AD-1W Series

Features

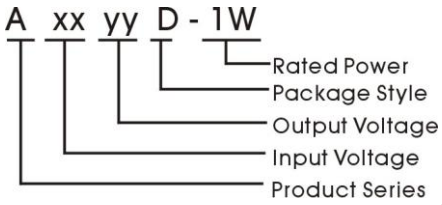
- ★ Small Footprint
- ★ In-Out Isolation Voltage 1000 VDC
- ★ 14 PIN DIP Package
- ★ Temperature Range:-40℃ to +85℃
- ★ UL94V-0 Inflaming retarding package
- ★ MTBF>1million hours(25℃)

Applications

The A_D-1W Series are are specially designed for application where a group of polar power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to where:

1) 1000 VDC input and output isolation;
2) Input voltage variation ≤ ±10%;
3) Regulated and low ripple noise is not required.



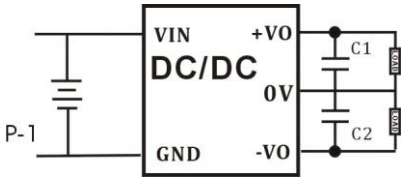
Model Detail List Specification

Model Number	Input Voltage range (nominal voltage)	Output Voltage	Output Current (mA)		Input current Full load. (mA)		Efficiency	Max. Capacitive Load(μF)
			Min.	Max.	Min.	Max.		
A0505D-1W	4.5 ~5.5 VDC (5 VDC)	±5.0V	±10	±100	25	278	72%	100 uF
A0509D-1W		±9.0V	±6	±56		267	75%	
A0512D-1W		±12.0V	±4	±42		256	78%	
A0515D-1W		±15.0V	±3	±33		247	81%	
A1205D-1W	10.8~13.2VDC (12 VDC)	±5.0V	±10	±100	18	114	73%	
A1209D-1W		±9.0V	±6	±56		111	75%	
A1212D-1W		±12.0V	±4	±42		106	82%	
A1215D-1W		±15.0V	±3	±33		104	78%	
A2405D-1W	21.6~26.4VDC (24 VDC)	±5.0V	±10	±100	12	57	73%	
A2409D-1W		±9.0V	±6	±56		55.5	75%	
A2412D-1W		±12.0V	±4	±42		53	78%	
A2415D-1W		±15.0V	±3	±33		52	80%	

Overloaded Protection

Under normal operating conditions, the output circuit of these products has no protection against overload. The simplest method is to connect a self-recovery fuse in series at the input end or add a circuit breaker to the circuit.

Model test circuit



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Output Specifications

Item	Test Conditions		Min.	Typ.	Max.	Unit
Output Power			0.1		1	W
Line Voltage Regulation	For Vin change of ±1%				±1.5	%
Load regulation	10% to 100% load	5V output		10	15	%
		12V output		6	15	%
		15V output		6	15	%
		24V output		5	15	%
Ripple	20MHz Bandwidth			50		mVp-p
Noise	20MHz Bandwidth			75		mVp-p
Temperature Drift	100% full load				±0.03	%/°C
Input Filter	Refer to recommend circuit P-1		C Filter			

Environmental Specifications

Item	Test Conditions	Min.	Typ.	Max.	Unit
Storage Humidity	Non condensing			95	%
Temp. rise at full load			-25		℃
Operating Temperature		-40		+85	℃
Storage Temperature	Power derating (above 85℃)	-55		+125	℃
Cooling		Free air convection			

Common Specifications

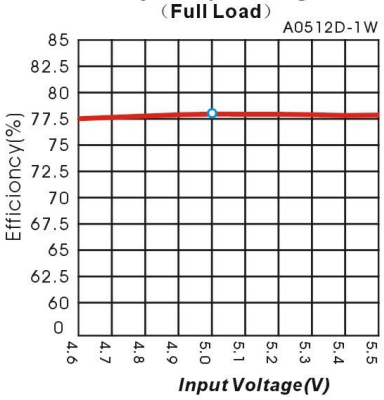
Item	Test Conditions	Min.	Typ.	Max.	Unit
Isolation Voltage	Tested for 1 minute and leakage current less than 1 mA	1000			VDC
Switching Frequency	Full load, nominal input		100		KHz
MTBF	MIL-HDBK-217F@25℃	1000			K hours
Isolation Resistance	Test at 500VDC	1000			MΩ
Weight			2.5		g

Input Specifications

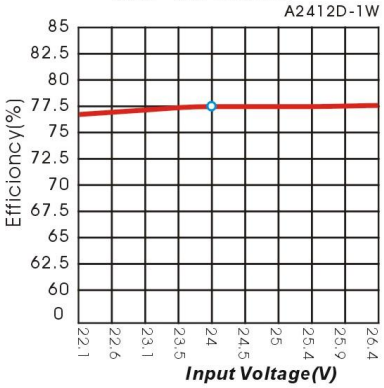
Item	Test Conditions	Min.	Typ.	Max.	Unit
Input Max. voltage	5 VDC Input (4.5~5.5V)			6	VDC
	12 VDC Input (10.8~13.2V)			14.4	VDC
	24 VDC Input (21.6~26.4V)			28.8	VDC
Input surge voltage (1 sec. Max.)	5 VDC Input (4.5~5.5V)	-0.8		10	VDC
	12 VDC Input (10.8~13.2V)	-0.8		20	VDC
	24 VDC Input (21.6~26.4V)	-0.8		32	VDC

Product typical Curve

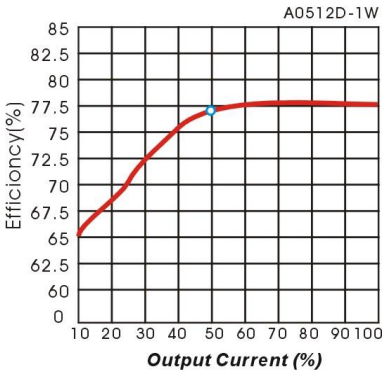
Efficiency VS Input Voltage curve
（Full Load）



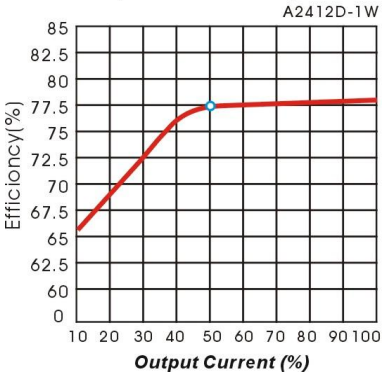
Efficiency VS Output Voltage curve
（Vin=Vin-nominl）



Output Load VS Efficiency curve
(Vin=Vin-nominal)

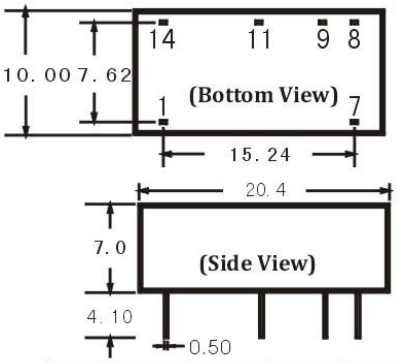


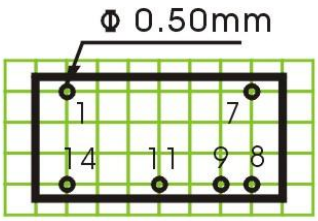
Efficiency VS Output Load curve
(Vin=Vin-nominal)



AD-1W Series

Mechanical Dimensions & Recommended Footprint

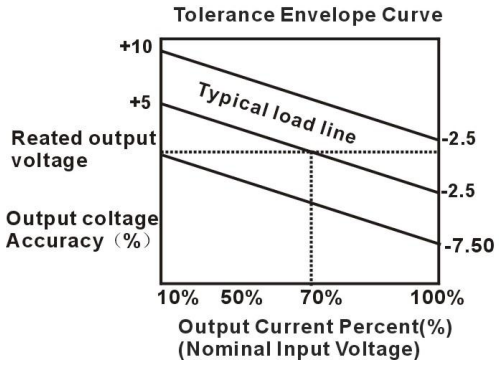


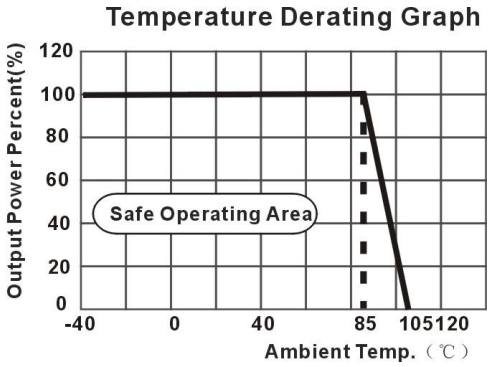


Note: grid 2.54*2.54mm.
Unit: mm
General tolerances : 0.20mm

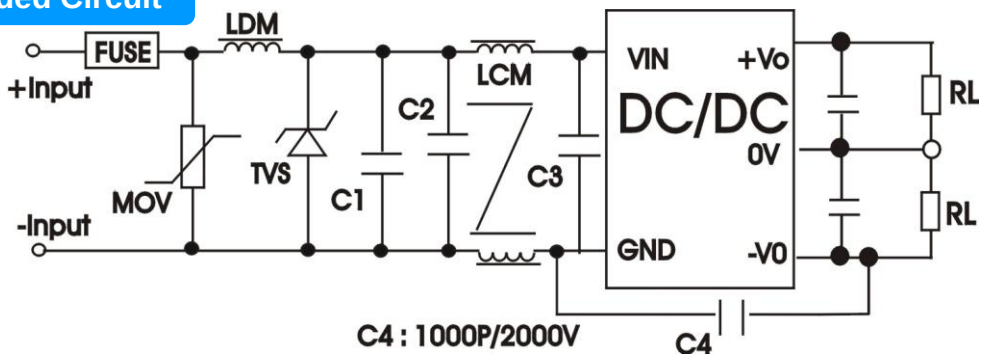
Package	Vin	GND	-Vo	OV	+Vo	NC
AD	14	1	11	8	9	7

Tolerance Envelope Curve & Temperature Derating Graph





EMC Recommended Circuit



EMC Module Application Circuit