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 86%
5. High power density
6. I/O isolation test voltage 3k VDC
7. Industry standard pin-out

RoHS CE 3 years Warranty

Selection Guide

Part No.	Input Voltage (VDC) Nominal (Range)	Output Voltage (VDC)	Output Current (mA) Max./Min.	Full Load Efficiency (%) Min./Typ.	Capacitive Load*(μF) Max.
AME0503S-2WR3	5 (4.5-5.5)	±3.3	±303/±30	71/75	1200
AME0505S-2WR3		±5	±200/±20	80/84	1200
AME0509S-2WR3		±9	±111/±11	81/85	470
AME0512S-2WR3		±12	±83/±8	81/85	220
AME0515S-2WR3		±15	±67/±7	82/86	220
AME0524S-2WR3		±24	±42/±4	82/86	100
AME1203S-2WR3	12 (10.8-13.2)	±3.3	±303/±30	71/75	1200
AME1205S-2WR3		±5	±200/±20	76/80	1200
AME1207S-2WR3		±7.2	±139/±13	76/80	470
AME1209S-2WR3		±9	±111/±11	78/82	470
AME1212S-2WR3		±12	±83/±8	79/83	220
AME1215S-2WR3		±15	±67/±7	79/83	220
AME1224S-2WR3		±24	±42/±4	79/83	100
AME1505S-2WR3	15 (13.5-16.5)	±5	±200/±20	76/80	1200
AME1515S-2WR3		±15	±67/±7	78/82	220
AME2403S-2WR3	24 (21.6-26.4)	±3.3	±303/±30	70/76	1200
AME2405S-2WR3		±5	±200/±20	74/80	1200
AME2407S-2WR3		±7.2	±139/±13	74/80	470
AME2409S-2WR3		±9	±111/±11	75/81	470
AME2412S-2WR3		±12	±83/±8	77/83	220
AME2415S-2WR3		±15	±67/±7	77/83	220
AME2424S-2WR3		±24	±42/±4	77/83	100

Input Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Input Current (full load / no-load)	5VDC input	3.3VDC output	--	534/8	564/--	mA
		5VDC/7.2VDC output	--	477/8	500/--	
		9VDC/12VDC output	--	471/8	494/--	
		15VDC/24VDC output	--	466/8	488/--	
	12VDC input	3.3VDC output	--	222/8	235/--	
		5VDC/7.2VDC output	--	208/8	219/--	
		9VDC output	--	203/8	214/--	
		12VDC/15VDC/24VDC output	--	201/8	211/--	
	15VDC input	5VDC/9VDC output	--	167/8	176/--	
		12VDC/15VDC/24VDC output	--	165/8	173/--	
	24VDC input	3.3VDC output	--	110/8	119/--	
		5VDC/7.2VDC output	--	104/8	112/--	
		9VDC output	--	103/8	111/--	
		12VDC output	--	99/8	107/--	
		15VDC/18VDC/24VDC output	--	97/8	104/--	
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			
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%		3.3VDC output	--	--	±1.5	--
			Others	--	--	±1.2	
Load Regulation	10%-100% load	5VDC input	3.3VDC output	--	10	20	%
			5/7.2VDC output	--	8	15	
			9/12/15 output	--	7	10	
			24VDC output	--	5	10	
		12/15/24VDC input	3.3VDC output	--	15	20	
			5VDC output	--	7	15	
			6.4VDC output	--	10	15	
			7.2VDC output	--	6	15	
			9/12VDC output	--	5	10	

			15VDC output	--	4	10	
			18/24VDC output	--	3	10	
Ripple & Noise*	20MHz bandwidth		5V input	--	75	200	mVp-p
			12/15/24V input	--	75	180	
Temperature Coefficient	Full 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≥85°C(see Fig. 2)		-40	--	105	°C
Storage Temperature			-55	--	125	°C
Case Temperature Rise	Ta=25°C		--	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	Full load, nominal input voltage	5V input	--	220	--	kHz
		12/15/24V input	--	260	--	
MTBF	MIL-HDBK-217F @ 25°C		3500	--	--	k hours

Mechanical Specifications

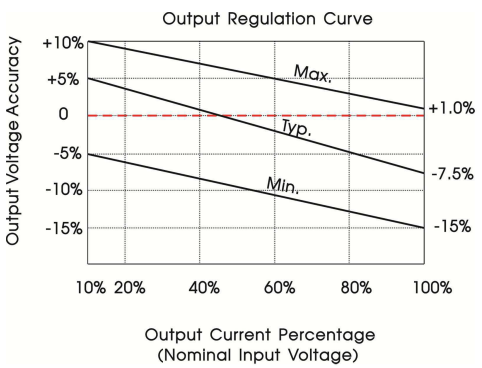
Case Material	Black plastic; flame-retardant and heat-resistant (UL94V-0)
Dimensions	19.65 x 7.05 x 10.16 mm
Weight	2.4g(Typ.)
Cooling Method	Free air convection

EMC Specifications

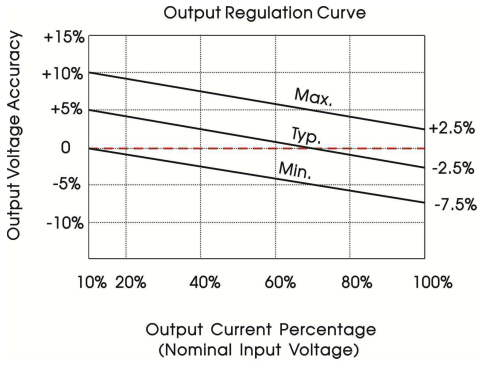
Emissions	CE	CISPR32/EN55032 CLASS B
	RE	CISPR32/EN55032 CLASS B
Immunity	ESD	IEC/EN61000-4-2 Air ±8kV, Contact ±6kV perf. Criteria B
Note: Refer to Fig. 4 for recommended circuit test		

Typical Characteristic Curves

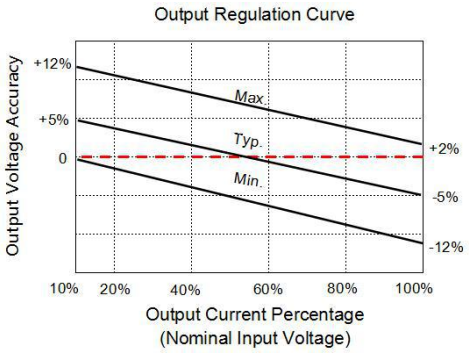
5VDC input, 3.3VDC output



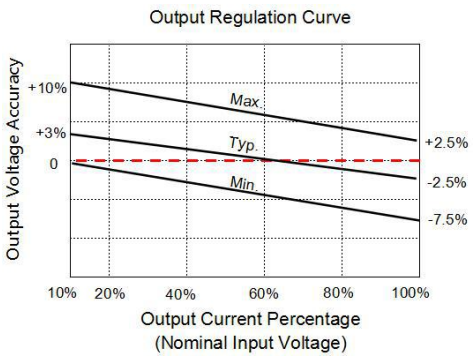
5VDC input, other output



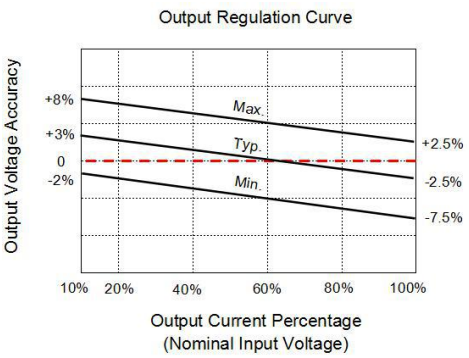
12/15/24VDC input, 3.3VDC output



12/15/24VDC input, 5/6.4/7.2VDC output



12/15/24VDC input, other output



Circuit Design and Application

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.

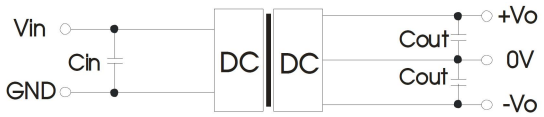


Fig.3

Table 1: Recommended input and output capacitor values

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

Vin	Cin	Dual Vout	Cout
5VDC	10μF/16V	±3.3VDC	4.7μF/16V
12VDC	2.2μF/25V	±5VDC	4.7μF/16V
15VDC	2.2μF/25V	±7.2VDC	2.2μF/25V
24VDC	lμF/50V	±9VDC	2.2μF/25V
		±12VDC	lμF/25V
		±15VDC	lμF/25V
		±24VDC	0.47μF/50V

2 EMC compliance circuit

Dual Output

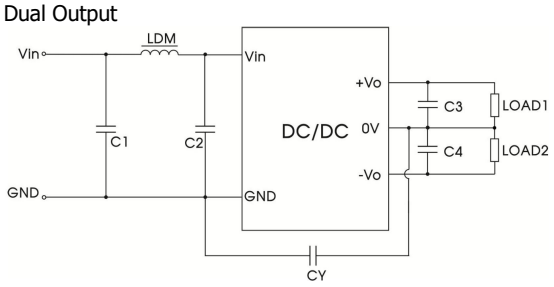
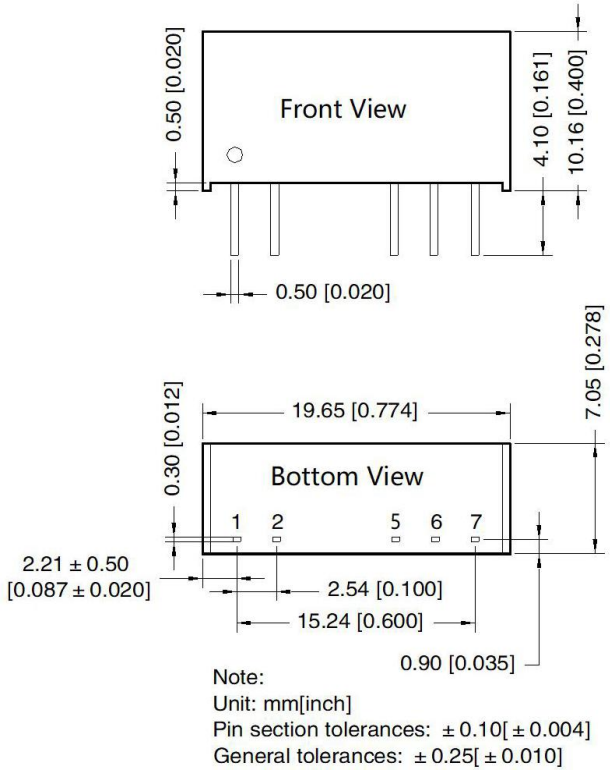


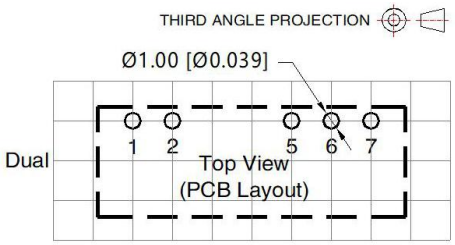
Fig. 4

Input voltage		5VDC	12/15/24VDC
Emissions	C1/C2	4.7μF /16V	4.7μF /50V
	CY	270pF/4kV	
	C3/C4	Refer to Cout in Fig. 3	
	LDM	6.8μH	

Dimensions and Recommended Layout

Dimensions | **PCB Printing Layout & Pin Definition Table**





Pin-Out	
Pin	Dual
1	Vin
2	GND
5	-Vo
6	0V
7	+Vo

Note:

1. The input voltage cannot exceed the specified range value, otherwise permanent and irreparable damage may be caused ;
2. 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;
3. The maximum capacitive load is tested under the input voltage range and full load condition;
4. Unless otherwise stated, all indexes in this manual are measured at Ta=25℃, humidity <75%RH, nominal input voltage and rated output load;
5. All index testing methods in this manual are based on the enterprise standards of the company;
6. Our company can provide product customization, specific needs can directly contact our technical staff;