



## 2D16WA\_1.5RP Series

2W - Dual/Single Output - Wide Input - Isolated & Regulated DC-DC Converter

### DC-DC Converter

**2 Watt**

- ⊕ Miniature DIP package
- ⊕ 2:1 wide input voltage range
- ⊕ Operating temperature: -40°C to +85°C
- ⊕ 1500VDC isolation
- ⊕ No heat sink required
- ⊕ No external component required
- ⊕ Industry standard pinout
- ⊕ Internal SMD construction
- ⊕ Short circuit protection (SCP; automatic recovery)
- ⊕ RoHS Compliance

The 2D16WAA\_1.5RP series is specially designed for applications where a wide range input voltage power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:

- 1) Where the voltage of the input power supply is wide range (voltage range  $\leq 2:1$ )
- 2) Where isolation is necessary between input and output (isolation voltage  $\leq 1500\text{VDC}$ )
- 3) Where the regulation of the output voltage and the output ripple noise are demanded.



Common specifications	
Short circuit protection:	Continuous, automatic recovery
Filter:	Capacitor
Temperature rise at full load:	15°C TYP
Cooling:	Free air convection
Operation temperature range:	-40°C~+85°C
Storage temperature range:	-55°C ~+125°C
Lead temperature range:	300°C MAX, 1.5mm from case for 10 sec
Storage humidity range:	< 95%
Case material:	Plastic [UL94-V0]
MTBF:	>1,500,000 hours
Weight:	5.2g
Dimensions:	24.1x14.35x8.25mm

Output specifications						
Item	Test condition	Min	Typ	Max	Units	
Voltage tolerance				±2	%	
Line regulation	Regulated			±0.5	%	
Load regulation	Regulated			±0.8	%	
Temperature drift	Refer to recommended circuit			±0.03	%/°C	
Transient response setting time	50% load step change		350		µs	
Ripple & Noise	20MHz Bandwidth			100	mVp-p	
Switching frequency	full load, nominal input		100		KHz	

Isolation specifications						
Item	Test condition	Min	Typ	Max	Units	
Isolation voltage	Tested for 1 minute and 1mA max	1500			VDC	
Isolation resistance	Test at 500VDC	1000			MΩ	

#### Example:

**2D16WA\_1205S1.5RP**  
 2= 2Watt; D16= DIP16; W= Wide Input 2:1; A= Pinning;  
 12 VDC nominal= 9-18Vin; 5Vout; S= Single Output; 1.5= 1500VDC Isolation; R= Regulated Output; P= Short Circuit Protection

#### Note:

1. The load shouldn't be less than 10%, otherwise ripple will increase dramatically.
2. Operation under 10% load will not damage the converter; However, they may not meet all specification listed.
3. All specifications measured at Ta=25°C, humidity <75%, nominal input voltage and rated output load unless otherwise specified.
4. In this datasheet, all the test methods of indications are based on corporate standards.
5. Only typical models listed, other models may be different, please contact our technical person for more details.

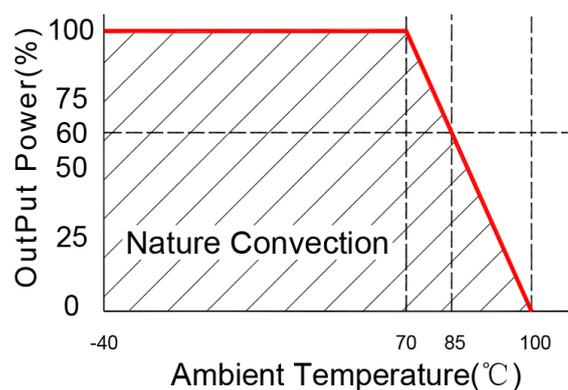
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Part Number	Input Voltage [VDC]		Output Voltage [VDC]	Current [mA, max.]	Efficiency [%, Typ.]
	Nominal	Range			
2D16WA_0503S1.5RP	5	4.5-9	3.3	500	70
2D16WA_0505S1.5RP	5	4.5-9	5	400	70
2D16WA_0512S1.5RP	5	4.5-9	12	167	75
2D16WA_0515S1.5RP	5	4.5-9	15	133	78
2D16WA_0524S1.5RP	5	4.5-9	24	84	80
2D16WA_1203S1.5RP	12	9-18	3.3	500	70
2D16WA_1205S1.5RP	12	9-18	5	400	75
2D16WA_1212S1.5RP	12	9-18	12	167	80
2D16WA_1215S1.5RP	12	9-18	15	133	80
2D16WA_1224S1.5RP	12	9-18	24	84	83
2D16WA_2403S1.5RP	24	18-36	3.3	500	70
2D16WA_2405S1.5RP	24	18-36	5	400	76
2D16WA_2412S1.5RP	24	18-36	12	167	80
2D16WA_2415S1.5RP	24	18-36	15	133	80
2D16WA_2424S1.5RP	24	18-36	24	84	83
2D16WA_0505D1.5RP	5	4.5-9	±5	±200	70
2D16WA_0512D1.5RP	5	4.5-9	±12	±83	75
2D16WA_0515D1.5RP	5	4.5-9	±15	±67	78
2D16WA_0524D1.5RP	5	4.5-9	±24	±42	80
2D16WA_1205D1.5RP	12	9-18	±5	±200	75
2D16WA_1212D1.5RP	12	9-18	±12	±83	80
2D16WA_1215D1.5RP	12	9-18	±15	±67	80
2D16WA_1224D1.5RP	12	9-18	±24	±42	83
2D16WA_2405D1.5RP	24	18-36	±5	±200	76
2D16WA_2412D1.5RP	24	18-36	±12	±83	80
2D16WA_2415D1.5RP	24	18-36	±15	±67	80
2D16WA_2424D1.5RP	24	18-36	±24	±42	83

\*Input voltage can't exceed this value, or will cause permanent damage.

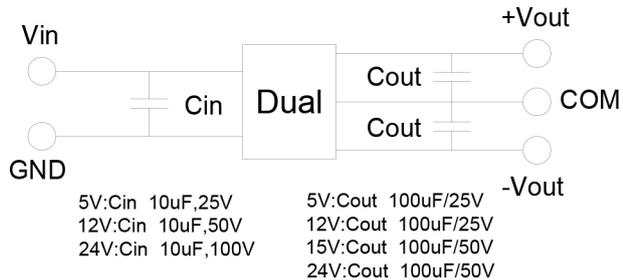
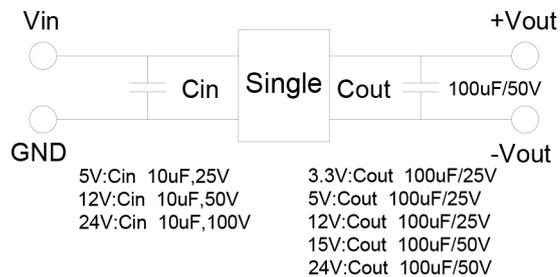
## Typical characteristics



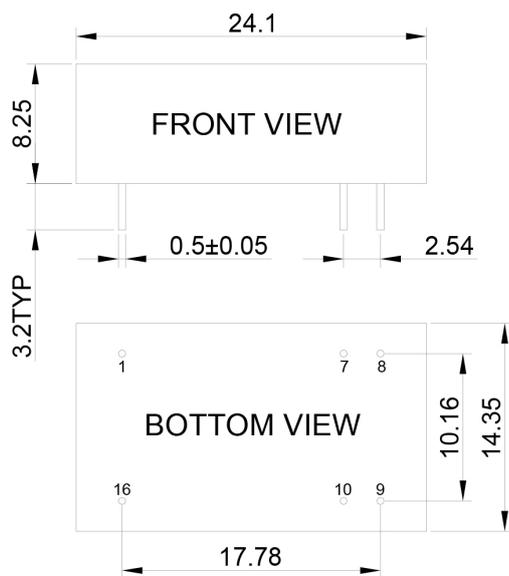
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### Recommended test circuit



### Mechanical dimensions



#### PIN connection

PIN	1	7	8	9	10	16
Single	-Vin	NC	NC	+Vout	-Vout	+Vin
Dual	-Vin	NC	COM	+Vout	-Vout	+Vin

#### Note:

Unit: mm[inch]

General tolerances: ±0.25mm [±0.010inch]