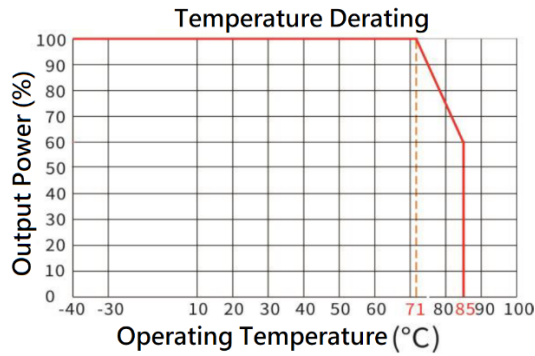
GENERAL SPECIFICATIONS

Item	Test Condition	Min	Typ	Max	Unit
Insulation Voltage	Input-output, test time 1minute, leakage current less than 1mA	1500	--	--	VDC
Insulation Resistance	Input-output, insulation voltage 500VDC	1000	--	--	MΩ
Isolation Capacitor	Input-output, 100KHz/0.1V	--	1000	--	pF
Operating Temperature	Refer to Fig1. Temperature Derating	-40	--	+85	°C
Storage Temperature		-40	--	+125	°C
Max Operation Case Temperature				100	°C
Storage Humidity	No Condensation	5	--	95	%RH
Pin Soldering Temperature Resistance	Solder joint distance from housing 1.5mm, 10s	--	--	+300	°C
Switching Frequency	Full load, nominal voltage input	--	250	--	KHz
Vibrations	10-55Hz, 10G, 30Min along X,Y & Z				
Housing Material	Aluminum shell				
MTBF	MIL-HDBK-217F@25°C		2x10 ⁵		Hrs



TYPICAL CHARACTERISTIC CURVES

Fig 1.



DESIGN REFERENCE

Typical Application

Fig 2. Single Output

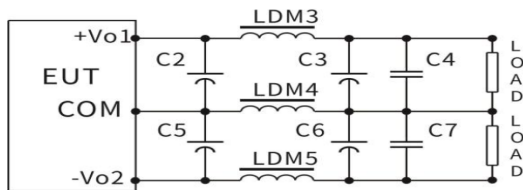


Fig 3. Dual Output

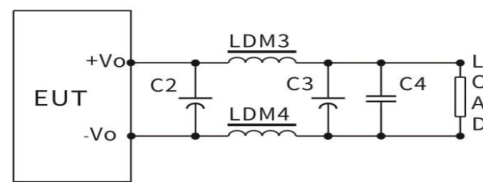


Table1. Recommend Input and output Capacitor Values

Item	3.3VDC	±5VDC	±9/12VDC	±15VDC	±24VDC
LDM3 Inductor	0.47uH	1uH	2.2uH	2.2uH	4.7uH
LDM4 Inductor	0.47uH	1uH	2.2uH	2.2uH	4.7uH
LDM5 Inductor		1uH	2.2uH	2.2uH	4.7uH
C2, C3 Electrolytic Cap	220uF	220uF	100uF	100uF	68uF
C5,C6 Electrolytic Cap	220uF	220uF	100uF	100uF	68uF
C4,C7 Electrolytic Cap	1uF/50V				

EMC

Compliance Circuit

Fig4.

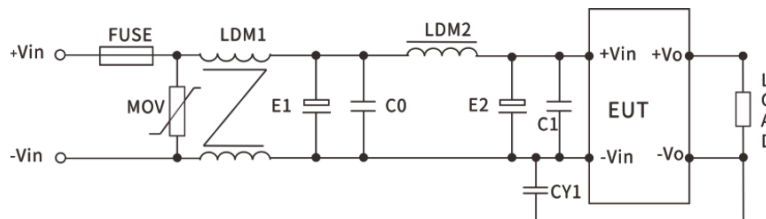


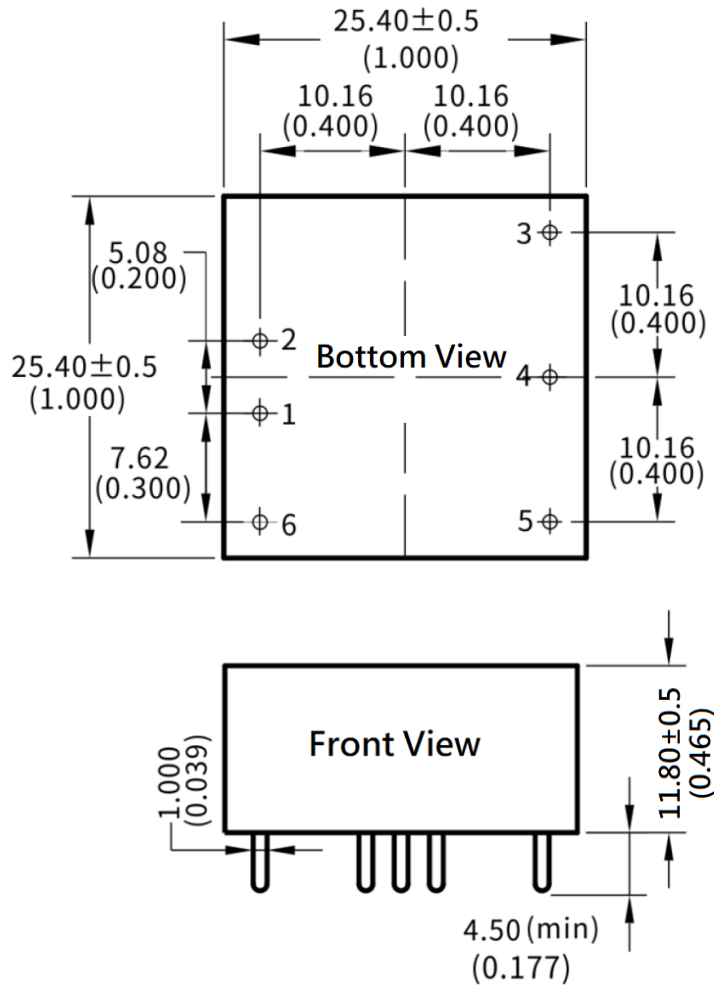
Table 2. Typical components Parameter Description

Components	24V input	48V Input
Fuse	Choose according to actual input current	
MOV Varistor	14D560K	14D101K
LDM1 inductor	10mH	15mH
E1,E2 Electrolytic Cap	100uF/50V	100uF/50V
C0, C1 Ceramic Cap	1uF/50V	1uF/50V
LDM2 inductor	10uF	10uF
CY1 Safety Cap Y2	1nF/250Vac	



PACKAGE INFORMATION

Package Code: YMD Dimension: 25.4x25.4x11.0 mm (1.000x1.000x0.433 inch)



Note: Grid 2.54 * 2.54mm

Unit: mm(inch)

Pin section tolerances: ±0.10 (±0.004)

General tolerances: ±0.25 (±0.010)

Pin-Out		
Pin #	Single	Dual
1	-Vin	-Vin
2	+Vin	+Vin
3	+Vo	+Vo1
4	NC	COM
5	GND	-Vo2
6	CTRL	CTRL