1W isolated DC-DC converter
Fixed input voltage, unregulated dual/single output

Patent Protection RoHS

Continuous Short Circuit Protection

3 years Warranty

FEATURES

- Continuous short-circuit protection
- Operating ambient temperature range:-40℃ to +105℃
- High efficiency up to 81%
- DIP package
- I/O isolation test voltage 1.5kVDC
- Low ripple & noise
- Industry standard pin-out

A_XD-1WR3 & B_XD-1WR3 series are specially designed for applications where an (two) isolated voltage is required in a distributed power supply system. They are suitable for:
1.Where the voltage of the input power supply is stable (voltage variation: ±10%Vin);
2.Where isolation is necessary between input and output (isolation voltage ≤1500VDC);
3.Where do not has high requirement of the ripple & noise of the output ;
4.Typical application: pre-interference isolation, ground interference elimination, pure digital circuit, voltage isolation conversion, general low frequency analog circuit, relay drive circuit, etc.

Selection Guide

Part No.	Input Voltage (VDC)	Output		Full Load Efficiency (%) Min./Typ.	Capacitive Load(μF) Max.
	Nominal (Range)	Voltage (VDC)	Current(mA) Max./Min.		
B0505XD-1WR3	5 (4.5-5.5)	5	200/20	77/81	2400
A0515XD-1WR3		±15	±34/±4	77/81	220

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Current (full load / no-load)	5VDC input	--	247/10	260/25	mA
Reflected Ripple Current*		--	15	--	mA
Surge Voltage (1sec. max.)	5VDC input	-0.7	--	9	VDC
Input Filter		Capacitance Filter			
Hot Plug		Unavailable			
Note: * Refer to DC-DC Converter Application Notes for detailed description of reflected ripple current test method.					

Output Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Voltage Accuracy			See output regulation curve (Fig. 1)			
Linear Regulation	Input voltage change: ±1%		--	--	±1.2	--
Load Regulation	10%-100% load	5VDC Output	--	--	15	%
		15VDC Output	--	--	10	
Ripple & Noise*	20MHz bandwidth		--	30	75	mVp-p
Temperature Coefficient	Full load		--	±0.02	--	%/℃
Short-circuit Protection			Continuous, self-recovery			
Note:* The "parallel cable" method is used for Ripple and Noise test, please refer to DC-DC Converter Application Notes for specific information.						

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Isolation	Input-output electric strength test for 1 minute with a leakage current of 1mA max.	1500	--	--	VDC
Insulation Resistance	Input-output resistance at 500VDC	1000	--	--	MΩ
Isolation Capacitance	Input-output capacitance at 100kHz/0.1V	--	20	--	pF
Operating Temperature	Derating when operating temperature up to 85℃, (see Fig. 2)	-40	--	105	℃
Storage Temperature		-55	--	125	
Case Temperature Rise	Ta=25℃	--	25	--	
Pin Soldering Resistance Temperature	Soldering spot is 1.5mm away from case for 10 seconds	--	--	300	
Storage Humidity	Non-condensing	5	--	95	%RH
Switching Frequency	Full load, nominal input voltage	--	300	--	kHz
MTBF	MIL-HDBK-217F@25℃	3500	--	--	k hours

Mechanical Specifications

Case Material	Black plastic; flame-retardant and heat-resistant (UL94-V0)
Dimensions	20.00 x 10.00 x 7.00 mm
Weight	2.4g(Typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032 CLASS B (see Fig. 4 for recommended circuit)
	RE	CISPR32/EN55032 CLASS B (see Fig. 4 for recommended circuit)
Immunity	ESD	IEC/EN61000-4-2 Air ±8kV , Contact ±6kV perf. Criteria B

Typical Characteristic Curves

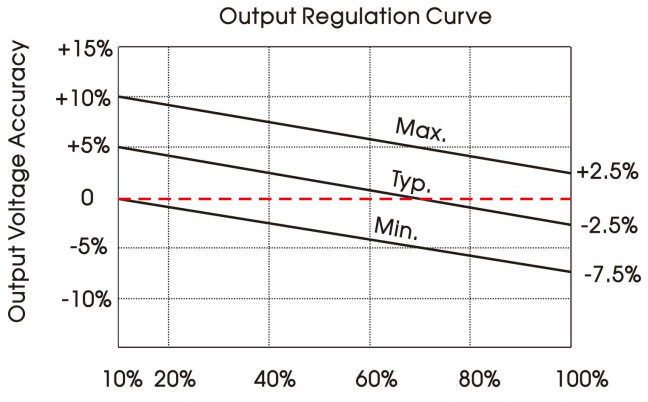


Fig. 1

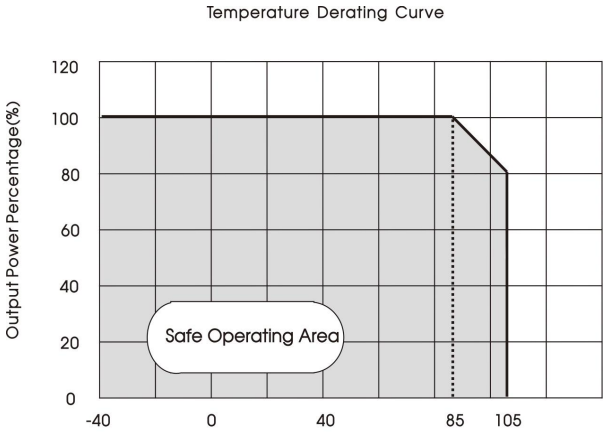


Fig. 2

Design Reference

1. Typical application

Input and/or output ripple can be further reduced, by connecting a filter capacitor from the input and/or output terminals to ground as shown in Fig.3.

Choosing suitable filter capacitor values is very important for a smooth operation of the modules, particularly to avoid start-up problems caused by capacitor values that are too high. For recommended input and output capacitor values refer to Table 1.

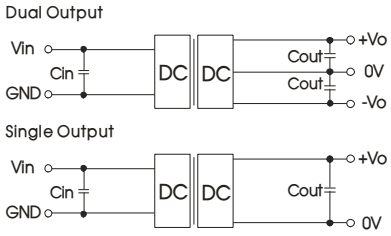


Fig. 3

Table 1: Recommended input and output capacitor values

Vin	Cin	Vo	Cout
5VDC	4.7μF/16V	5VDC	10μF/16V
--	--	±15VDC	1μF/25V

2. EMC solution-recommended circuit

Single Output

Dual Output

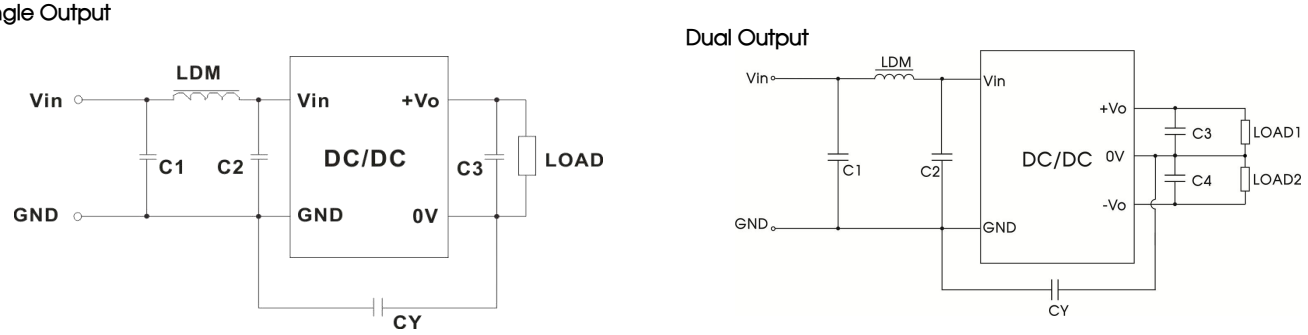
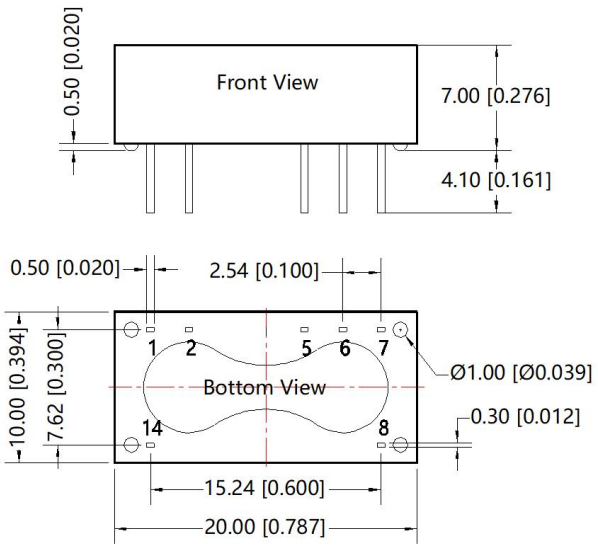


Fig. 4

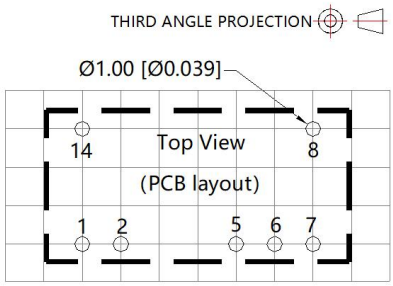
Emissions	C1/C2	4.7μF /25V
	CY	100pF /2kVDC VISHAY HGZ102MBP TDK CD45-E2GA102M-GKA
	C3/C4	Refer to the Cout in table 1
	LDM	6.8μH

3. For additional information please refer to DC-DC converter application notes on www.mornsun-power.com.

Dimensions and Recommended Layout



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



Note: Grid 2.54*2.54mm

Pin	Single	Dual
1	Vin	Vin
2	GND	GND
5	0V	0V
6	+Vo	+Vo
7	NC	-Vo
Others	NC	NC

NC: No connection

Notes:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Tube Packaging bag number: 58200009 ,
2. If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
3. The maximum capacitive load offered were tested at input voltage range and full load;
4. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, humidity<75%RH with nominal input voltage and rated output load;
5. All index testing methods in this datasheet are based on our company corporate standards;
6. We can provide product customization service, please contact our technicians directly for specific information;
7. Products are related to laws and regulations: see "Features" and "EMC";
8. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

MORNSUN Guangzhou Science & Technology Co., Ltd.
Address: No. 5, Kehui St. 1, Kehui development center,Science Ave., Guangzhou Science City,huangpu district, Guangzhou,P.R.China
Tel: 86-20-38601850 Fax: 86-20-38601272 E-mail: info@mornsun.cn www.mornsun-power.com