Features

1. Sustainable short-circuit protection
2. Wide working temperature range: -40 ℃ to+85 ℃
3. Up to 88% efficiency
4. The no-load current is as low as 5MA
5. Ripple as low as 20mVp-p
6. Single output
7. Package: SMD
8. Isolation voltage:1500VDC

RoHS CE 3 years Warranty

Selection Guide

Product model	Input Voltage Standard value(range)	Output Voltage (V)	Output Current (mA) (Max./Min.)	Efficiency % (Min./Typ.)	Maximum capacitive load (μF)
AMB0503XT-2WR3	5VDC（4.5-5.5）	3.3	400/40	74/79	2400
AMB0505XT-2WR3		5	400/40	79/85	2400
AMB0509XT-2WR3		9	222/22	79/85	1000
AMB0512XT-2WR3		12	167/17	79/85	560
AMB0515XT-2WR3		15	133/13	81/86	560
AMB0524XT-2WR3		24	Aug-83	81/86	220
AMB1205XT-2WR3	12 (10.8-13.2)	5	400/40	79/83	2400
AMB1209XT-2WR3		9	222/22	79/83	1000
AMB1212XT-2WR3		12	167/17	80/84	560
AMB1215XT-2WR3		15	133/13	80/84	560
AMB1224XT-2WR3		24	83/8	81/85	220
AMB1505XT-2WR3	15 (13.5-16.5)	5	400/40	79/83	2400
AMB1515XT-2WR3		15	133/13	80/84	560
AMB2405XT-2WR3	24 (21.6-26.4)	5	400/40	77/83	2400
AMB2409XT-2WR3		9	222/22	77/83	1000
AMB2412XT-2WR3		12	167/17	78/84	560
AMB2415XT-2WR3		15	133/13	78/84	560
AMB2424XT-2WR3		24	83/8	79/85	220

Input Characteristics

Parameter	Conditions	Min.	Typ.	Max.	Units
Input current (Rated Load)	Nominal voltage input	- -	477	500	mA
Input current (No-load)		4	8	20	mA
Reflected ripple current		- -	15	- -	mA
Input impulse voltage	05VDC input	-0.7	- -	9	VDC
	12VDC input	-0.7	- -	18	
	15VDC input	-0.7	- -	21	
	24VDC input	-0.7	- -	30	
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 1 (envelope curve)			
Linear regulation rate	Input voltage variation+/- 1%		- -	- -	+/-1.1	- -
Load regulation rate	10% to 100% load	5VDC input	- -	7	15	%
		9VDC input	- -	6	10	
		12VDC input	- -	5	10	
		15VDC input	- -	4	10	
		24VDC input	- -	3	10	
Ripple & Noise	20MHz bandwidth		- -	50	150	mVp-p
Temperature drift coefficient	100% load		- -	+/-0.03	- -	%/℃
Short circuit protection	Sustainable, Self-healing					

General Characteristics

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation voltage	Input output, Test time 1 minute, Leakage current less than 1 mA	1500	- -	- -	VDC
Insulation resistance	Input output, Insulation voltage 500VDC	1000	- -	- -	MΩ
Isolation capacitance	Input output, 100KHz/0.1V	- -	20	- -	pF
Working temperature	Temperature ≥ 85 ℃ for derating (See Figure 2)	-40	- -	+105	℃
Storage temperature		-55	- -	+125	℃
Storage humidity	Non condensing	- -	- -	95	%RH
Housing temperature rise during operation	Ta=25 ℃, Nominal input, Full output	- -	25	- -	℃
Soldering temperature resistance of pins	The distance from the welding spot to the shell is 1.5mm, 10 seconds	- -	- -	300	℃
Switching frequency	Full load, Nominal input voltage	- -	260	- -	kHz
Mean time between failures	MIL-HDBK-217F@25℃	3500	- -	- -	kHours

Physical Characteristics

Parameter	Content
Housing material	Black flame retardant and heat-resistant plastic (UL94V-0)
Overall dimensions	13.70 x 8.00 x 7.00 (mm)
Weight	1.4g(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

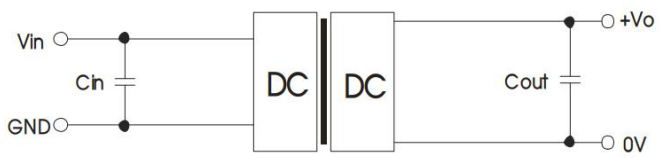

Figure 1: Application circuit

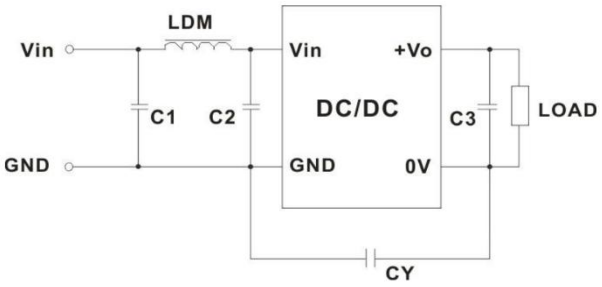

Figure 2: EMC Typical Recommended Circuits

Table 1:
Recommended Capacitive Load Values

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

Table 2:
Recommended Circuit Parameter Values

Category	Component	Value
EMI	C1	4.7μF /50V
	C2	4.7μF /50V
	C3	Refer to Cout parameter in Table 2
	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

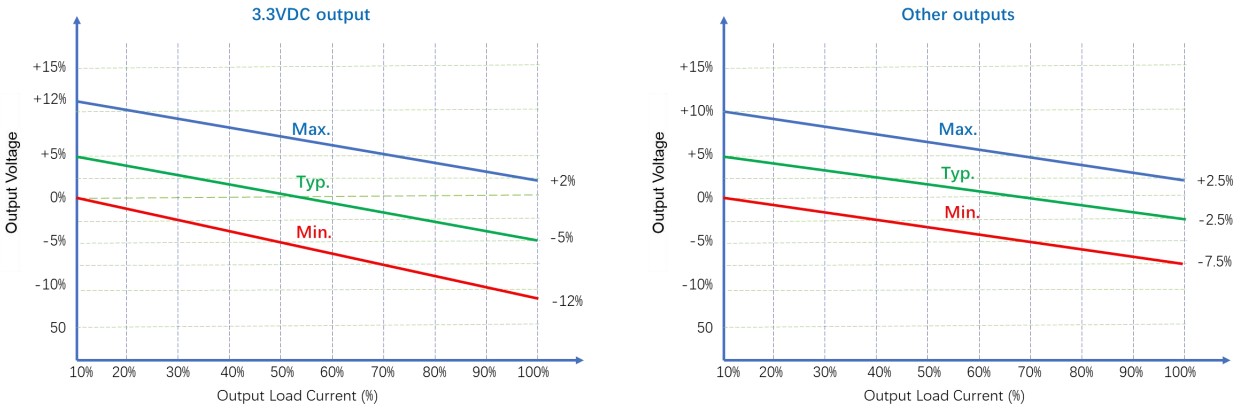

Figure 3: Voltage tolerance envelope

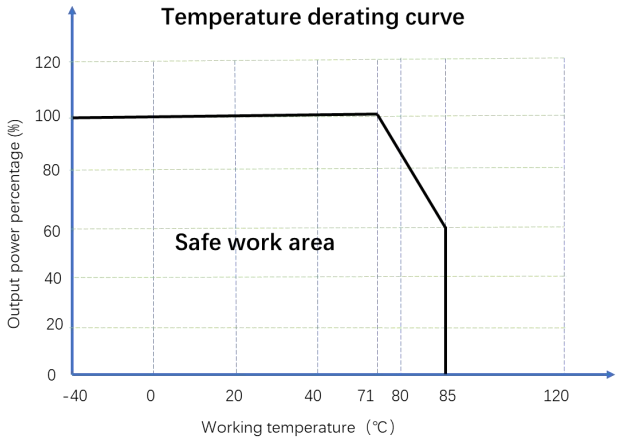

Figure 4: Temperature Derating Curve

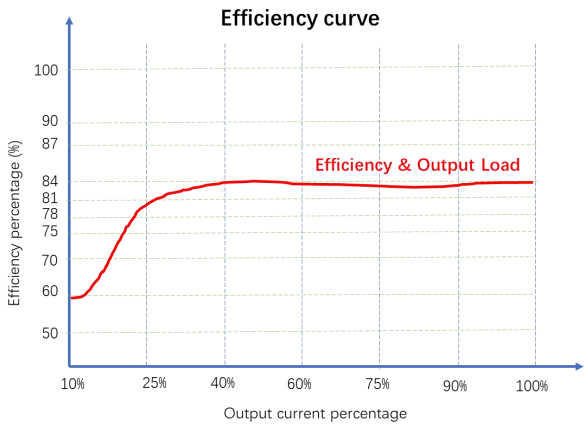

Figure 5: Efficiency VS Output Load (Nominal Voltage Input)

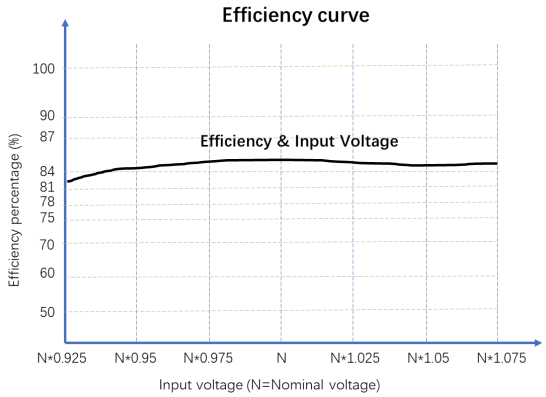

Figure 6: Efficiency VS Input Voltage (100% Load)

Overall Dimensions and Pin Functions

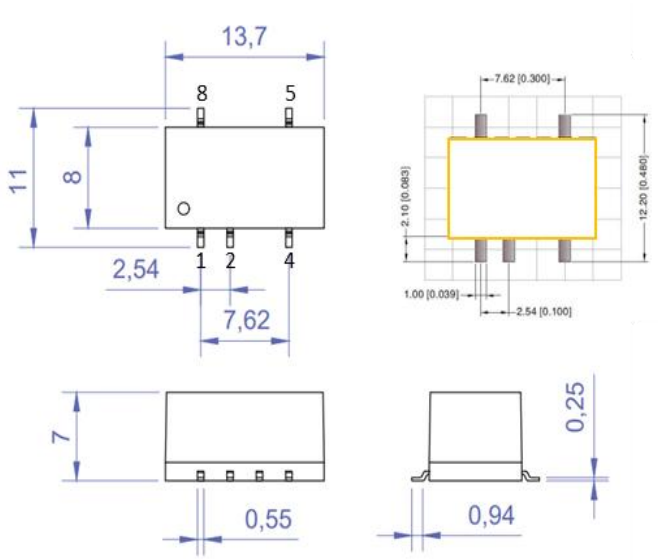

Figure 7: Overall dimensions

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	GND
2	Vin
4	0V
5	+Vo
8	NC

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℃, 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;