

MORNSUN®

URA_D-10W & URB_D-10W Series 10W, 4:1 WIDE INPUT ISOLATED & REGULATED DUAL/SINGLE OUTPUT DC-DC CONVERTER



RoHS

FEATURES

- Operating Temperature: -40°C to +85°C
- I/O-Isolation 1.5KVDC
- Metal shielding Package
- Industry Standard Pin out
- MTBF>1,000,000 hours
- Good high temperature properties, can meet the industrial products technical requirements.

APPLICATIONS

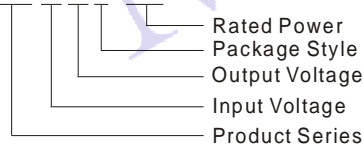
The URA_D-10W/ URB_D-10W Series are specially designed for applications where a wide range input voltage power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

- 1) Where the voltage of the input power supply is wide range (voltage range $\leq 4:1$);
- 2) Where isolation is necessary between input and output (Isolation voltage $\leq 1500\text{VDC}$);
- 3) Where the regulation of the output voltage and the output ripple noise are demanded.

MODEL SELECTION

URB2405D-10W



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PRODUCT PROGRAM

Part Number	Input			Output		Efficiency (% Typ)	Capacitor Load max**
	Voltage (VDC)			Voltage (VDC)	Current (mA) Max		
	Nominal	Range	Max*				
URA2405D-10W	24	9-36	40	±5	±1000	82	±680
URA2412D-10W				±12	±416	80	±330
URA2415D-10W				±15	±333	80	±110
URB2405D-10W				5	2000	80	2000
URB2412D-10W				42	830	84	690
URB2415D-10W				15	670	81	470
URA4805D-10W				48	18-75	80	±5
URA4812D-10W	±12	±416	78				±330
URA4815D-10W	±15	±333	81				±110
URB4805D-10W	5	2000	81				2000
URB4812D-10W	12	830	84				690
URB4815D-10W	15	670	84				470

Models listed with strike-through text have been officially discontinued.

*Input voltage can't exceed this value, or will cause the permanent damage.

**Test by nominal Vin and constant resistive load.

COMMON SPECIFICATION

Item	Test Conditions	Min	Typ	Max	Units
Storage humidity		--	--	95	%
Operating temperature		-40	--	85	°C
Storage temperature		-55	--	125	
Maximum Case Temp.	On working temperature	--	75	--	
Lead Temperature	1.5mm from case for 10 seconds	--	--	300	
Isolation voltage	Tested for 1 minute and 1mA max	1500	--	--	VDC
Isolation resistance	Test at 500VDC	1000	--	--	MΩ
Isolation capacitance	100kHz/0.1V	--	1000	--	PF
No-load power consumption		--	500	--	mW
Cooling		Free Air Convection			
Short circuit protection		Continuous, automatic recovery			
Case Material		Aluminium alloy			
MTBF	MIL-HDBK-217F	1000	--	--	K hours
Weight		--	19	--	g

OUTPUT SPECIFICATIONS

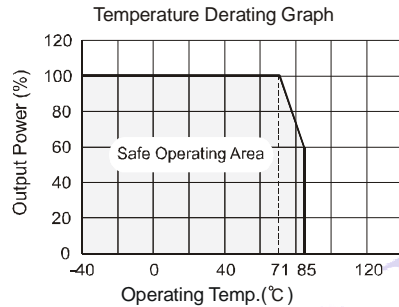
Item	Test Conditions	Min	Typ	Max	Units
Output power	See product program	1	--	10	W
Positive voltage accuracy	Refer to recommended circuit	--	±1	±3	%
Negative voltage accuracy	Refer to recommended circuit	--	±3	±5	
Load regulation	From 10% To 100% load	--	±0.5	±1	
Line regulation(at full load)	Input voltage from low to high	--	±0.2	±0.5	
Temperature Drift(Vout)	Refer to recommended circuit	--	0.02	--	%/°C
Ripple*	20MHz bandwidth	--	30	50	mVp-p
Noise*		--	75	150	
Switching Frequency	100% load, nominal Input voltage	--	300	--	KHz

*Test ripple and noise by "parallel cable" method. See detailed operation instructions at Testing of Power Converter section, application notes.

Note:

- All specifications measured at $T_A=25^{\circ}\text{C}$, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
- Dual output models unbalanced load: ±5%.

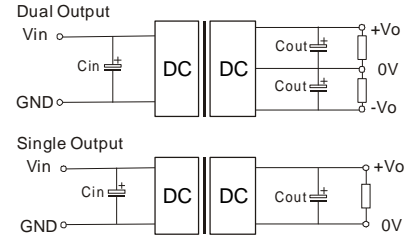
TYPICAL CHARACTERISTICS



APPLICATION NOTE

Recommended Circuit

All the URA_D-10W & URB_D-10W Series have been tested according to the following recommended testing circuit before leaving factory. (see Figure 1).



(Figure 1)

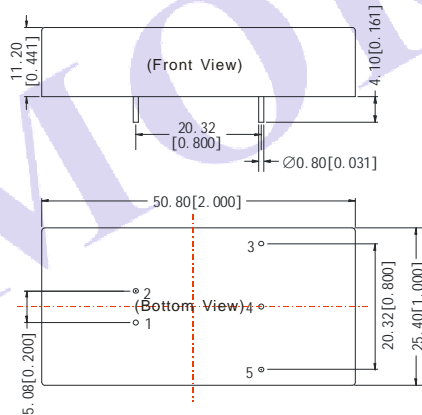
If you want to further decrease the output ripple, you can increase capacitance properly or choose capacitors with low ESR. However, the capacitance should not be too high. (Table 1).

External Capacitor Table (Table 1)

Output voltage	Capacitance		Cin(μF)
	Cout (μF)	Cin(μF)	
Single output	5V	220	100
	12V, 15V	100	
Dual output	±5V	±100	100
	±12V, ±15V	±47	

OUTLINE DIMENSIONS & FOOTPRINT DETAILS

MECHANICAL DIMENSIONS

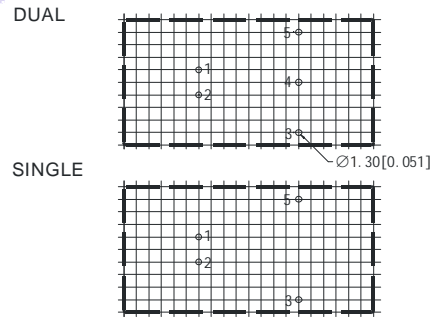


FOOTPRINT DETAILS		
Pin	Single	Dual
1	GND	GND
2	Vin	Vin
3	+Vo	+Vo
4	No Pin	0V
5	0V	-Vo

Note:

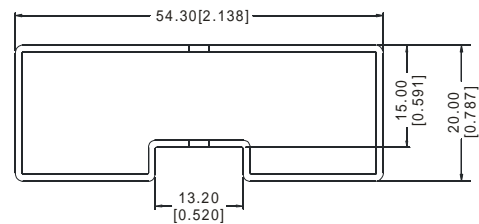
Unit:mm[inch]
Pin diameter tolerances:±0.10mm[±0.004inch]
General tolerances:±0.25mm[±0.010inch]

RECOMMENDED FOOTPRINT



Note: grid2.54*2.54mm.

TUBE OUTLINE DIMENSIONS



Note:

Unit:mm[inch]
General tolerances: ±0.50mm[±0.020inch]
L=220mm[8.661inch] pcs/tube: 7pcs
Inner packaging dimensions: 255*170*80mm
Outer packaging dimensions(with six inner packaging boxes): 375*280*270mm