

Product Feature

1. Continuous short-circuit protection
2. No-load input current as low as 8mA
3. Operating ambient temperature range: -40°C to +85°C
4. High efficiency up to 75%
5. I/O isolation test voltage 3k VDC
6. Industry standard pin-out



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.		
AMIF0503LS-1WR3	5 (4.75-5.25)	3.3	250/25	63/67	2400
AMIF0505LS-1WR3		5	200/20	66/70	2400
AMIF1205LS-1WR3	12 (11.4-12.6)	5	200/20	69/73	2400
AMIF1209LS-1WR3		9	111/12	69/73	1000
AMIF1212LS-1WR3		12	83/9	69/73	560
AMIF1215LS-1WR3		15	67/7	71/75	560
AMIF1505LS-1WR3	15 (14.25-15.75)	5	200/20	69/73	2400
AMIF1515LS-1WR3		15	67/7	71/75	560
AMIF2403LS-1WR3	24 (22.8-25.2)	3.3	250/25	65/71	2400
AMIF2405LS-1WR3		5	200/20	67/73	2400
AMIF2409LS-1WR3		9	111/12	67/73	1000
AMIF2412LS-1WR3		12	83/9	67/73	560
AMIF2415LS-1WR3		15	67/7	67/73	560

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Current (full load / no-load)	5V input	3.3VDC/5VDC output	--	286/8	303/--	mA
Input Current (full load / no-load)	12V input	5VDC/9VDC/12VDC output	--	115/8	121/--	
		15VDC output	--	112/8	118/--	
	15V input	5VDC output	--	92/8	97/--	
		15VDC output	--	89/8	94/--	
	24V input	3.3VDC output	--	59/8	65/--	
		5VDC/9VDC/12VDC/15VDC output	--	58/8	63/--	
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	
	3.3VDC output	--	--	±3	

Load Regulation	10%-100% load	Other output	--	--	±2		
Ripple & Noise*	20MHz bandwidth	5V input	--	30	75	mVp-p	
		Other input	Other output	--	30		100
			15VDC output	--	80		150
Temperature Coefficient	100% load		--	±0.02	--	%/°C	
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.		3000	--	--	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°C (see Fig.1)		-40	--	85	°C		
Storage Temperature			-55	--	125			
Case Temperature Rise	Ta=25°C	5V input		3.3VDC output	--		30	--
				Other output	--		25	--
	Other input		--	25	--			
Pin Soldering Resistance Temperature	Soldering spot is 1.5mm away from case for 10 seconds		--	--	300			
Storage Humidity	Non-condensing	5V input	--	--	95	%RH		
		Other input	5	--	95			
Vibration	5V input		10-150Hz, 5G, 30 Min. along X, Y and Z					
	12/15/24VDC input		10-150Hz, 5G, 0.75mm. along X, Y and Z					
Switching Frequency	100% load, nominal input voltage	5V input	--	300	--	kHz		
		Other input	--	260	--			
MTBF	MIL-HDBK-217F@25°C		3500	--	--	k hours		

Mechanical Specifications

Case Material	Black plastic; flame-retardant and heat-resistant (UL94V-0)
Dimensions	19.65 x 6.00 x 10.16mm
Weight	2.1g(Typ.)
Cooling Method	Free air convection

EMC Specifications

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

Temperature Derating Curve

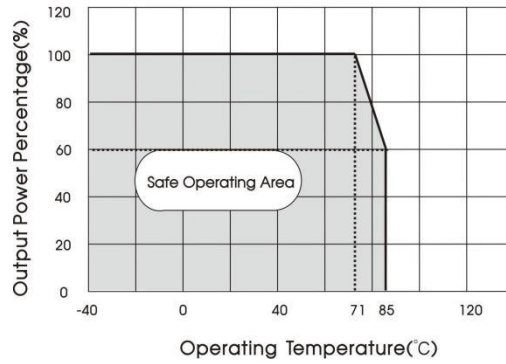
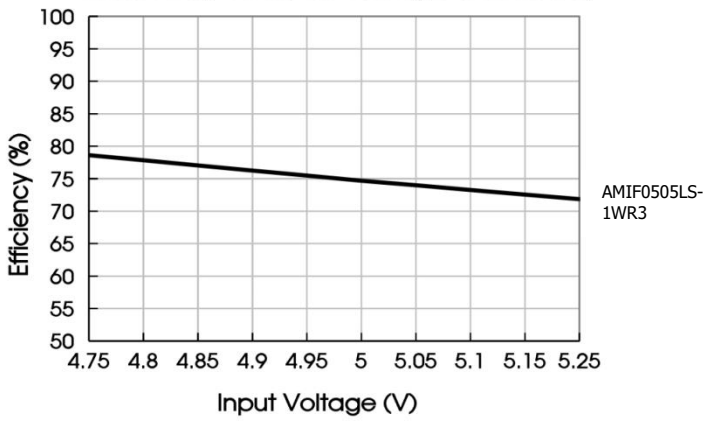
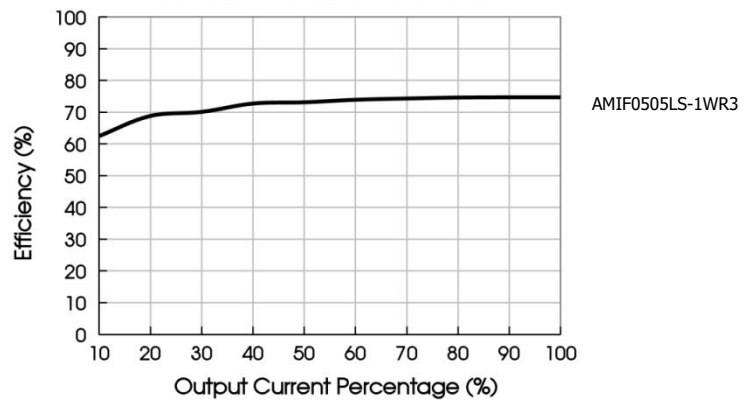


Fig. 1

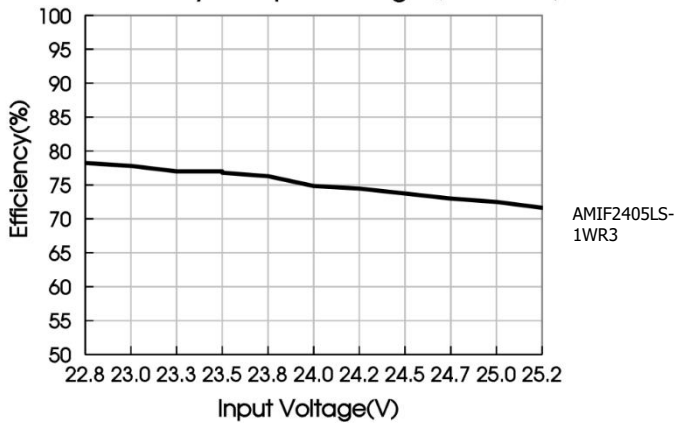
Efficiency Vs Input Voltage (Full Load)



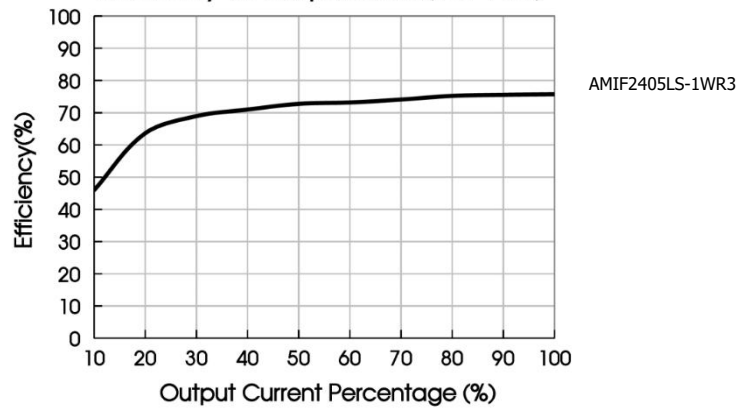
Efficiency Vs Output Load (Vin=5V)



Efficiency Vs Input Voltage (Full Load)



Efficiency Vs Output Load (Vin=24V)



Typical Circuit Design And Application

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.

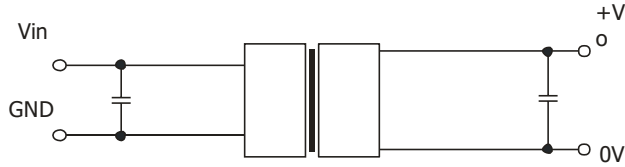


Fig.2

Table 1: Recommended input and output capacitor values

Vin	Cin	Vo	Cout
5VDC	4.7µF/16V	3.3VDC	10µF/16V
12VDC	2.2µF/25V	5VDC	10µF/16V
15VDC	2.2µF/25V	9VDC	2.2µF/16V
24VDC	1µF/50V	12VDC	2.2µF/25V
--	--	15VDC	1µF/25V

2. EMC compliance circuit

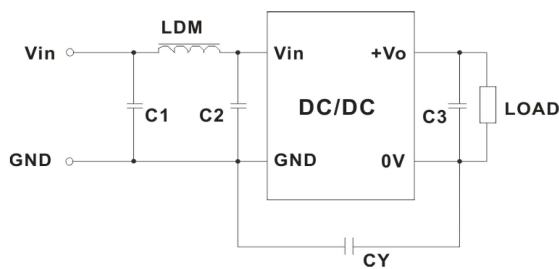
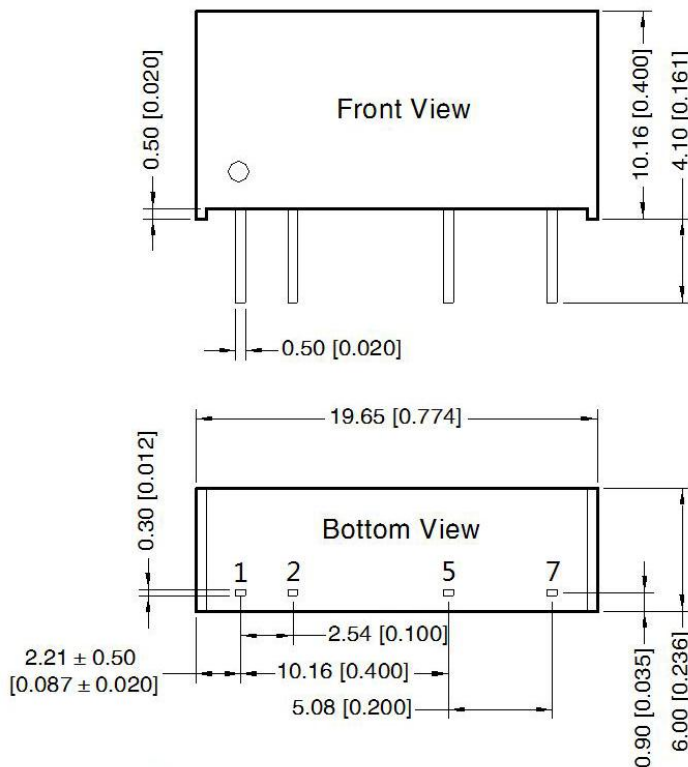


Fig. 3

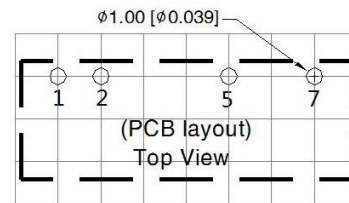
Table 2: Recommended EMC filter values

Input voltage		5VDC	Other input
EMI	C1/C2	4.7µF /25V	4.7µF /50V
	CY	100pF /4kV	270pF/3kV
	C3	Refer to the Cout in table 1	
	LDM	6.8µH	

Dimensions and Recommended Layout



THIRD ANGLE PROJECTION



Note: Grid 2.54*2.54mm

Pin-Out	
Pin	Mark
1	Vin
2	GND
5	0V
7	+Vo

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

Note:

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;