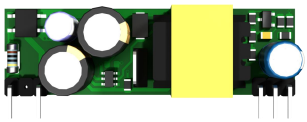
Product Features:

- ✧ **Package type**：DIP，lead wire；
- ✧ **Temperature range**：-40℃ to +85℃；
- ✧ **Conversion efficiency**：82 ~ 87%；
- ✧ **Isolation withstand voltage**：3000VDC；
- ✧ **Input range**：85 ~ 450VAC，120~630VDC；
- ✧ **Output protection**： overcurrent and short circuit protection;
- ✧ **Application areas**：Industry, instrumentation, RF communication, rail transit, smart street lights, smart switches, smart homes.



AM31-V series DIP plastic package plug-in



AM31-D2 Series DIP Bare Board Plug-in



C Lead wire

Product Selection Table

Product Model	Input Voltage Range	Output			Efficiency(%) Min./Typ.	Maximum capacitive load（μF）
		Power（W）	Voltage（VDC）	Current（mA） Max./Min		
AM31-12W05V	85 ~ 450VAC 120~630VDC	12	5	2400	76	2200
AM31-12W05C			5	2400	76	2200
AM31-12W05D2			5	2400	76	2200
AM31-10W09D2		10	9	1100	78	1800
AM31-12W12V		12	12	1000	79	1500
AM31-12W12C			12	1000	79	1500
AM31-12W12D2			12	1000	79	1500
AM31-12W15V			15	800	80	1200
AM31-12W15C			15	800	80	1200
AM31-12W15D2			15	800	80	1200
AM31-12W24V			24	500	83	680
AM31-12W24C			24	500	83	680

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AM31-12W24D2			24	500	83	680

Input Parameters

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Input voltage range	AC input	85	380	450	Vac
	DC input	120	532	630	Vdc
Input frequency	AC input	47	--	63	Hz
Input current	DC input (532V)	--	28	--	mA
Start-up time		--	800	1500	ms
Inrush current	AC input	--	10	--	A
Input filter type		LC			
External fuse		AC input: 1A/500VAC, slow break, must be connected. DC input: 1A/1KV, slow break, must be connected.			

Output Parameters

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output voltage accuracy	--	--	--	±1.0	±1.5	%
Voltage regulation rate	Full load		--	±0.25	±0.5	%
Load regulation rate	10%~100% load	AM21-12W-V	--	±1.0	±2	%
Ripple noise	20MHz bandwidth, 100% load	AM21-12W-V	--	--	120	mV
Temperature drift coefficient	Full load		--	±0.05	--	%/℃
Short circuit protection			Sustainable, self-recovering			
Overcurrent protection	AM31-12W-V/C		110~150% Io self-recovering			
Minimum load			0	--	--	%

General features

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Insulation voltage	Input - Output	3000	--	--	Vac
Working environment temperature		-40	25	+55	℃

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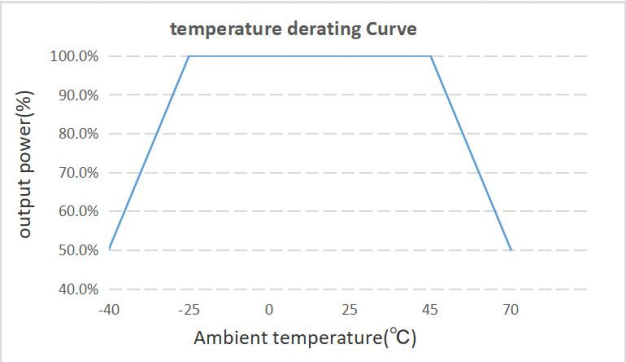
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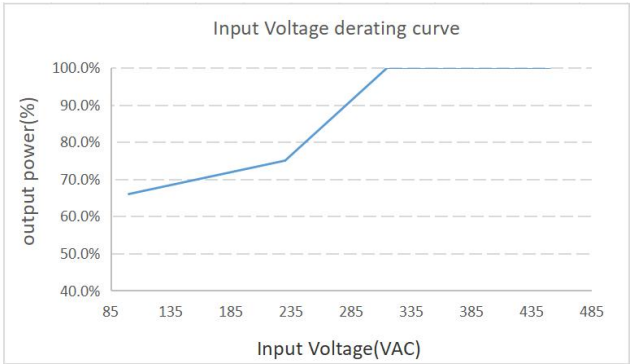
Storage temperature		-40	25	+85	℃
Working humidity		--	--	95	%RH
Welding temperature	Wave soldering	260 ± 5℃; time：5-10s			
	Manual soldering	360 ± 10℃; tim：3-5s			
Switching frequency		--	65	72	KHz
Mean time between failures		MIL-HDBK-217F@25℃ > 200,000 h			

Mechanical specifications

Shell material		flame retardant and heat resistant
Dimensions	AM31-12W-V	38.2*25.2*23mm
	AM31-12W-D2	51*15*19mm
Product weight	AM31-12W-V	31g(Typ.)
	AM31-12W-C	28g(Typ.)
	AM31-12W-D2	17g(Typ.)
Cooling method		Natural cooling

Product characteristic curve

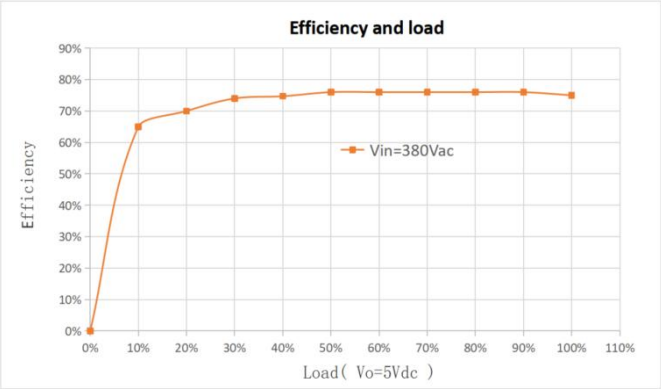


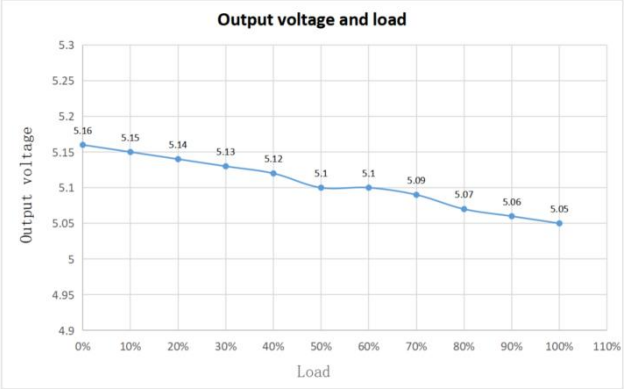


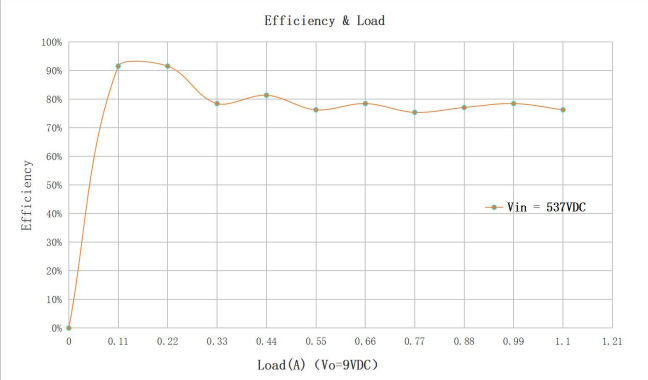
Conversion efficiency and load

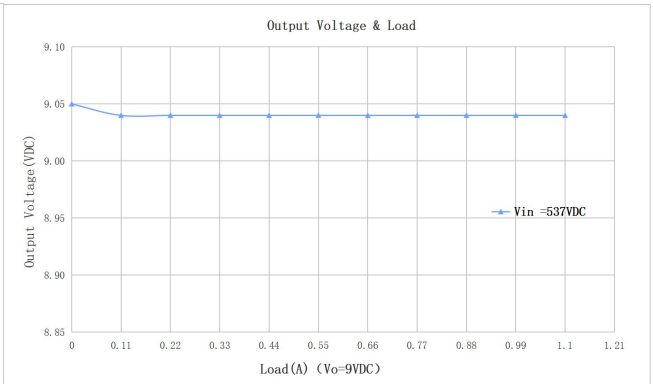
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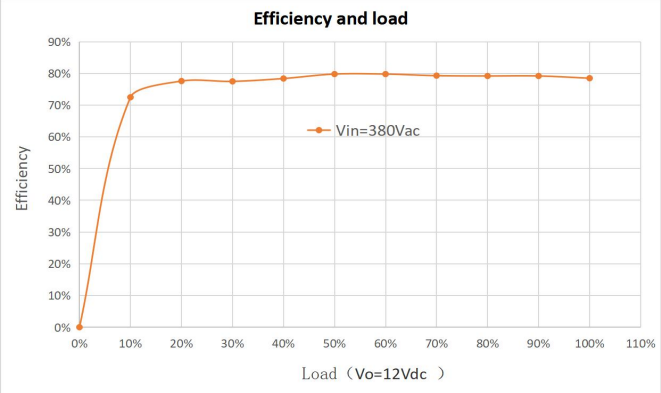
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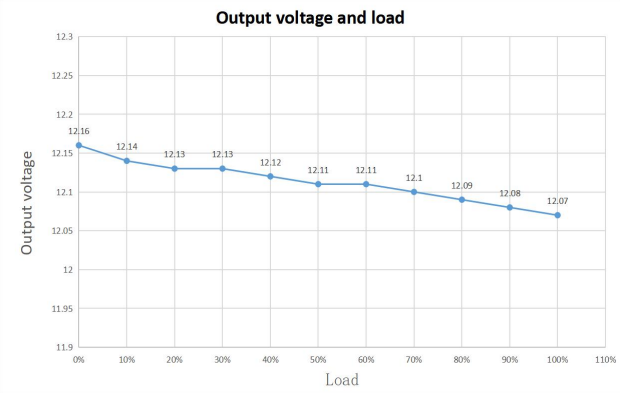


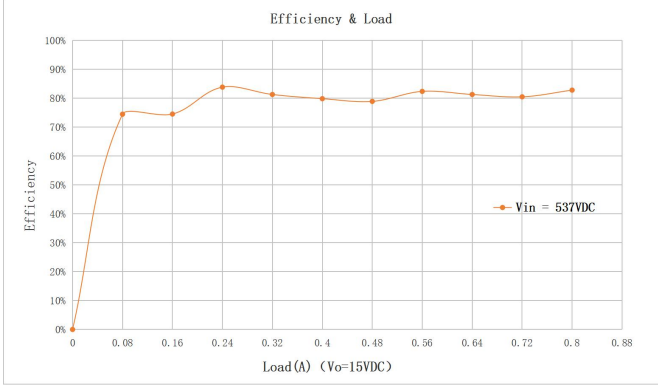


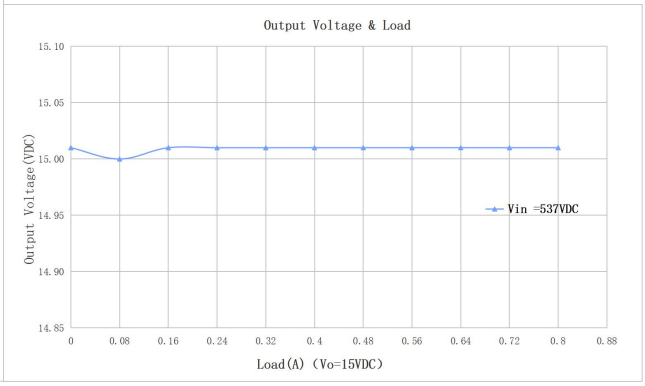




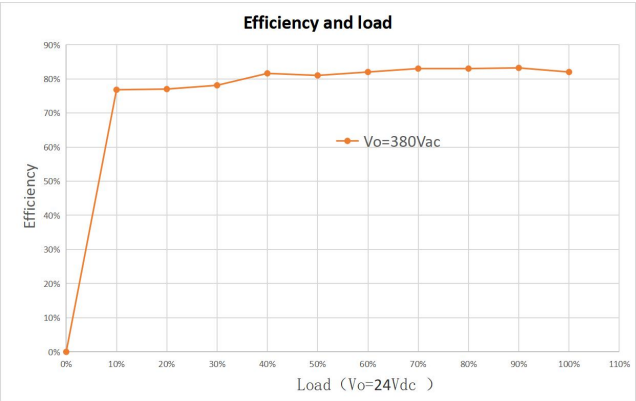


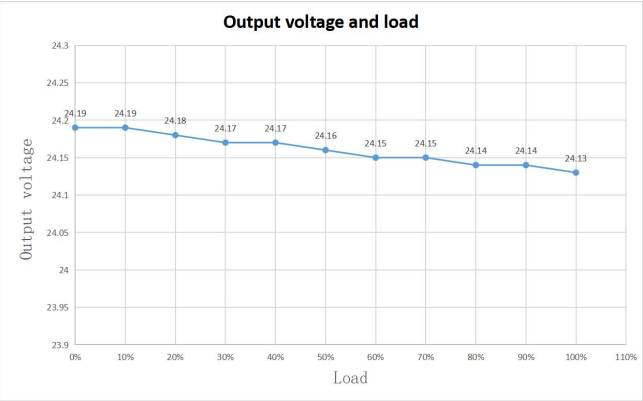






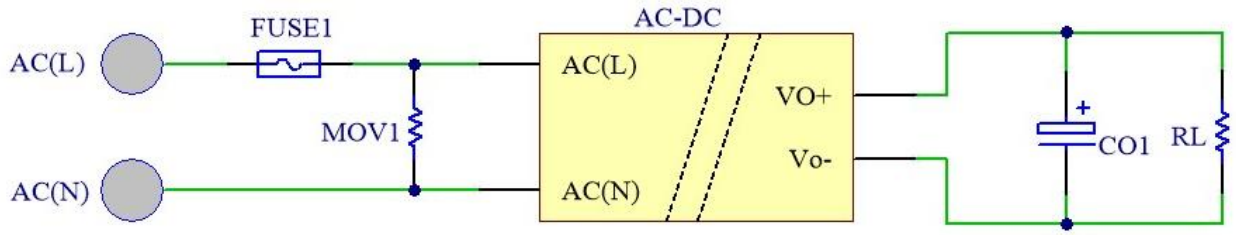
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Reference Design

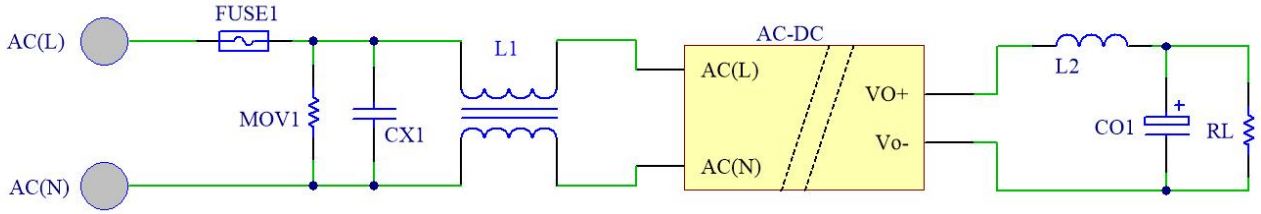
Typical application design



FUSE1	CO1	MOV1
1A/500VAC Slow-blow, required	470uF (High frequency low resistance)	10D 821K

Notes: co1 select High frequency low resistance Electrolytic capacitor

EMC recommended circuit design



FUSE1	MOV1	CX1	L1	L2	CO1
1A/500V Slow disconnect, must connect	10D 821K	0.1uF/500 V	UU9.8 - 10mH	0.47uH SLO0420HR47MT T	470uF

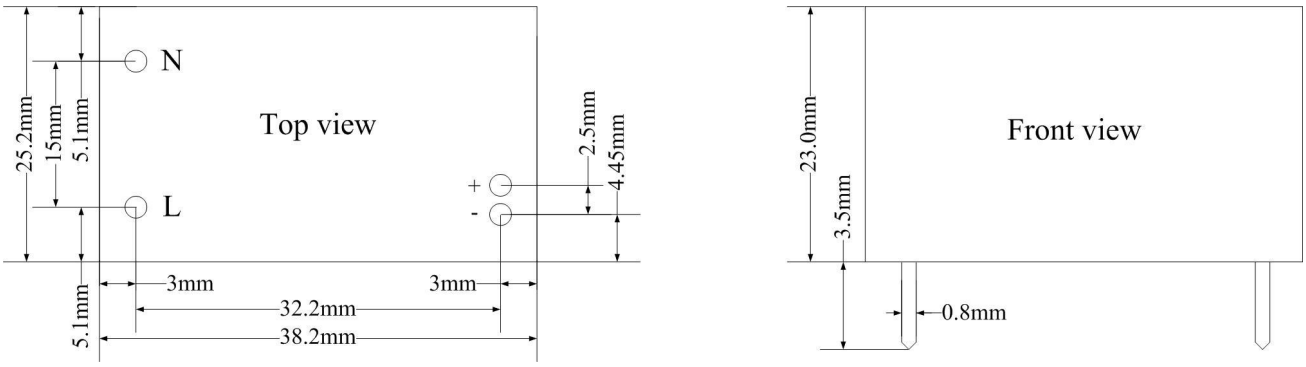
Notes: co1 select High frequency low resistance Electrolytic capacitor

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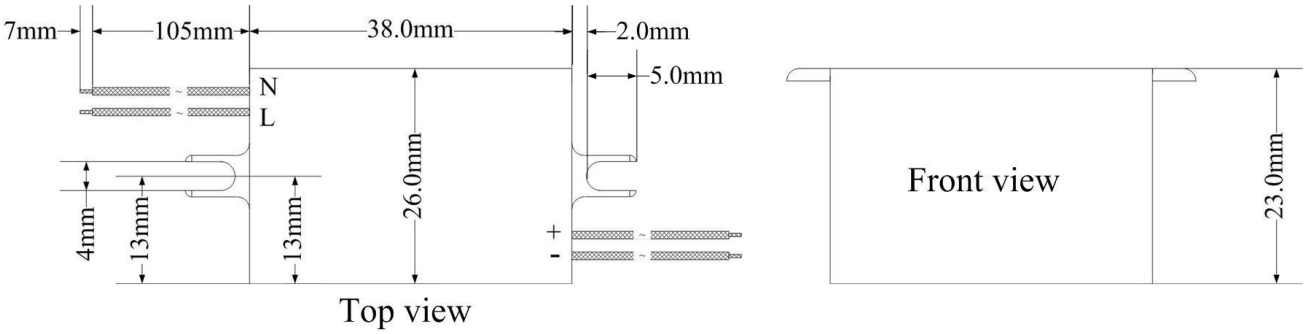
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Product Dimensions

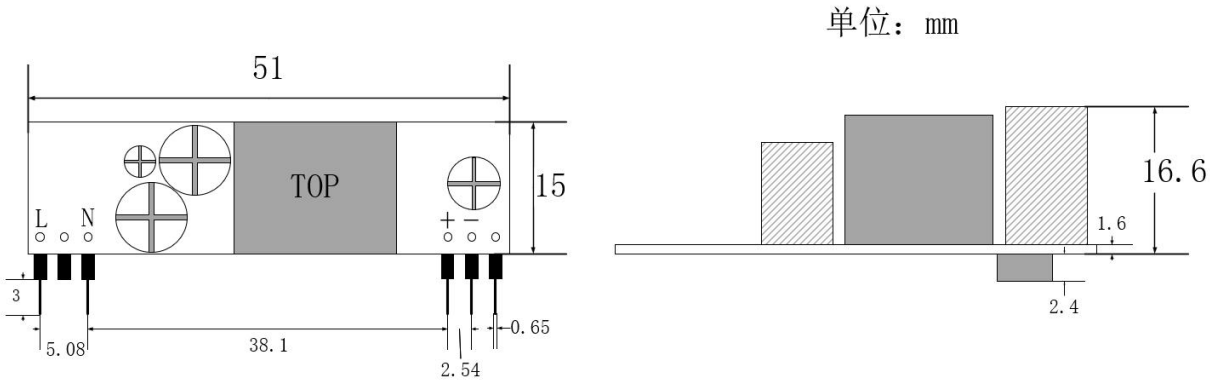
AM31-12W-V



AM31-12W-C



AM31-12WXD2



Note:

Pin diameter tolerances:±0.1mm

General tolerances:±0.5mm

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PIN	Note
L	AC_L AC input_live wire
N	AC_N AC input_neutral wire
+	+DC DC output positive pole
-	-DC DC output reference ground

File Version	Modified content	Release date	Modified by
V2.45	First release	2025-3-26	L Y C
V2.46	Added AM31-12WXD series	2025-3-27	L Y C

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