

Product Specification

Product model	URBxxxYMD-10W
Summary	DC24V/48V input, Output 10W, Ultra wide voltage input, isolation, voltage stabilization, positive and negative single output, YMD package
Product features	1) Ultra wide input voltage range (4:1) 2) Wide operating temperature range : -40°C to +85°C 3) No load power consumption as low as 0.1W 4) Input undervoltage protection, output short circuit, overcurrent, overvoltage protection

1. SELECTION GUIDE

Product model	Input Voltage Standard value(range)	Output Voltage	Output Current (mA) (Max./Min.)	Efficiency % (Min./Typ.)	Maximum capacitive load (μF)
URB2403YMD-10WR3	24VDC (9-36)	3.3VDC	2500/0	75/77	1800
URB2405YMD-10WR3	24VDC (9-36)	5VDC	2000/0	80/83	1000
URB2409YMD-10WR3	24VDC (9-36)	9VDC	1111/0	82/84	680
URB2412YMD-10WR3	24VDC (9-36)	12VDC	833/0	83/85	470
URB2415YMD-10WR3	24VDC (9-36)	15VDC	667/0	83/86	220
URB2424YMD-10WR3	24VDC (9-36)	24VDC	416/0	83/86	100

Product model	Input Voltage Standard value(range)	Output Voltage	Output Current (mA) (Max./Min.)	Efficiency % (Min./Typ.)	Maximum capacitive load (μF)
URB4803YMD-10WR3	48VDC (18-75)	3.3VDC	2500/0	75/77	1800
URB4805YMD-10WR3	48VDC (18-75)	5VDC	2000/0	80/83	1000
URB4812YMD-10WR3	48VDC (18-75)	12VDC	1111/0	82/84	680
URB4815YMD-10WR3	48VDC (18-75)	15VDC	833/0	83/85	470
URB4824YMD-10WR3	48VDC (18-75)	24VDC	667/0	83/86	220

2. INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units	
Input current (Rated Load)	24VDC nominal input series, Nominal input voltage	3.3V output	--	430	440	mA
		Other	--	503	530	mA
	48VDC nominal input series, Nominal input voltage	3.3V output	--	190	220	mA
		Other	--	249	260	mA
Input current (No-load)	24VDC nominal input series, Nominal input voltage	3.3V output	--	5	12	mA
		Other	--	5	12	mA
	48VDC nominal input series, Nominal input voltage	3.3V output	--	4	8	mA
		Other	--	4	8	mA
Reflected ripple current	Nominal voltage input	--	20	--	mA	
Input impulse voltage	24VDC nominal input series	-0.7	--	50	VDC	
	48VDC nominal input series	-0.7	--	100	VDC	
Starting voltage	24VDC nominal input series	--	--	9	VDC	
	48VDC nominal input series	--	--	18	VDC	
Under voltage protect	24VDC nominal input series	5.5	6.5	--	VDC	
	48VDC nominal input series	12	15.5	--	VDC	
Input filter	Pi type					

Remarks: This product does not support hot plug.

3.OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Output voltage accuracy	0% - 100% load	--	+/-1	+/-3	%
Linear regulation rate	100% load, input voltage from low voltage to high voltage	--	+/-0.2	+/-0.5	%
Load regulation rate	5% to 100% load	--	+/-0.5	+/-1	%
Ripple & Noise	20MHz bandwidth	--	50	86	mVp-p
Temperature drift coefficient	100% load	--	+/-0.03	--	%/°C
Overvoltage protection	Nominal voltage input	110	--	160	%Vo
Overcurrent protection	Nominal voltage input	110	140	190	%Io
Short circuit protection	Sustainable, Self-healing				

Remarks:

- 1) For product models with output voltages of ± 5 VDC and ± 9 VDC, the maximum output voltage accuracy is $\pm 5\%$ under 0% -5% load conditions;
- 2) When tested under 0% -100% load working conditions, the indicator of load adjustment rate is $\pm 5\%$;
- 3) 0% -5% load ripple&noise less than or equal to 5% Vo.
- 4) The testing method for ripple and noise is the parallel line testing method.

4.GENERAL CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation voltage	Input-output, Test time 1 minute, Leakage current less than 1 mA	1500	--	--	VDC
Insulation resistance	Input output, Insulation voltage 500VDC	1000	--	--	MΩ
Isolation capacitance	Input output, 100KHz/0.1V	--	1000	--	pF
Working temperature	Temperature ≥ 85 °C for derating	-40	--	85	°C
Storage temperature		-55	--	125	°C
Storage humidity	Non condensing	--	--	95	%RH
Soldering temperature resistance of pins	The distance from the welding spot to the shell is 1.5mm, 10 seconds	--	--	300	°C
Switching frequency	Full load, Nominal input voltage	--	300	--	kHz
Mean time between failures	MIL-HDBK-217F@25°C	1000	--	--	kHours

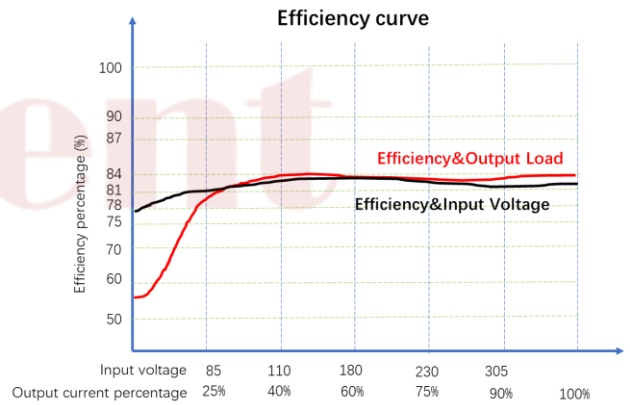
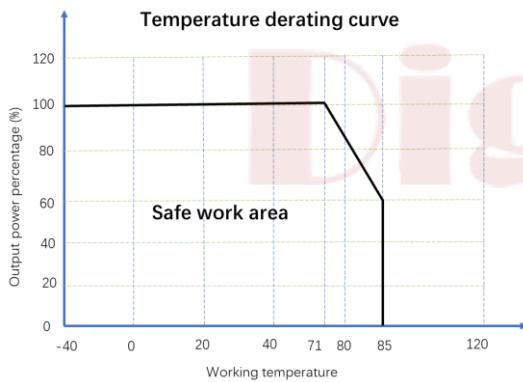
5.PHYSICAL CHARACTERISTICS

Parameter	Content
Housing material	Aluminium alloy
Overall dimensions	25.40 × 25.40 × 11.00 (mm)
Weight	2.4g(Typ.)
Cooling mode	Natural air cooling

6.EMC CHARACTERISTICS

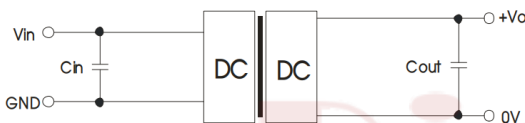
Parameter	Category	Content
EMI	Conductive disturbance	CISPR32/EN55032 CLASS A (The recommended circuit is shown in Figure 2)
	Radiation disturbance	CISPR32/EN55032 CLASS A (The recommended circuit is shown in Figure 2)
EMS	Electrostatic Discharge	IEC/EN61000-4-2 Contact ± 4 kV perf. CriteriaB
	Radiated Immunity	IEC/EN61000-4-3 10V/m perf. CriteriaA
	Pulse group immunity	IEC/EN61000-4-4 ± 2 kV perf. CriteriaB
	Surge immunity	IEC/EN61000-4-5 line to line ± 2 kV perf. CriteriaB
	Conducted disturbance immunity	IEC/EN61000-4-6 3 Vr.m.s perf. CriteriaA
	Voltage dips, dips, and short-term interruptions immunity	IEC/EN61000-4-29 0%, 70% perf. CriteriaB

7. PRODUCT CHARACTERISTICS CURVE

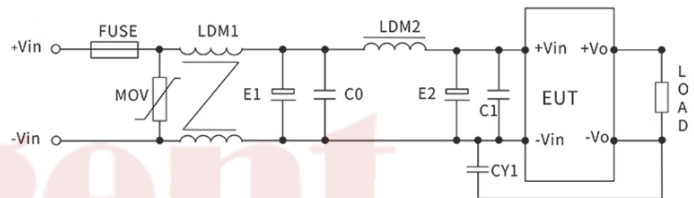


8. CIRCUIT DESIGN AND APPLICATION

Typical application circuit



EMC Typical Recommended Circuits



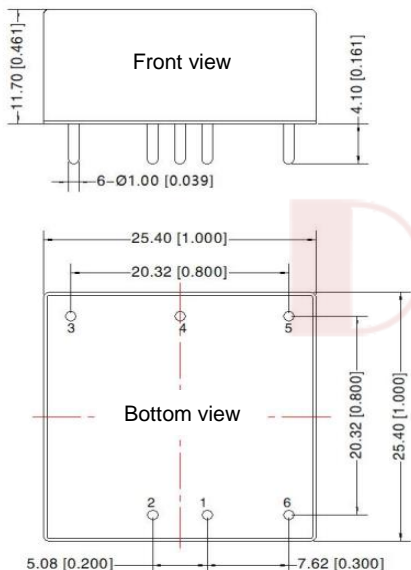
Recommended Capacitive Load Values

Vin(VDC)	Cin(μF)	Vo(VDC)	Cout(μF)
Nominal voltage	100	Nominal voltage	10

Recommended Circuit Parameter Values

Component	Value	Component	Value
FUSE	As required	C3	4.7μF/50V
MOV	20D470K	C4	Refer to Cout parameter
C0	680μF/50V	LCM	4.7mH
C1	1μF/50V	CY1	1nF/2kV
C2	330μF/50V	CY2	1nF/2kV

9. OVERALL DIMENSIONS & PIN FUNCTIONS



Note:
 Dimensions in mm [inch]
 Terminal diameter tolerance: +/-0.10 [+/-0.004]
 Undeclared tolerance: +/-0.50 [+/-0.020]

Pin Function Table

Pin	Single way	Double way
1	GND	GND
2	Vin	Vin
3	+Vo	+Vo
4	No Pin	0V
5	0V	-Vo
6	Ctrl	Ctrl

10. REMARKS/DESCRIPTION

- 1) The input voltage shall not exceed the specified range value, otherwise permanent and unrecoverable damage may be caused;
- 2) Unless otherwise specified, the parameters in this manual are measured at 25 °C, 40%~75% humidity, input nominal voltage and output pure resistance mode under full load;
- 3) All index test methods are based on the company's enterprise standards.
- 4) The copyright and the final interpretation right of the product belong to Dpsps.