1D14A1_1.5UP Series

1W Single Output - Fixed Input - Isolated & Unregulated
DIP PACKAGE

DC-DC Converter 1 Watt

- Continuous short-circuit protection
- No-load input current as low as 5mA
- Operating ambient temp. range -40°C ~ +105°C
- I/O isolation test voltage 1.5k VDC
- Industry standard pin-out
- DIP package
- EN62368 Approval

The 1D14A1_1.5UP series is specially designed for applications where an isolated voltage is required in a distributed power supply system. They are suitable for: pure digital circuits, low frequency analog circuits, relay-driven circuits and data switching circuits.

SHORT CIRCUIT PROTECTED

100% RoHS compliant 6/6

Common specifications

Short circuit protection:	Continuous, self-recovery
Operation temperature range:	-40°C – +105°C (Derating when operating temperature up to 85°C, seeFig. 2)
Storage temperature range:	-55°C – +125°C
Lead temperature	300°C Max. (1.5mm from case for 10 sec.)
Casing Temperature Rise:	15°C TYP Ta = 25°C
Storage humidity range:	< 95% (Non-condensing)
MTBF (MIL-HDBK-217F@25°C):	>3,500,000 hours
Case material:	Black plastic; flame-retardant and heat-resistant (UL94 V-0)
Cooling:	Free air convection
Dimensions:	20.00 x 10.00 x 7.00mm
Weight:	2.1g Typ.

Input specifications

Item	Test condition	Min	Typ	Max	Units
Input current (No load/full load)	5VDC output		270/5	286/10	mA
Reflected ripple current			15		mA
Surge voltage	1s max	-0.7		9	VDC
Filter	Capacitance filter				
Hot Plug	Unavailable				

Note: * Refer to DC-DC Converter Application Notes for detailed description of reflected ripple current test method.

Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Isolation voltage	Input-output Electric Strength Test for 1 minute with a leakage current of 1mA max.	1500			VDC
Isolation resistance	Input-output resistance at 500VDC	1000			MΩ
Isolation Capacitance	Input/output, 100KHz/0.1V		20		pF

Output specifications

Item	Test condition	Min	Typ	Max	Units
Output power	See output regulation curve(Fig. 1)				
Line regulation	For Vin change of 1%			±1.2	%
Load regulation	10%-100% load		10	15	%
Ripple & Noise*	20MHz Bandwidth		30	75	mVp-p
Output voltage accuracy	See tolerance envelope graph				
Temperature drift	100% full load		±0.02		%/°C
Switching frequency	100% load, nominal input voltage		270		KHz

*The "parallel cable" method is used for Ripple and Noise test, please refer to DC-DC Converter Application Notes for specific information.

Example:
1D14A1_0505D1.5UP
1 = 1Watt; D14 = DIP14; A1 = Pinning; 05 = 5Vin; 05 = 5Vout;
D = Dual Output; 1 = 1.5kVDC; U = Unregulated Output;
P = Short Circuit Protection

EMC specifications

Emissions	CE	CISPR32/EN55032	CLASS B (External Circuit Refer to EMC recommended circuit)
Emissions	RE	CISPR32/EN55032	CLASS B (External Circuit Refer to EMC recommended circuit)
Immunity	ESD	IEC/EN61000-4-2	Contact ±4KV perf. Criteria B

Note:
1. If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
2. The maximum capacitive load offered were tested at input voltage range and full load;
3. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta = 25°C, humidity <75%RH with nominal input voltage and rated output load;
4. All index testing methods in this datasheet are based on our company's corporate standards;
5. We can provide product customization service, please contact our technicians directly for specific information;
6. Products are related to laws and regulations: see „Features" and „EMC";
7. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

Product Selection Guide

Part Number	Input Voltage [V]	Output Voltage [VDC]	Output Current [mA, Max/Min]	Full Load Efficiency [%, min/typ]	Capacitive load [µF, max]
1D14A1_0505D1.5UP	5 (4.5-5.5)	5	200/20	78/82	2400

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Typical characteristics

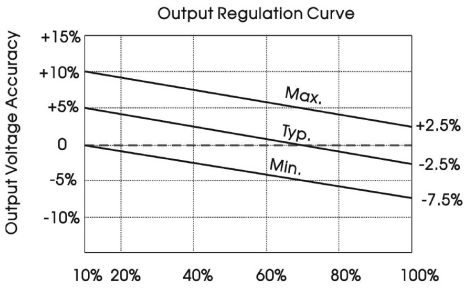


Fig. 1

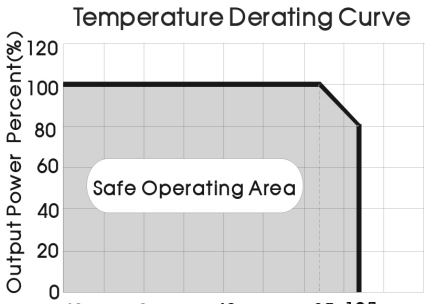


Fig. 2

Typical application circuit

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.

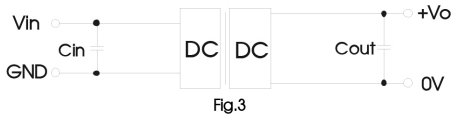


Fig.3

Table 1: Recommended capacitive load value table

Vin (VDC)	Cin (μF)	Vout (VDC)	Cout (μF)
5VDC	4.7	5	10

EMC solution-recommended circuit

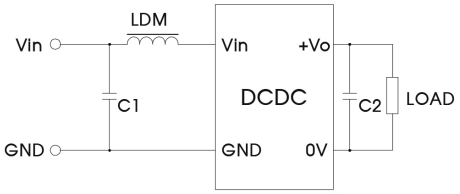
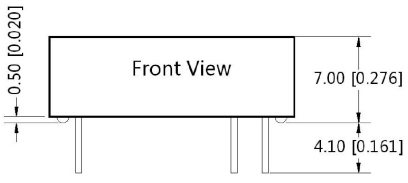


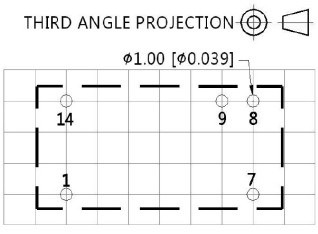
Fig. 4

Table 2: EMC recommended circuit value table

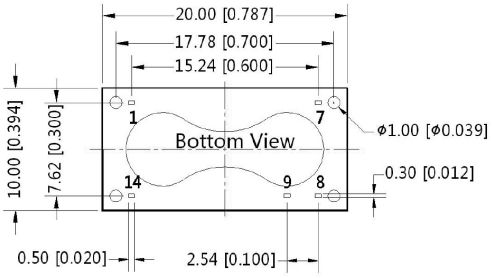
Emissions	Ouput voltage	5
	C1	4.7μF /25V
	C2	Refer to the Cout in table 1
	LDM	6.8μH

Mechanical dimensions





Note : Grid 2.54*2.54mm



Pin-Out	
Pin	Single
1	GND
7	NC
8	0V
9	+Vo
14	Vin

NC:No connection

Note:
Unit :mm[inch]
Pin section tolerances :±0.10[±0.004]
General tolerances:±0.25[±0.010]