

10DPW_1.5 series

10W - Single/Dual Output - Wide Input - Isolated & Regulated DC-DC Converter

DC-DC Converter

10 Watt

- ⊕ Wide 2:1 input voltage range
- ⊕ Input/Output Isolation
Voltage: 1.5kVDC
- ⊕ Operating Temperature
Range: -40°C to +100°C
- ⊕ Short circuit protection (SCP)
- ⊕ Remote On/Off
- ⊕ High efficiency
- ⊕ 10W DIL package
- ⊕ Meet EN55022, Class A
(Radiation)
- ⊕ Shielded Metal Case with
Insulated Baseplate
- ⊕ RoHS Compliant
- ⊕ Customer Design Available

The 10DPW_1.5 Series are isolated 10W DC/DC converters. Designed with high efficiency, they allow the operating temperature range of these units to be -40°C to +85°C with industry-standard footprint. Further features include wide 2:1 input voltage range, remote on/off control, short-circuit protection and over voltage protection.

These converters are well suitable for battery operated equipment, measurement equipment, telecom, wireless network and industry control systems. Everywhere where isolated, tightly regulated voltages and compact size are required.



Common specifications	
Short circuit protection:	Hiccup, automatic recovery
Cooling:	Free air convection
Operation temperature range:	-40°C~+100°C, with derating
Storage temperature range:	-55°C~+125°C
Maximum case temperature:	95°C
Switching frequency:	400kHz typ.
Storage humidity range:	95% max.
Radiated emissions:	EN55022/Class A
Conducted emissions:	EN55022/Class A
Case material:	Five-Side Shielded Case
Potting material:	Epoxy (UL94V-0)
MTBF (MIL-HDBK-217F @25°C):	900,000 hours
Weight:	17.5g

Output specifications						
Item	Test condition	Min	Typ	Max	Units	
Minimum load	10% of full load					
Output voltage accuracy	Full load and nominal Vin			±2	%	
Overload protection			150		%	
Cross regulation	Dual (25%-100% load)			±5	%	
Line regulation			±0.5		%	
Load regulation	Single & Dual (F.L-25%F.L)		±0.5		%	
Ripple and noise	20MHz Bandwidth • 3-15V output • <15V output			100 1% of Vout	mVp-p mVp-p	
Transient response settling time	50% load step change		350		µs	

Input specifications						
Item	Test condition	Min	Typ	Max	Units	
Input filter	Pi Type					
Protection	Fuse recommended					
Input surge voltage (100ms max.)	• Nominal input (12V) • Nominal input (24V) • Nominal input (48V)		25 50 100		VDC	
Input reflected ripple current	Nominal Vin and full load		50		mAp-p	
Start-up time	Nominal Vin and constant resistive load		500		ms	
Remote ON/OFF	• Converter: ON • Converter: OFF		Open or 3.5V<Vr<12V Short or 0V<Vr<1.2V			
Sourcing current of remote control pin	Nominal Vin		<0.2		mA	
Idle input current (at Remote OFF state)	Nominal Vin		<2.5		mA	

Isolation specifications						
Item	Test condition	Min	Typ	Max	Units	
Isolation voltage	Input to output		1500		VDC	
Isolation resistance	Test at 500VDC	1000			MΩ	

Example:

10DPW_2415S1.5

10 = 10Watt; D = DIP; P = series; W = wide input (2:1) 18-36Vin;
15 = 15Vout; S = single output; 1.5 = 1500VDC isolation

Note:

1. Only typical model listed. Non-standard models will be different from the above, please contact us for more details.
2. All specifications are typical at nominal input, full load and 25°C unless otherwise stated.
3. In this datasheet, all the test methods of indications are based on corporate standards.

10DPW_1.5 series

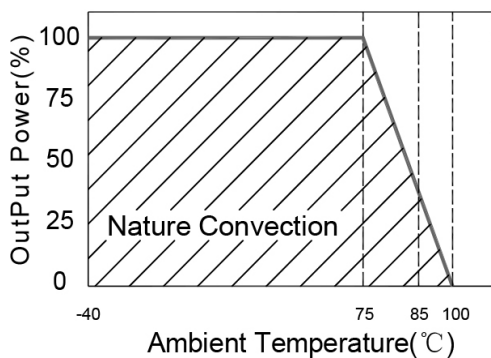
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Product Selection Guide

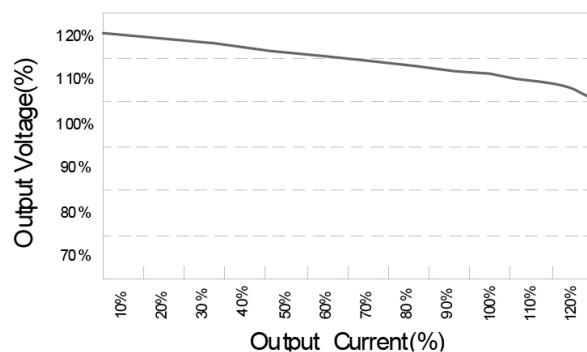
Part Number	Input Voltage [VDC] Range	Input Current [mA]		Output Voltage [VDC]	Output Current [mA] Full load	Efficiency [% Typ.]
		No load	Full load			
10DPW_1203S1.5	9-18	50	1006	3.3	3000	82
10DPW_1205S1.5	9-18	50	1016	5	2000	82
10DPW_1212S1.5	9-18	30	1004	12	833	83
10DPW_1215S1.5	9-18	30	1009	15	670	83
10DPW_2403S1.5	18-36	40	503	3.3	3000	82
10DPW_2405S1.5	18-36	40	508	5	2000	82
10DPW_2412S1.5	18-36	30	502	12	833	83
10DPW_2415S1.5	18-36	30	504	15	670	83
10DPW_4803S1.5	36-75	30	251	3.3	3000	82
10DPW_4805S1.5	36-75	30	254	5	2000	82
10DPW_4812S1.5	36-75	20	251	12	833	83
10DPW_4815S1.5	36-75	20	252	15	670	83
10DPW_1205D1.5	9-18	30	1004	±5	±1000	83
10DPW_1209D1.5	9-18	30	1004	±9	±555	86
10DPW_1212D1.5	9-18	30	1012	±12	±420	83
10DPW_1215D1.5	9-18	30	1024	±15	±340	83
10DPW_2405D1.5	18-36	30	502	±5	±1000	83
10DPW_2412D1.5	18-36	30	506	±12	±420	83
10DPW_2415D1.5	18-36	30	512	±15	±340	83
10DPW_4805D1.5	36-75	20	251	±5	±1000	83
10DPW_4812D1.5	36-75	20	253	±12	±420	83

Typical characteristics

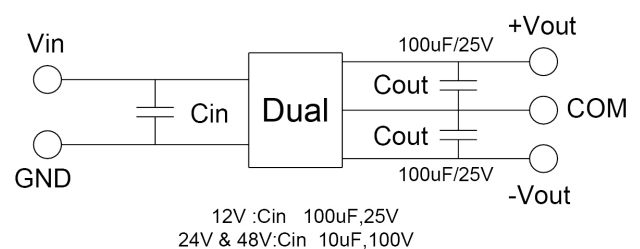
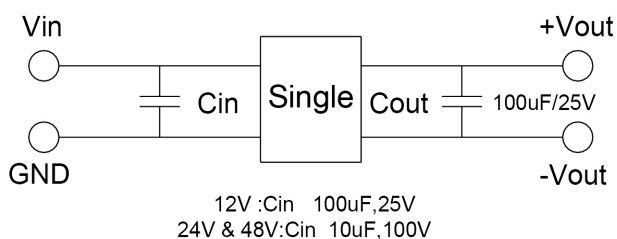
Temperature derating graph



Tolerance envelope graph



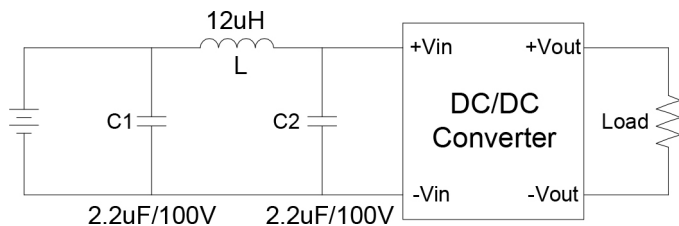
Recommended test circuit



10DPW_1.5 series

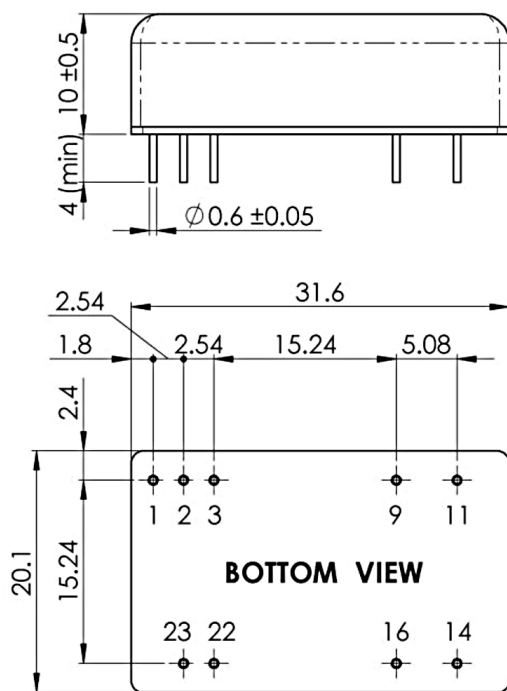
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External filter



Input filter components (C1, C2, L) are used to help meet conducted emissions (EN55022 class A) requirement for the module. These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.

Mechanical dimensions



Note:
Unit: mm[inch]
Tolerances: $\pm 0.5\text{mm}$ [$\pm 0.02\text{inch}$]
Pin size tolerance: $0.6\phi \pm 0.05\text{mm}$

PIN connection							
PIN	1	2, 3	9	11	14	16	22, 23
Single	Remote on/off	-Vin	NC	NC	+Vout	-Vout	+Vin
Dual	Remote on/off	-Vin	Common	-Vout	+Vout	Common	+Vin