

FEATURES

1. Continuous short-circuit protection
2. No-load input current as low as 8mA
3. Operating ambient temperature range: -40°C to +105°C
4. High efficiency up to 81%
5. High power density
6. I/O isolation test voltage: 1.5k VDC
7. Industry standard pin-out
8. DIP Package



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.		
AMA0503D-1WR3	5 (4.5-5.5)	±3.3	±152/±15	70/74	1200
AMA0505D-1WR3		±5	±100/±10	76/80	1200
AMA0509D-1WR3		±9	±56/±6	77/81	470
AMA0512D-1WR3		±12	±42/±5	77/81	220
AMA0515D-1WR3		±15	±34/±4	77/81	220
AMA1205D-1WR3	12 (10.8-13.2)	±5	±100/±10	76/80	1200
AMA1212D-1WR3		±12	±42/±5	77/81	280
AMA1224D-1WR3		±24	±21/±2	76/80	110
AMA1524D-1WR3	15 (13.5-16.5)	±24	±21/±2	77/81	110
AMA2409D-1WR3	24 (21.6-26.4)	±9	±56/±6	74/80	500
AMA2412D-1WR3		±12	±42/±4	75/81	280
AMA2415D-1WR3		±15	±33/±3	73/79	280

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	3.3VDC output	–	270/8	286/–	mA
		5VDC output	–	251/8	264/–	
		9VDC/12VDC/15VDC output	–	247/8	260/–	
	12VDC input	5VDC output	–	104/8	110/–	
		12VDC output	–	103/8	109/–	
		24VDC output	–	104/8	110/–	
	15VDC input		–	83/8	87/–	
	24VDC input	9VDC output	–	52/8	57/–	
		12VDC output	–	52/8	56/–	
		15VDC output	–	53/8	58/–	
Reflected Ripple Current*			–	15	–	
Surge Voltage (1sec. max.)	5VDC input		-0.7	–	9	VDC
	12VDC input		-0.7	–	18	
	15VDC input		-0.7	–	21	
	24VDC input		-0.7	–	30	
Input Filter			Capacitance filter			

Output Specifications

General Specifications

Mechanical Specifications

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. 4 for recommended circuit test.

Typical Characteristic Curves

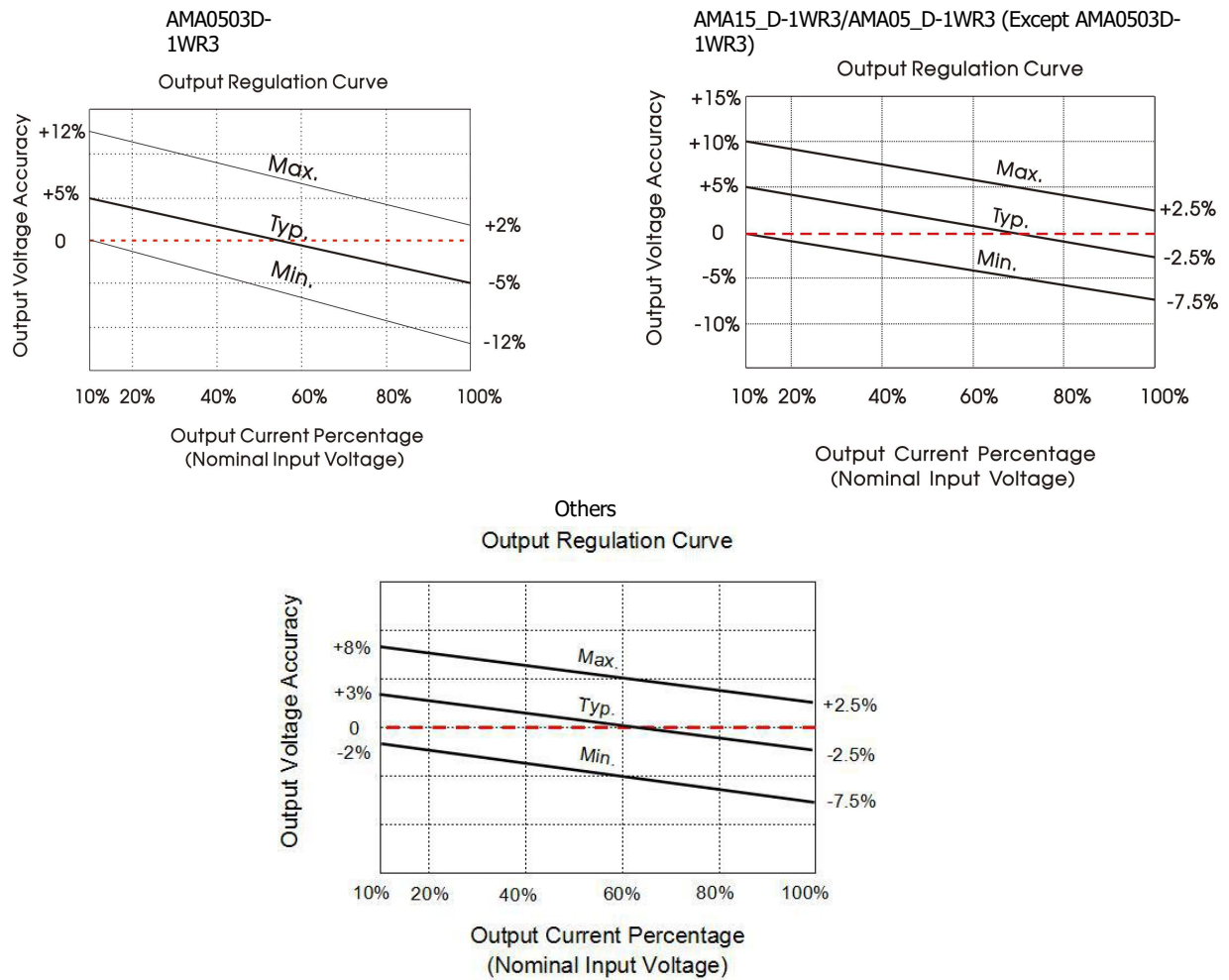


Fig. 1

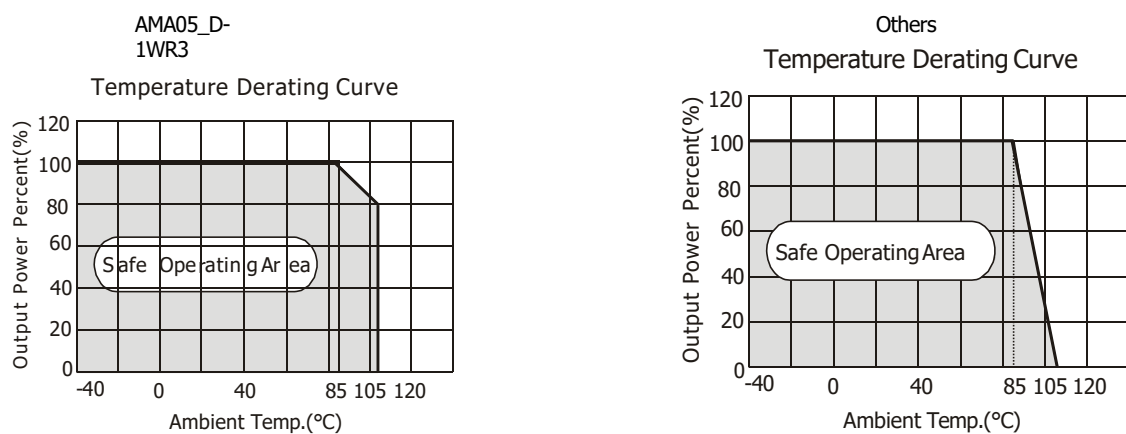
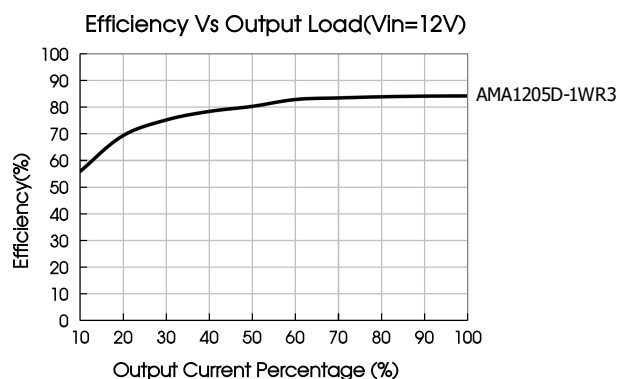
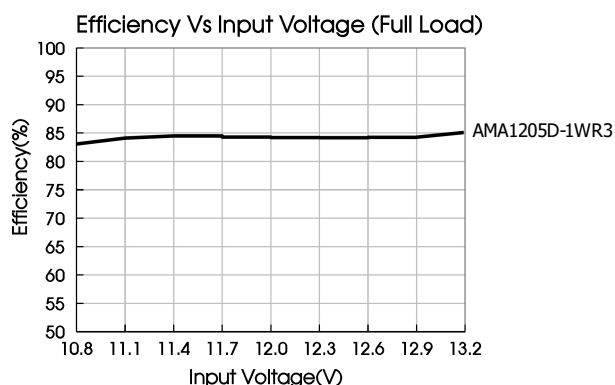
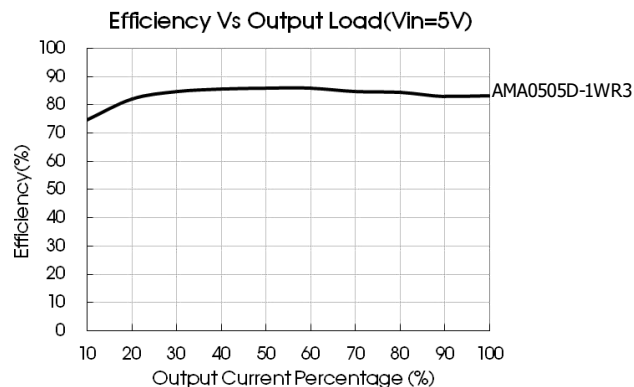
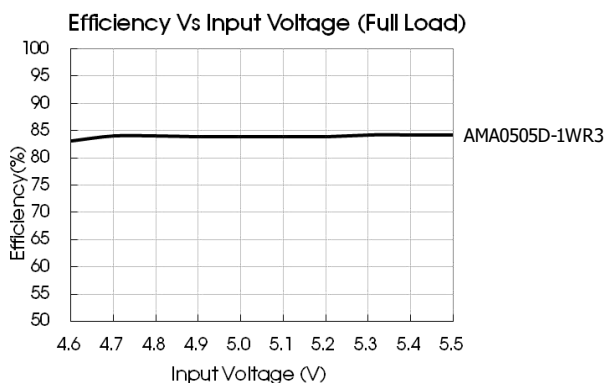


Fig. 2



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.

Table 1: Recommended input and output capacitor values

Vin	Cin	Vout	Cout*
5VDC	4.7μF/16V	±3.3VDC/±5VDC	4.7μF/16V
—	—	±9/±12VDC	1μF/25V
—	—	±15VDC	0.47μF/50V
12VDC	2.2μF/25V	±5VDC/±9VDC	4.7μF/16V
15VDC	2.2μF/25V	±12VDC/±15VDC	1μF/25V
24VDC	1μF/50V	±24VDC	0.47μF/50V

Note: *The capacitor value of the positive and the negative output is identical.



Fig. 3

2. EMC compliance circuit

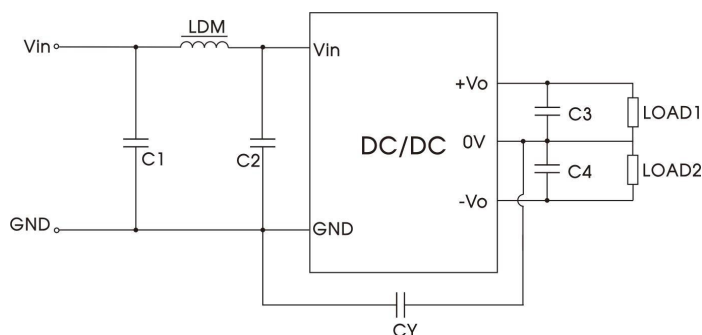


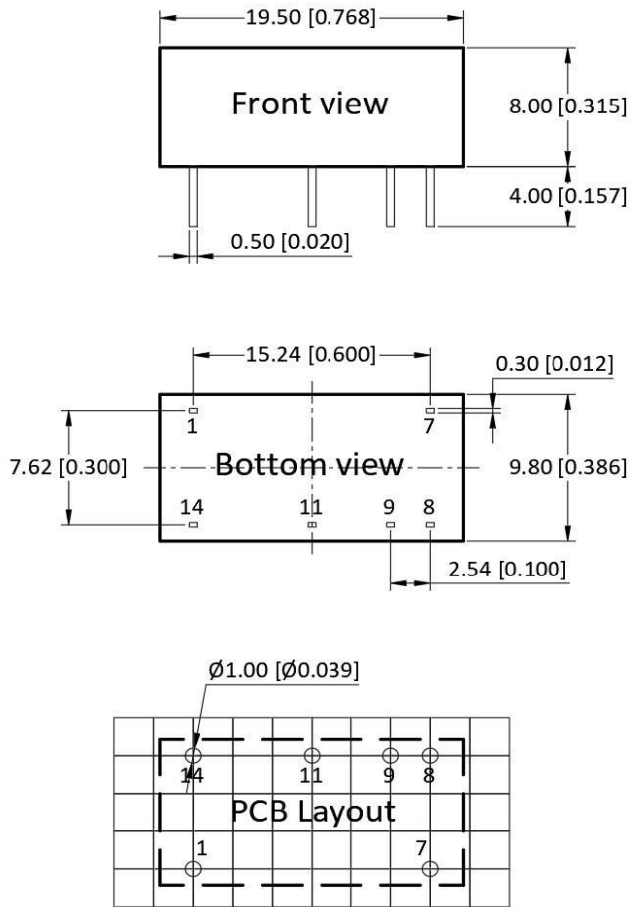
Fig. 4

EMC recommended circuit value table (Table 2)

Input voltage		5VDC		Others
Output voltage		3.3/5/9VDC	12/15VDC	5/9/12/15/24VDC
Emissions	C1/C2	4.7 μ F /25V	4.7 μ F /25V	4.7 μ F /50V
	CY	100pF /2kVDC	1000pF /2kVDC	270pF /2kVDC
	C3/C4	Refer to the Cout in table 1		
	LDM	6.8 μ H		

Note: In the case of actual use, the requirements for EMI are high, it is subject to CY.

Dimensions and Recommended Layout



Pin Definition

Pin	Single Out	Dual Out
1	GND	GND
7	NC	NC
8	-VOUT	0V
9	+VOUT	+VOUT
11	No Pin	-VOUT
14	VIN	VIN

- * Unless otherwise specified unit: mm [inch]
- * General tolerance: ± 0.25 [± 0.010]
- * Pin thickness: ± 0.10 [± 0.004]
- * Footprint grid 2.54 x 2.54 mm

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;