



2D8A1_1.5UP series

2W - Single & Dual output DC-DC converter - Fixed input - Isolated & unregulated

DC-DC Converter

2 Watt

- ⊕ 8Pin DIP Package
- ⊕ Continuous short-circuit protection
- ⊕ No-load input current as low as 5mA
- ⊕ Operating ambient temp. range: -40°C to +105°C
- ⊕ High efficiency up to 89%
- ⊕ I/O isolation test voltage 1.5kVDC
- ⊕ Industry standard pin-out
- ⊕ IEC62368, UL62368, EN62368 approved

Introducing our cutting-edge 2D8A1_1.5UP series with a DIP8 Package, designed to meet the demanding needs of modern electronic applications. This package offers continuous short-circuit protection, ensuring your devices remain safe and operational under any circumstances. With a no-load input current as low as 5mA, it maximizes efficiency even in standby mode. Our DIP Package operates within a wide ambient temperature range from -40°C to +105°C, making it suitable for various environments and conditions. It boasts an impressive high efficiency of up to 89%, ensuring optimal performance and energy savings.

The I/O isolation test voltage stands at a robust 1.5kVDC, providing reliable isolation and safety. Adhering to an industry-standard pin-out, our DIP Package integrates seamlessly into your existing designs. It is built to comply with international standards IEC62368, UL62368, and EN62368, ensuring high quality and safety.



Common specifications

Short circuit protection	Continuous
Operation temperature	-40°C ~ +105°C
Storage temperature	-55°C ~ +125°C
Storage humidity	95% RH (non-condensing)
MTBF: (MIL-HDBK-217F@25°C)	>3,500,000 hours
Case Material	DAP
Dimensions	12.7 x 6.8 x 10.16 mm
Weight	1.5g (typ.)
Cooling	Free air convection

Input specifications

Item	Test condition	Min	Typ	Max	Units
Voltage range	Vo, Io Nom		±10		%
Filter	Capacitor				

Example:

2D8A1_1205S1.5UP

2 = 2 Watt; D8 = DIP8; A1 = Series; 12 = 12Vin; 05 = 5Vout;
S = Single output; 1.5 = 1.5kVDC; U = Unregulated output;
P = Short circuit protection

Output specifications

Item	Test condition	Min	Typ	Max	Units
Output voltage accuracy	100% load			±5	%
Line regulation	For 1.0% of Vin			1.2	%
Load regulation (10% to 100% load)	5V		8	15	%
	9V		6	10	%
	12V		5	10	%
	15V		4	10	%
	24V		3	10	%
Ripple & noise	BW = DC to 20MHz		75	150	mVp-p
Switching frequency	at 5Vin		215		kHz
Full load, nominal input	at other Vin		250		kHz

Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Isolation voltage		1500			VDC
Isolation resistance	Test at 500VDC	1000			MΩ
Isolation capacitance	Input/Output capacitance 100kHz/0.1V		20		pF

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Product Selection Guide

Part Number	Input Voltage [VDC, Nom]	Output Voltage [VDC]	Output Current [mA]	Full Load Efficiency [% , Typ.]	Capacitive Load [μF, Max.]
2D8A1_0505S1.5UP	05	5	400	84	2400
2D8A1_0509S1.5UP	05	9	223	85	820
2D8A1_0512S1.5UP	05	12	167	85	470
2D8A1_0515S1.5UP	05	15	133	86	220
2D8A1_0524S1.5UP	05	24	84	87	100
2D8A1_1205S1.5UP	12	5	400	85	2400
2D8A1_1209S1.5UP	12	9	223	87	820
2D8A1_1212S1.5UP	12	12	167	87	470
2D8A1_1215S1.5UP	12	15	133	88	220
2D8A1_1224S1.5UP	12	24	84	89	100
2D8A1_1505S1.5UP	15	5	400	85	2400
2D8A1_1509S1.5UP	15	9	223	87	820
2D8A1_1512S1.5UP	15	12	167	87	470
2D8A1_1515S1.5UP	15	15	133	88	220
2D8A1_1524S1.5UP	15	24	84	89	100
2D8A1_2405S1.5UP	24	5	400	85	2400
2D8A1_2409S1.5UP	24	9	223	87	820
2D8A1_2412S1.5UP	24	12	167	87	470
2D8A1_2415S1.5UP	24	15	133	88	220
2D8A1_2424S1.5UP	24	24	84	89	100

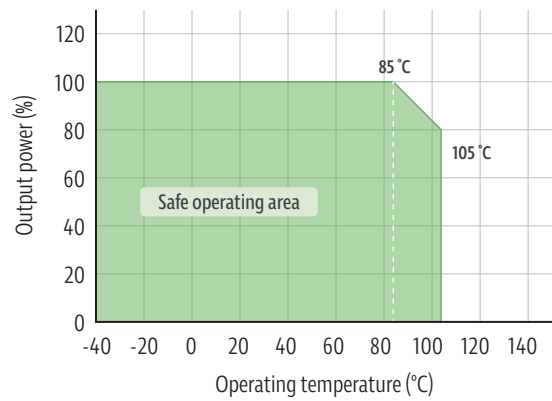
Part Number	Input Voltage [VDC, Nom]	Output Voltage [VDC]	Output Current [mA]	Full Load Efficiency [% , Typ.]	Capacitive Load [μF, Max.]
2D8A1_0505D1.5UP	05	±5	±200	82	±1200
2D8A1_0509D1.5UP	05	±9	±112	85	±330
2D8A1_0512D1.5UP	05	±12	±84	85	±330
2D8A1_0515D1.5UP	05	±15	±67	87	±220
2D8A1_0524D1.5UP	05	±24	±42	88	±47
2D8A1_1205D1.5UP	12	±5	±200	82	±1200
2D8A1_1209D1.5UP	12	±9	±112	85	±330
2D8A1_1212D1.5UP	12	±12	±84	87	±330
2D8A1_1215D1.5UP	12	±15	±67	88	±100
2D8A1_1224D1.5UP	12	±24	±42	89	±47
2D8A1_1505D1.5UP	15	±5	±200	82	±1200
2D8A1_1509D1.5UP	15	±9	±112	85	±330
2D8A1_1512D1.5UP	15	±12	±84	87	±330
2D8A1_1515D1.5UP	15	±15	±67	88	±100
2D8A1_1524D1.5UP	15	±24	±42	89	±47
2D8A1_2405D1.5UP	24	±5	±200	82	±1200
2D8A1_2409D1.5UP	24	±9	±112	85	±330
2D8A1_2412D1.5UP	24	±12	±84	87	±330
2D8A1_2415D1.5UP	24	±15	±67	88	±100
2D8A1_2424D1.5UP	24	±24	±42	89	±47

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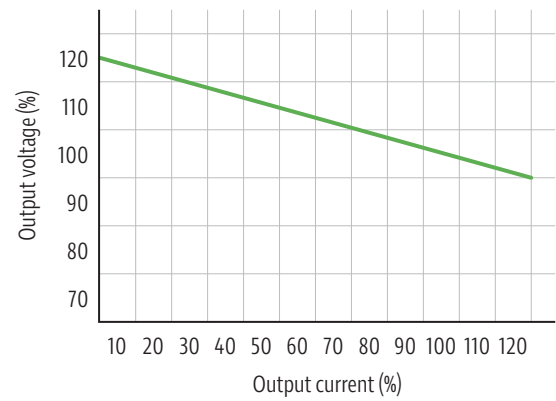
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Typical characteristics

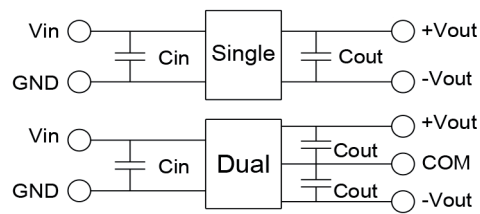
Temperature derating graph



Tolerance envelope graph

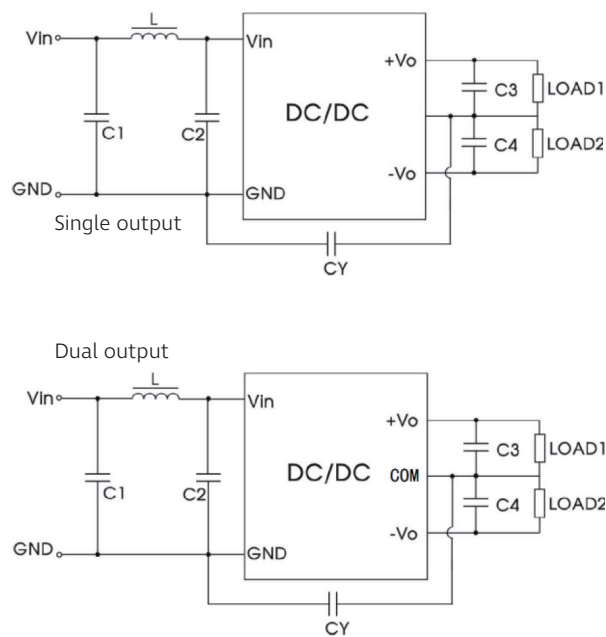


Recommended test circuit



Vin	Cin	Single Vout	Cout	Dual Vout	Cout
5VDC	4.7µF/25V	5Vdc	10µF/16V	±5Vdc	±4.7µF/16V
12VDC	2.2µF/25V	9VDC	2.2µF/16V	±9Vdc	±1µF/16V
15VDC	2.2µF/25V	12VDC	2.2µF/25V	±12Vdc	±1µF/25V
24VDC	1µF/50V	15VDC	1µF/25V	±15Vdc	±1µF/25V
		24VDC	1µF/25V	±24Vdc	±1µF/50V

EMC (CLASS B) compliance circuit



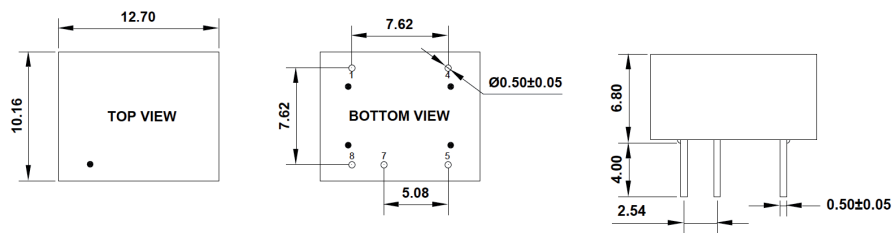
EMC recommended circuit value table

EMI	C1	4.7µF /50V
EMI	C2	4.7µF /50V
EMI	CY	1nF/4kV
EMI	C3, C4	Recommended test circuit
EMI	L	6.8µH

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Mechanical dimensions



UNIT: mm Unless otherwise specified, all tolerances are ± 0.25

Fig. 1

Pin-Out (8Pin-Single)	
Pin	Function
1	-Vin
4	+Vin
5	-Vout
7	+Vout

Pin-Out (8Pin-Dual)	
Pin	Function
1	-Vin
4	+Vin
5	-Vout
7	Com
8	-Vout