

FEATURES

1. Better price and higher performance
2. Support small customization on typical parameter
3. Flexible and low cost as discrete component
4. High efficiency up to 86.5%
5. The leakage current < 2μA
6. Isolation Capacitance as low as 4pF
7. Creepage & Clearance Distance > 5mm
8. Reinforced insulation, Isolation voltage: 5000VAC or 6000VDC
9. Operating ambient temperature range: -50°C to +105°C
7. Full load start up at -50°C
7. Continuous short-circuit protection
8. Meet IEC60601 standard
9. Support Hot Plug
10. Load regulation rate lower to 7%



**3 years
Warranty**

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.		
H0505S-1WR3K	(4.5-5.5)	5	200/20	84.5/86.5	2200

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input Current (full load/no-load)	5V input	-	250/14	282/--	mA
Surge Voltage (1sec. max.)	5V input	-0.7	-	9	VDC
Reflected Ripple Current*		-	200	-	mA
Input Filter		Capacitance filter			
Hot Plug In		Support			

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
Output Voltage Accuracy		See output regulation curve(Fig. 1)			
Linear Regulation	Input voltage change: ±1%	-	-	1.2	%
Load Regulation	10%-100% load	-	-	7	%
Ripple & Noise*	20MHz bandwidth	-	60	120	mVp-p
Temperature Coefficient	100% full load	-	±0.02	-	%/°C
Output 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, with the test time of 1 minute, the leakage current < 1mA	5000	-	-	VAC
		6000	-	-	VDC
Patient Leakage Current*	250VAC, 50/60Hz	-	-	2	μA
Insulation Resistance	Input-output, isolation voltage 500VDC	1000	-	-	MΩ
Isolation Capacitance	Input-output, 100kHz/0.1V	-	4	-	pF
Operating Temperature	Derating when operating temperature ≥ 85°C (see Fig. 2)	-50	-	105	°C
Storage Temperature		-55	-	125	
Case Temperature Rise	Ta=25°C	-	25	-	
Pin Soldering Resistance Temperature	Welding spot is 1.5mm away from the casing, 10 seconds	-	-	300	
Storage Humidity	Non-condensing	5	-	95	%RH
Switching Frequency	5V input, 100% load	-	300	-	kHz
MTBF	MIL-HDBK-217F@25°C	20000	-	-	k hours
Creepage & Clearance Distance		5	-	-	mm

Note: * Leakage current and reinforced insulation is based on 250 VAC, 50/60 Hz system input voltage.

Mechanical Specifications

Case Material	Black plastic; flame-retardant and heat-resistant (UL94V-0)
Dimensions	19.50 x 9.80 x 12.50 mm
Weight	4.0g (Typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

Emissions	CE	H0515S-1WR3M H0524S-1WR3M G0515S-1WR3M	CISPR32/EN55032 CLASS A (see Fig. 4 for recommended circuit) EN60601-1-2/CISPR 11 GROUP1 CLASS A (see Fig. 4 for recommended circuit)
		Other Part No.	CISPR32/EN55032 CLASS B (see Fig. 4 for recommended circuit) EN60601-1-2/CISPR 11 GROUP1 CLASS B (see Fig. 4 for recommended circuit)
	RE	H0515S-1WR3M H0524S-1WR3M G0515S-1WR3M	CISPR32/EN55032 CLASS A (see Fig. 4 for recommended circuit) EN60601-1-2/CISPR 11 GROUP1 CLASS A (see Fig. 4 for recommended circuit)
		Other Part No.	CISPR32/EN55032 CLASS B (see Fig. 4 for recommended circuit) EN60601-1-2/CISPR 11 GROUP1 CLASS B (see Fig. 4 for recommended circuit)
Immunity	ESD	EN60601-1-2 (IEC/EN61000-4-2)	Air ±15kV, Contact ±8kV perf. Criteria B

Typical Characteristic Curves

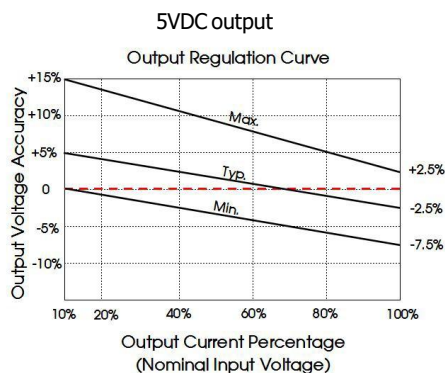


Fig. 1

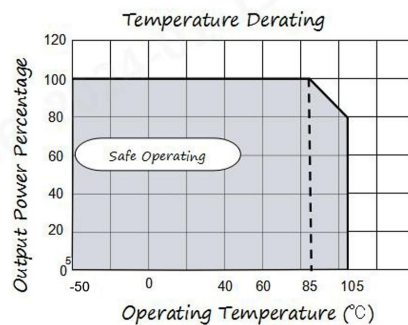


Fig. 2

Design Reference

1. Typical application

If it is required to further reduce input and output ripple, a filter capacitor can be connected to the input and output terminals, see Fig.3. Moreover, choosing suitable filter capacitor is very important, start-up problems may be caused by too large capacitance. To ensure the modules running well, the recommended capacitive load values as shown in Table 1.

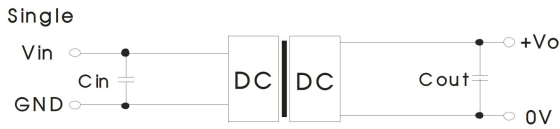


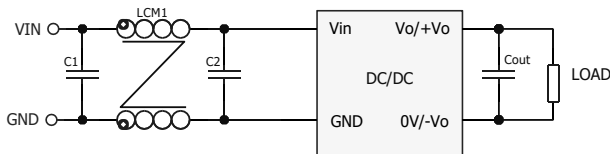
Fig. 3

Vin	Cin	Single Vout	Cout
5VDC	10 μ F/10V	5VDC	10 μ F/16V

2. EMC (CLASS B) compliance circuit

5V input

Table 1: Recommended input and output capacitor values



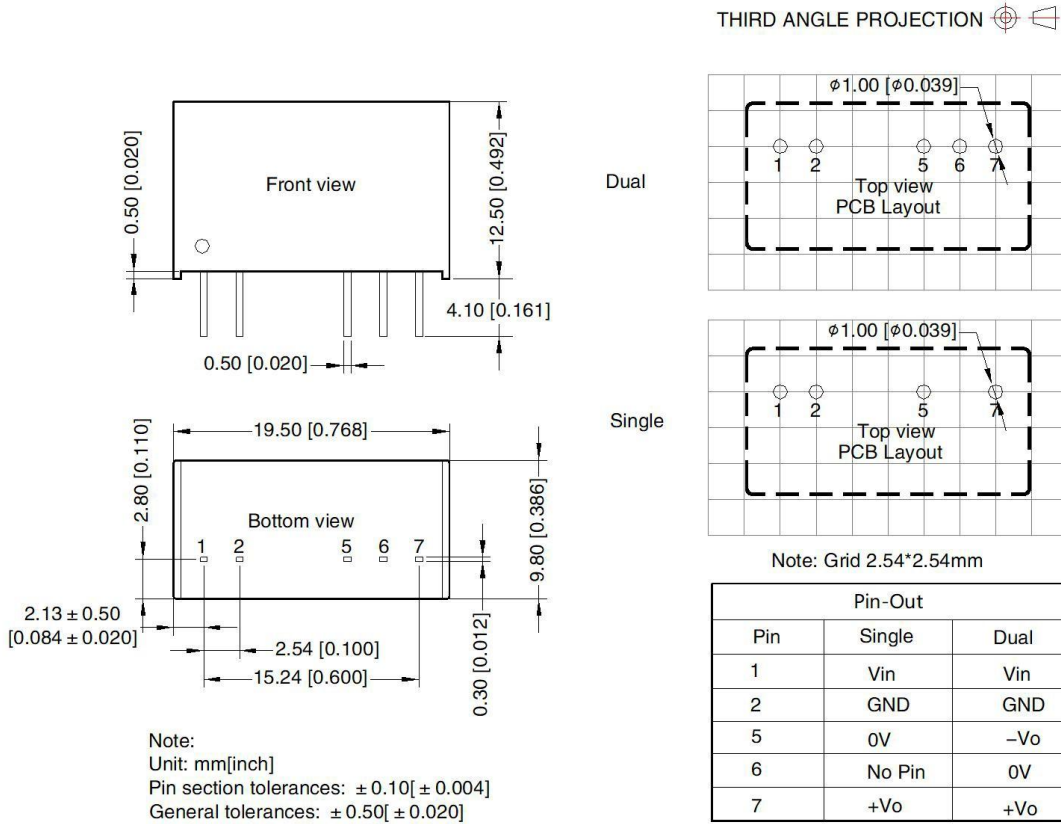
EMC recommended circuit value table (Table 2)

Series		H0505S-1WR3K
EMI	C1/C2	4.7 μ F /16V
	Cout	Refer to the Cout in table 1
	LCM1	22 μ H (Nickel zinc inductance)

3. Minimum Output Load Requirement

For a reliable and efficient operation of the converter, the minimum load should never be less than 10% of the rated output load. If the total required output power is below 10%, a parallel bleeding resistor is required on the output, ensuring that the sum of the power consumption is always maintained at 10% minimum.

Dimensions and Recommended Layout



Notes & Instructions

1. If the product works under the minimum required load, it cannot guarantee that the performance of the product complies with all the performance indicators in this manual;
2. The maximum capacitive load is tested under the input voltage range and full load condition;
3. Unless otherwise stated, all indexes in this manual are measured at Ta=25°C, humidity <75%RH, nominal input voltage and rated output load;
4. All index testing methods in this manual are based on the enterprise standards of the company;
5. Our company can provide product customization, specific needs can directly contact our technical staff;