

Features

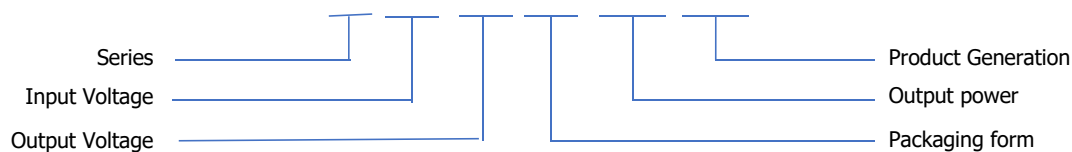
1. Wide operating temperature range: -40°C to +105°C
2. Up to 85% efficiency
3. No load current as low as 5mA
4. Ripple as low as 30mVp-p
5. Sustainable short-circuit protection
6. Isolation:3000VDC
7. Fixed voltage input, Output 1W, Isolated, Non stabilized voltage, Dual output, SIP package



3 years
Warranty

Model Numbering

AMExxxxS-1WR3



Selection Guide

Product model	Input Voltage Standard value(range)	Output Voltage	Output Current (mA) (Max./Min.)	Efficiency % (Min./Typ.)	Maximum capacitive load (μ F)
AME0303S-1WR3	3.3VDC (2.97-3.63)	\pm 3.3	\pm 152/ \pm 15	70/74	1200
AME0305S-1WR3		\pm 5	\pm 100/ \pm 10	78/82	1200
AME0309S-1WR3		\pm 9	\pm 56/ \pm 6	78/83	470
AME0312S-1WR3		\pm 12	\pm 42/ \pm 5	78/83	220
AME0315S-1WR3		\pm 15	\pm 34/ \pm 4	78/83	220
AME0324S-1WR3		\pm 24	\pm 21/ \pm 3	80/85	100

Product model	Input Voltage Standard value(range)	Output Voltage	Output Current (mA) (Max./Min.)	Efficiency % (Min./Typ.)	Maximum capacitive load (μ F)
AME0503S-1WR3	5VDC (4.5-5.5)	± 3.3	$\pm 152/\pm 15$	70/74	1200
AME0505S-1WR3		± 5	$\pm 100/\pm 10$	78/82	1200
AME0509S-1WR3		± 9	$\pm 56/\pm 6$	78/83	470
AME0512S-1WR3		± 12	$\pm 42/\pm 5$	78/83	220
AME0515S-1WR3		± 15	$\pm 34/\pm 4$	78/83	220
AME0524S-1WR3		± 24	$\pm 21/\pm 3$	80/85	100
AME0903S-1WR3	9VDC (8.1-9.9)	± 3.3	$\pm 152/\pm 15$	70/74	1200
AME0905S-1WR3		± 5	$\pm 100/\pm 10$	78/82	1200
AME0909S-1WR3		± 9	$\pm 56/\pm 6$	78/83	470
AME0912S-1WR3		± 12	$\pm 42/\pm 5$	78/83	220
AME0915S-1WR3		± 15	$\pm 34/\pm 4$	78/83	220
AME0924S-1WR3		± 24	$\pm 21/\pm 3$	80/85	100
AME1203S-1WR3	12VDC (10.8-13.2)	± 3.3	$\pm 152/\pm 15$	70/74	1200
AME1205S-1WR3		± 5	$\pm 100/\pm 10$	78/82	1200
AME1209S-1WR3		± 9	$\pm 56/\pm 6$	78/83	470
AME1212S-1WR3		± 12	$\pm 42/\pm 5$	78/83	220
AME1215S-1WR3		± 15	$\pm 34/\pm 4$	78/83	220
AME1224S-1WR3		± 24	$\pm 21/\pm 3$	80/85	100
AME1503S-1WR3	15VDC (13.5-16.5)	± 3.3	$\pm 152/\pm 15$	70/74	1200
AME1505S-1WR3		± 5	$\pm 100/\pm 10$	78/82	1200
AME1509S-1WR3		± 9	$\pm 56/\pm 6$	78/83	470
AME1512S-1WR3		± 12	$\pm 42/\pm 5$	78/83	220
AME1515S-1WR3		± 15	$\pm 34/\pm 4$	78/83	220
AME1524S-1WR3		± 24	$\pm 21/\pm 3$	80/85	100
AME2403S-1WR3	24VDC (21.6-26.4)	± 3.3	$\pm 152/\pm 15$	70/74	1200
AME2405S-1WR3		± 5	$\pm 100/\pm 10$	78/82	1200
AME2409S-1WR3		± 9	$\pm 56/\pm 6$	78/83	470
AME2412S-1WR3		± 12	$\pm 42/\pm 5$	78/83	220
AME2415S-1WR3		± 15	$\pm 34/\pm 4$	78/83	220
AME2424S-1WR3		± 24	$\pm 21/\pm 3$	80/85	100

Input Characteristics

Parameter	Conditions		Min.	Typ.	Max.	Units
Input current (Rated Load)	Nominal voltage input@3.3VDC	3.3VDC Output	--	384	405	mA
		5VDC/7.2VDC Output	--	370	389	mA
		9VDC/12VDC Output	--	365	389	mA
		15VDC/24VDC Output	--	350	389	mA
	Nominal voltage input@5VDC	3.3VDC Output	--	271	286	mA
		5VDC/7.2VDC Output	--	244	257	mA
		9VDC/12VDC Output	--	241	254	mA
		15VDC/24VDC Output	--	241	254	mA
	Nominal voltage input@12VDC	3.3VDC Output	--	112	118	mA
		5VDC/7.2VDC Output	--	105	110	mA
		9VDC/12VDC Output	--	104	110	mA
		15VDC/24VDC Output	--	103	110	mA
	Nominal voltage input@15VDC	3.3VDC Output	--	84	89	mA
		5VDC/7.2VDC Output	--	84	89	mA
		9VDC/12VDC Output	--	83	89	mA
		15VDC/24VDC Output	--	83	88	mA
	Nominal voltage input@24VDC	3.3VDC Output	--	56	61	mA
		5VDC/7.2VDC Output	--	53	58	mA
		9VDC/12VDC Output	--	53	58	mA
		15VDC/24VDC Output	--	52	58	mA
Input current (No-load)			--	5	20	mA
Reflected ripple current			3	15	20	mA
Input impulse voltage	1sec. max.	3.3VDC/5VDC Input	-0.7	--	9	VDC
		9VDC Input	-0.7	--	12	VDC
		12VDC Input	-0.7	--	18	VDC
		15VDC Input	-0.7	--	21	VDC
		24VDC Input	-0.7	--	30	VDC
Input filter	Capacitive filtering					
Remarks: This product does not support hot plug						

Output Characteristic

Parameter	Conditions	Min.	Typ.	Max.	Units	
Output voltage accuracy		See Figure 3 (envelope curve)				
Linear regulation rate	Input voltage variation +/- 1%	3.3VDC Output	--	--	+/-1.5	%
		Other outputs	--	--	+/-1.2	%
Load regulation rate	10% to 100% load	3.3VDC Output	--	15	20	%
		5VDC Output	--	10	15	%
		9VDC Output	--	8	10	%
		12VDC Output	--	7	10	%
		15VDC Output	--	6	10	%
		24VDC Output	--	5	10	%
Ripple & Noise	20MHz bandwidth	--	30	100	mVp-p	
Temperature drift coefficient	100% load	--	+/-0.03	--	%/°C	
Short circuit protection	Sustainable, Self-healing					
Note: The testing method for ripple and noise is the parallel line testing method.						

General Characteristics

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation voltage	Input-output, Test time 1 minute, Leakage current less than 1 mA	3000	--	--	VDC
Insulation resistance	Input-output, Insulation voltage 500VDC	1000	--	--	MΩ
Isolation capacitance	Input-output, 100KHz/0.1V	--	20	50	pF
Working temperature	Temperature ≥ 85 °C for derating (See Figure 4)	-40	--	+105	°C
Storage temperature		-55	--	+125	°C
Storage humidity	Non condensing	--	--	95	%RH

Physical Characteristics

Parameter	Content
Housing material	Black flame retardant and heat-resistant plastic (UL94V-0)
Overall dimensions	19.65 x 6.00 x 10.16mm
Weight	2.1g(Typ.)
Cooling mode	Natural air cooling

EMC Characteristics

Parameter	Category	Content
EMI	Conductive disturbance	CISPR32/EN55032 CLASS B (The recommended circuit is shown in Figure 2)
	Radiation disturbance	CISPR32/EN55032 CLASS B (The recommended circuit is shown in Figure 2)
EMS	Electrostatic discharge	IEC/EN61000-4-2 Contact ±6kV perf. Criteria B

Circuit Design and Application



Figure 1: Application circuit

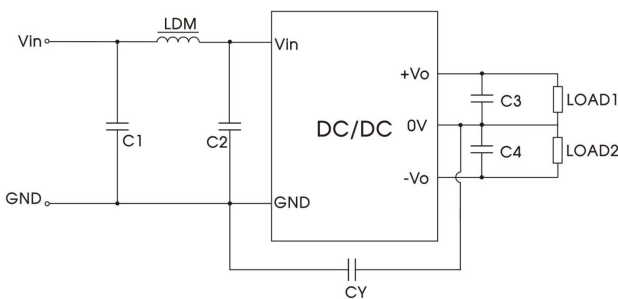


Figure 2: EMC Typical Recommended Circuits

Table 1: Recommended Capacitive Load Values

Vin(VDC)	Cin(μF)	Vo(VDC)	Cout(μF)
Nominal voltage	1-10	Nominal voltage	2.2-22

Table 2: Recommended Circuit Parameter Values

Category 类别	Component 元件	Value 参数
EMI	C1	4.7μF /50V
	C2	4.7μF /50V
	C3,C4	2.2-22μF /50V
	CY	270pF/2kV
	LDM	6.8μH

- 1) Typical application: If it is required to further reduce the input and output ripple, a capacitor filter network can be connected at the input and output terminals. The application circuit is shown in Figure 1. However, proper filter capacitor shall be selected. If the capacitance is too large, it may cause startup problems. For each output, under the condition of ensuring safe and reliable operation, the recommended capacitive load values are shown in Table 1.
- 2) Typical EMC recommended circuits are shown in Figure 2.

Product Characteristic Curve

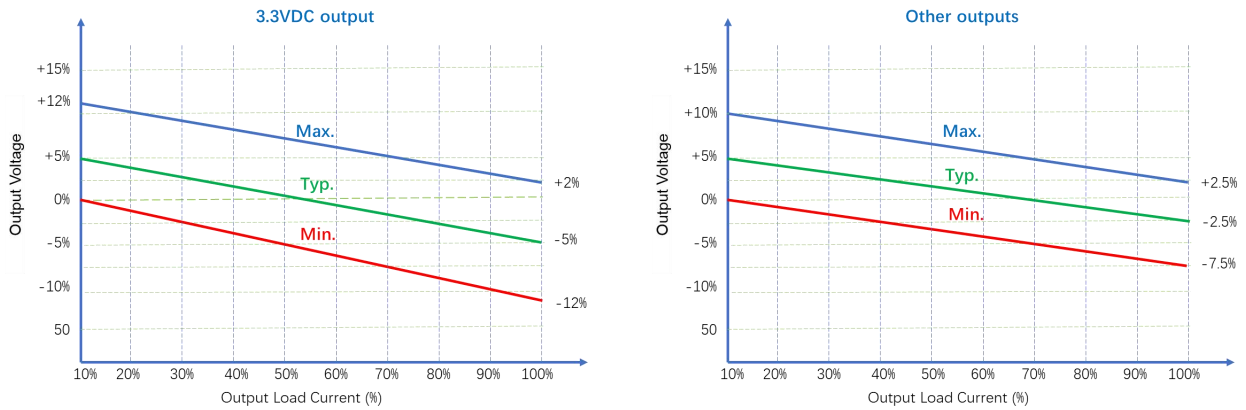


Figure 3: Voltage tolerance envelope

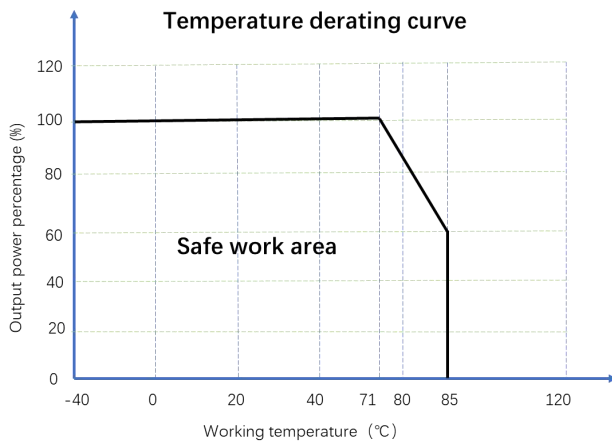


Figure 4: Temperature Derating Curve

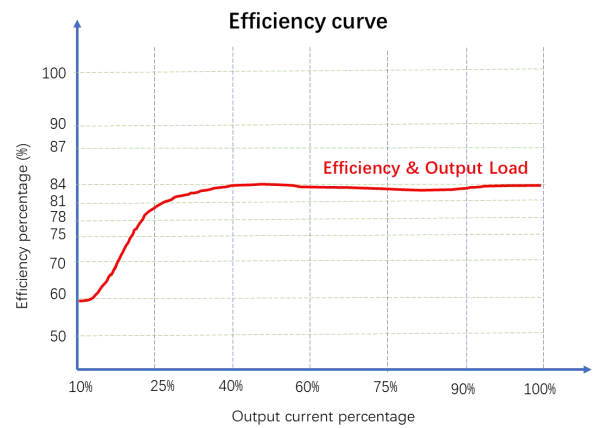


Figure 5: Efficiency VS Output Load (Nominal Voltage Input)

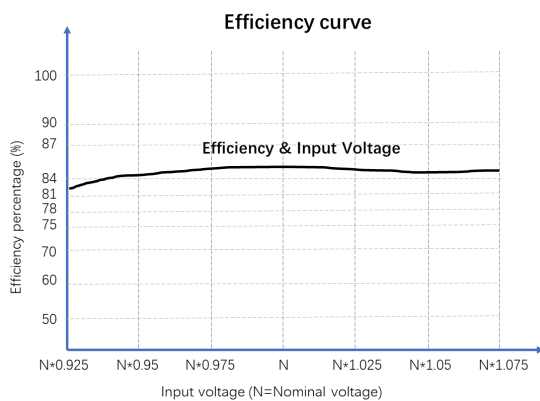
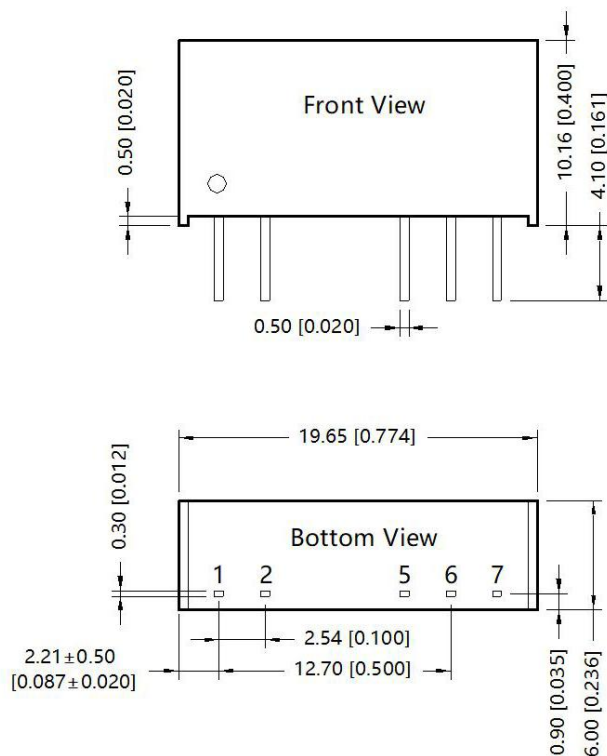


Figure 6: Efficiency VS Input Voltage (100% Load)

Overall Dimensions and Pin Functions



Note:
 Dimensions in mm [inch]
 Terminal diameter tolerance: ± 0.10 [± 0.004]
 Undeclared tolerance: ± 0.50 [± 0.020]

Table 3: Pin Function Table

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

Figure 7: Overall dimensions

Notes & Instructions

- 1) The input voltage shall not exceed the specified range value, otherwise permanent and unrecoverable damage may be caused;
- 2) Unless otherwise specified, the parameters in this manual are measured at 25 °C, 40%~75% humidity, input nominal voltage and output pure resistance mode under full load;
- 3) All index test methods are based on the company's enterprise standards.
- 4) The copyright and the final interpretation right of the product belong to AMCHARD.

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