



## URA\_D-5W & URB\_D-5W Series

### 5W, 4:1 WIDE INPUT ISOLATED & REGULATED DUAL/SINGLE OUTPUT DC-DC CONVERTER

multi-country patent protection **RoHS**

#### FEATURES

Operating Temperature: -40°C to +85°C  
 1.5KVDC Input/Output Isolation  
 Metal Case Package  
 No Heat sink Required  
 Industry Standard Pinout  
 MTBF>1,000,000 hours  
 RoHS Compliance

#### APPLICATIONS

The URA\_D-5W & URB\_D-5W 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:

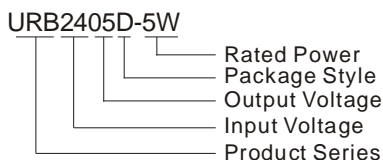
- 1) Where the voltage of the input power supply is wide range (voltage range  $\leq 4:1$ );
- 2) Where isolation is necessary between input and output (Isolation voltage  $\leq 1500\text{VDC}$ );
- 3) Where the regulation of the output voltage and the output ripple noise are demanded.

#### PRODUCT PROGRAM

Part Number	Input			Output			Efficiency (% Typ)			
	Voltage (VDC)			Voltage (VDC)	Current (mA)					
	Nominal	Range	Max**		Max	Min				
URA2405D-5W *	24	9-36	40	±5	500	50	75			
URA2412D-5W				±12	200	20	77			
URA2415D-5W				±15	166	16	79			
URA2424D-5W *				±24	104	10	81			
URB2405D-5W				5	1000	100	77			
URB2412D-5W				12	420	42	80			
URB2415D-5W *				15	333	33	81			
URB2424D-5W *				24	200	20	73			
URA4805D-5W				48	18-75	80	±5	500	50	75
URA4812D-5W *							±12	200	20	78
URA4815D-5W *	±15	166	16				82			
URA4824D-5W *	±24	104	10				85			
URB4805D-5W	5	1000	100				79			
URB4812D-5W	12	420	42				82			
URB4815D-5W *	15	333	33				85			
URB4824D-5W *	24	200	20				86			

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

#### MODEL SELECTION



#### COMMON SPECIFICATION

Item	Test Conditions	Min	Typ	Max	Units
Storage Humidity Range				95	%
Operating temperature		-40		85	°C
Storage Temperature Range		-55		125	
Lead Temperature	1.5mm from case for 10 seconds			300	
Temp. Rise at Full Load			50		
Isolation voltage	Tested for 1 minute and 1 mA max	1500			VDC
Isolation resistance	Test at 500VDC	1000			MΩ
Isolation capacitance	Input/Output		100		pF
No-load Power Consumption			500		mW
Cooling		Free Air Convection			
Short Circuit Protection		Continuous, automatic recovery			
Case Material		Aluminium alloy			
MTBF		1000			K hours
Weight			14		g

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## OUTPUT SPECIFICATIONS

Item	Test Conditions	Min	Typ	Max	Units
Output Power	See above products program			5	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**	20MHz bandwidth		75	150	
Switching Frequency	100% load, nominal Input voltage		300		KHz

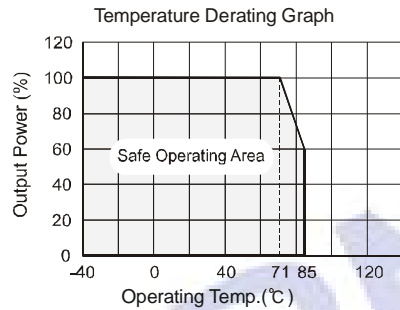
\*Dual output models unbalanced load: ±5%.

\*\*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.
- See below recommended circuits for more details.

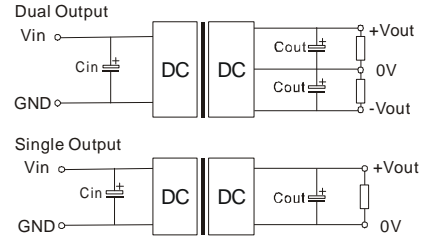
## TYPICAL CHARACTERISTICS



## APPLICATION NOTE

### Recommended Circuit

All the URA\_D-5W & URB\_D-5W Series have been tested according to the following recommended testing circuit before leaving factory. This series should be tested under load. Never be tested under no load (see Figure 1).



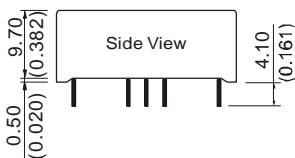
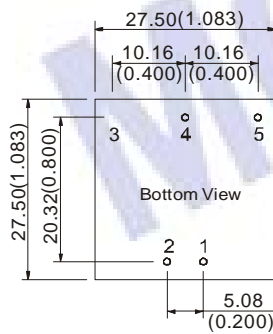
(Figure 1)

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)

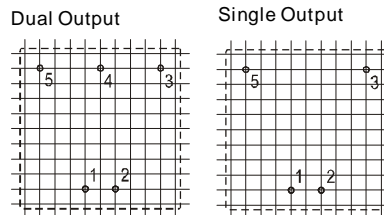
Vin (VDC)	Cin (uF)	Vout (VDC)	Cout
12	100	5	100uF/ 1A
24	100	12	
48	100	15	
--	--	24	

## OUTLINE DIMENSIONS & FOOTPRINT DETAILS



First Angle Projection

RECOMMENDED FOOTPRINT  
Top view, grid: 2.54mm (0.1inch),  
diameter: 1.00mm (0.039inch)



### 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: 0.80mm (0.031inch)

Pin diameter tolerances: ±0.05mm (±0.002inch)

General tolerances: ±0.25mm (±0.010inch)