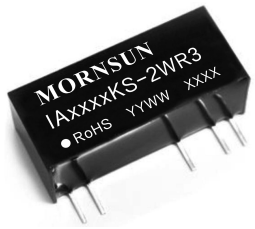
2W isolated DC-DC converter
Fixed input voltage, regulated dual output



Patent Protection RoHS

3 years Warranty

Continuous Short Circuit Protection

FEATURES

- Continuous short-circuit protection
- No-load input current as low as 10mA
- Operating ambient temperature range: -40℃ to +85℃
- High efficiency up to 76%
- I/O isolation test voltage 1.5k VDC
- Industry standard pin-out

IA_KS-2WR3 series is specially designed for distributed power supply systems where two isolated voltage is required. They are suitable for occasions of: pre-interference isolation, ground interference elimination, pure digital circuit, voltage isolation conversion, general low frequency analog circuit, relay drive circuit, etc.

Selection Guide

Certification	Part No.	Input Voltage (VDC)	Output		Full Load Efficiency (%) Min./Typ.	Capacitive Load (μF)* Max.
		Nominal (Range)	Voltage (VDC)	Current (mA) Max./Min.		
--	IA0512KS-2WR3	5 (4.75-5.25)	±12	±84/±8	69/73	330
	IA0515KS-2WR3		±15	±67/±7	70/74	100
	IA1212KS-2WR3	12 (11.4-12.6)	±12	±84/±8	72/76	330
	IA2412KS-2WR3	24 (22.8-25.2)	±12	±84/±8	72/76	330
	IA2415KS-2WR3		±15	±67/±7	71/75	100

Note: *The specified maximum capacitive load for positive and negative output is identical.

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Current (full load / no-load)	5VDC input	±12VDC output	--	552/10	586/--	mA
		±15VDC output	--	544/20	576/--	
	12VDC input	±12VDC output	--	222/10	234/--	
	24VDC input	±12VDC output	--	110/10	118/--	
		±15VDC output				
Reflected Ripple Current*			--	15	--	
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			--	--	±3	%
Linear Regulation	Input voltage change: ±1%		--	--	±0.25	
Load Regulation	10%-100% load		--	--	±2	
Ripple & Noise*	20MHz bandwidth	5VDC input	--	50	100	mVp-p
		Other input	--	75	180	
Temperature Coefficient	100% 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≥71℃ (see Fig.1)	-40	--	85	℃
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
Vibration		10-150Hz, 5G, 0.75mm. along X, Y and Z			
Switching Frequency	100% load, nominal input voltage	--	250	--	kHz
MTBF	MIL-HDBK-217F@25℃	3500	--	--	k hours

Mechanical Specifications

Case Material	Black plastic; flame-retardant and heat-resistant (UL94V-0)
Dimensions	27.50 x 9.50 x 12.00mm
Weight	4.9g(Typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

Emissions	CE	CISPR32/EN55032	CLASS B
	RE	CISPR32/EN55032	CLASS B
Immunity	ESD	IEC/EN61000-4-2	Air ±8kV, Contact ±6kV perf. Criteria B
Note: Refer to Fig. 3 for recommended circuit test.			

Typical Characteristic Curves

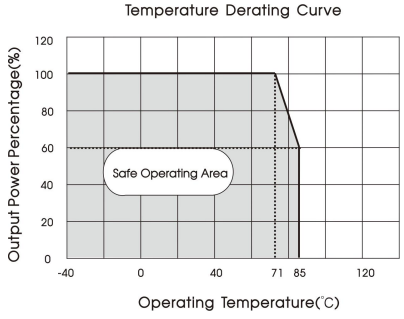
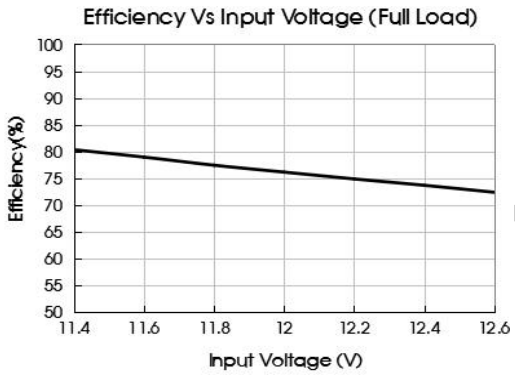
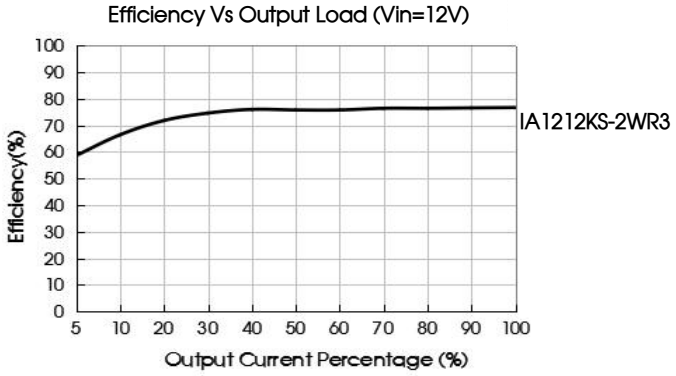


Fig. 1





Design Reference

1. Typical application circuit

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. 2.

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. 2

Table 1: Recommended input and output capacitor values

Vin	Cin	Vo	Cout
5VDC	2.2uF/16V	±12VDC	4.7μF/16V
--		±15VDC	4.7μF/25V
12VDC	4.7uF/25V	±12VDC	4.7μF/16V
24VDC	4.7uF/50V	±12VDC	
--		±15VDC	4.7μF/25V

2. EMC compliance circuit

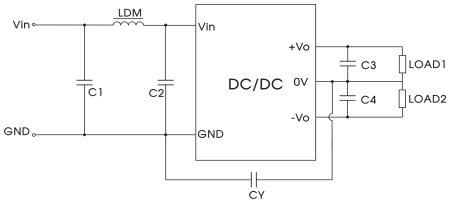


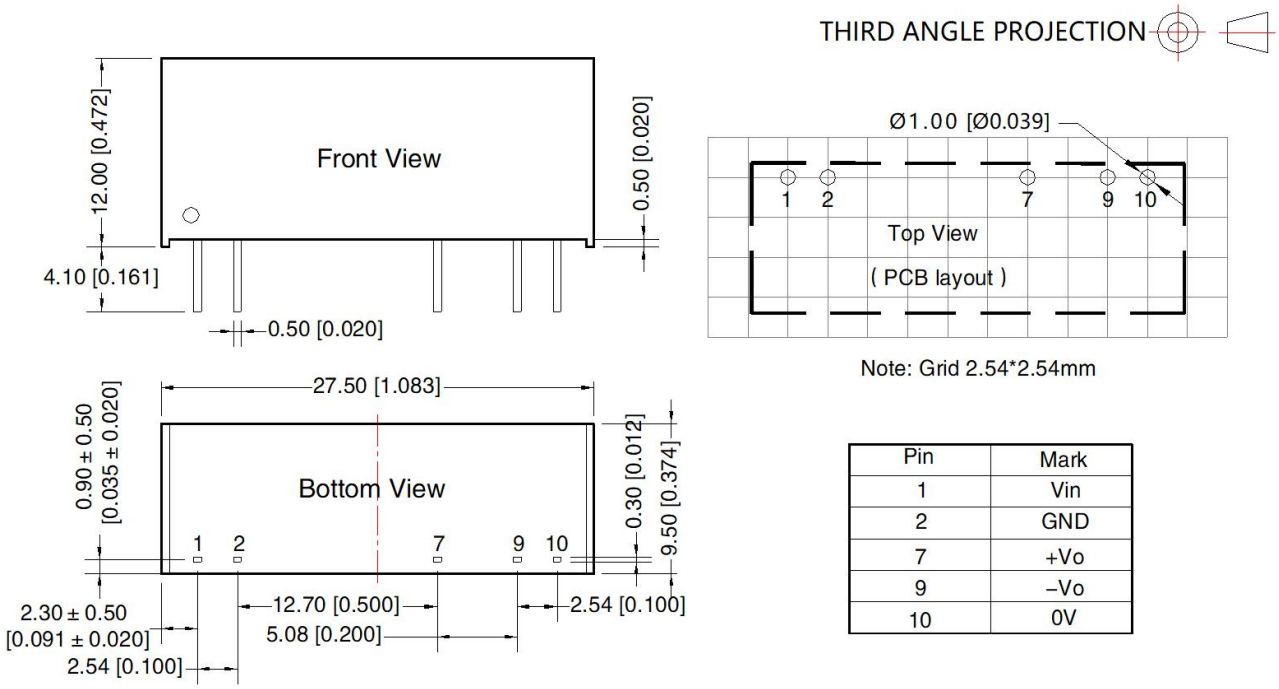
Fig. 3

Table 2: Recommended EMC filter values

Emissions	C1/C2	4.7μF /50V	
	CY	IA05_KS-2WR3	270pF/3kV
		Others	1nF/2kV
	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



Pin	Mark
1	Vin
2	GND
7	+Vo
9	–Vo
10	0V

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

Notes:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58200015;
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.

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