

6DAMW4_6 series

6W - Single/Dual Output - 4:1 Ultra Wide Input - Isolated & Regulated
DIP DC-DC Converter



DC-DC Converter

6 Watt

- Industrial standard DIP-24 package
- Wide 4:1 input voltage range
- Safety meets IEC60601-1 for 2 x MOPP
- Creepage and clearance >8mm
- Low leakage current
- Over load protection
- Under voltage protection
- Short circuit protection

Introducing our cutting-edge 6DAMW4_6 series, designed with an industrial standard DIP-24 package for versatile and robust performance. This device boasts a wide 4:1 input voltage range, ensuring compatibility with various power sources. Engineered to meet IEC60601-1 safety standards for 2 x MOPP, it provides superior protection and reliability in medical and industrial applications.

With a creepage and clearance distance of over 8mm, our power supply offers enhanced insulation and safety. It features low leakage current, making it ideal for sensitive environments. Equipped with comprehensive protection mechanisms, including overload protection, under-voltage protection, and short-circuit protection, this power supply ensures uninterrupted and secure operation.



Common specifications

Short circuit protection:	Continuous, automatic recovery
Operation temperature range:	-40 ~ +100°C (with derating)
Storage temperature range:	-55°C ~ +125°C
Storage humidity range:	-55 ~ +125°C, 10 ~ 95% RH non-condensing
Soldering Temperature:	1.5mm from case of 3~5 sec./265°C(max.)
Case Temperature:	+105 °C max.
Vibration:	10~500Hz, 2G 10min./1cycle, period for 60 min. each along X, Y, Z axes
Safety Standards:	IEC60601-1 (LVD)
MTBF (MIL-HDBK-217F@25°C) ⁴ :	> 454, 000 hours
Case material:	Non-conductive plastic
Potting Material:	Epoxy (UL94V-0)
Cooling:	Free air convection
Dimensions:	31.80 × 20.30 × 12.20 mm
Weight:	17g typ.

Input specifications

Item		Typ.	Units
Voltage Range	9~36V, 18~75V		
Surge Voltage (100ms max.)	12Vin models: 24Vin models:	50 100	VDC VDC
Input filter	Fuse recommended		
Protection	Pi network		
Remote ON/OFF Control	Table 1		

Remote On/Off Control

Item	Test condition	Min	Typ	Max	Units
Control Input	PIN3				
Control Voltage	ON OFF	>+2.5VDC or Open Circuit <+0.8VDC or Jumper to PIN23&PIN24			
Converter Shutdown Idle Current	10mA				
Logic Compatibility	CMOS or Open Collector TTL				

Output specifications

Item	Test condition	Min	Typ	Max	Units
Voltage Accuracy				±2	%
Line Regulation ²				±0.5	%
Load Regulation ³				±0.5	%
Ripple & Noise ¹	20MHz Bandwidth			150	mVp-p
Temperature coefficient	(0~71°C)			0.05	%/°C
Switching frequency			250		kHz
Overload (150% typ.)	Protection type: recovers automatically after fault condition is removed				

Example:

6DAMW4_2405D6

6 = 6Watt; D = DIP; M = Medical; W4 = Wide input (4:1) 18-75Vin; 24 = 24Vin; 05 = 5Vout; D = Dual Output; 6 = 6000VAC isolation

Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Isolation Voltage ⁴		4200 6000			VAC VDC
Isolation resistance	500VDC / 25°C / 70% RH	1000			MΩ
Isolation capacitance			20		pF

EMC specifications

Emissions	CE	Conducted; EN55011
Emissions	RE	Radiated; EN55011 Class A
Immunity	ESD	ESD; EN61000-4-2 ±15KV air
Immunity	RS	Radiated Susceptibility; EN61000-4-3 10V/m
Immunity	EFT	EFT/Burst; EN61000-4-4 ±2KV
Immunity	Surge	Surge; EN61000-4-5; ±2kV Line-Line
Immunity	Conducted	Magnetic EN61000-4-6; 10Vrms (e.m.f.)
Immunity	Magnetic	EN61000-4-8; 30A/m

Note:

1. Measured with 1uF ceramic capacitor connect to the output pins. 2. High Line to Low Line. 3. Load Regulation is for output load current change from 20% to 100%. 4. 6000VDC for 1 minute. 5. 25% Step Load Change. 6. MIL-HDBK-217F @25 °C, Ground Benign. 7. Nominal input voltage. 8. Nominal input voltage, full load.

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Product Selection Guide

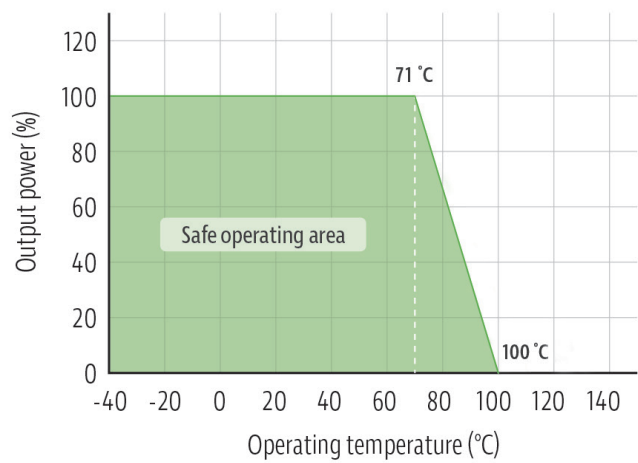
Part Number	Input Voltage [VDC]		Output Voltage [VDC]	Input Current [mA] ⁷		Output Current [mA]	Efficiency ⁸ [% , typ.]	Max. Capacitive Load [μF]
	Nominal	Range		Full load	No load			
6DAMW4_2405S6	24	9~36	5	625	20	1200	80	330uF
6DAMW4_2412S6	24	9~36	12	610	20	500	82	120uF
6DAMW4_2415S6	24	9~36	15	602	20	400	83	100uF
6DAMW4_4805S6	48	18~75	5	313	15	1200	80	330uF
6DAMW4_4812S6	48	18~75	12	298	15	500	84	120uF
6DAMW4_4815S6	48	18~75	15	298	15	400	84	100uF
6DAMW4_4824S6	48	18~75	24	292	15	250	85	100uF

Part Number	Input Voltage [VDC]		Output Voltage [VDC]	Input Current [mA] ⁷		Output Current [mA]	Efficiency ⁸ [% , typ.]	Max. Capacitive Load [μF]
	Nominal	Range		Full load	No load			
6DAMW4_2405D6	24	9~36	±5	625	20	±600	80	±330uF
6DAMW4_2412D6	24	9~36	±12	617	20	±250	81	±47uF
6DAMW4_2415D6	24	9~36	±15	610	25	±200	82	±47uF
6DAMW4_4805D6	48	18~75	±5	313	15	±600	80	±330uF
6DAMW4_4812D6	48	18~75	±12	308	15	±250	81	±47uF
6DAMW4_4815D6	48	18~75	±15	305	15	±200	82	±47uF

Note:
Efficiency and input current are measured at nominal input voltage and full load.
Other input to output voltages may be available.

Typical characteristics

Temperature derating graph

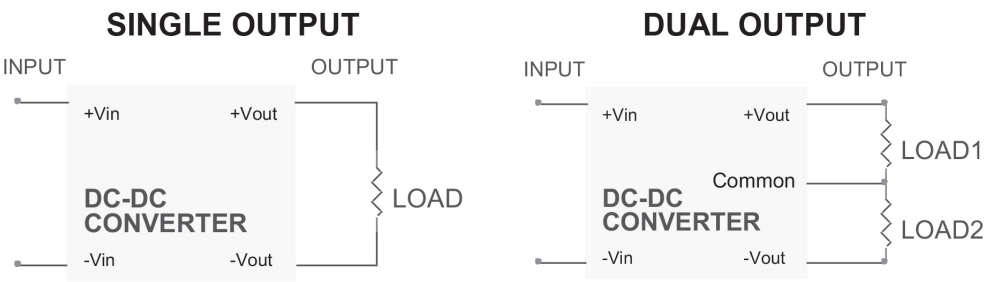


Specifications typical at Ta = 25 OC,
nominal input voltage, rated output
current unless otherwise specified.

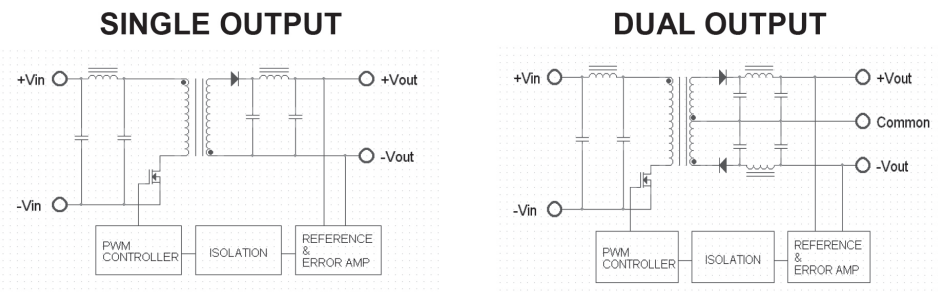
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Typical application

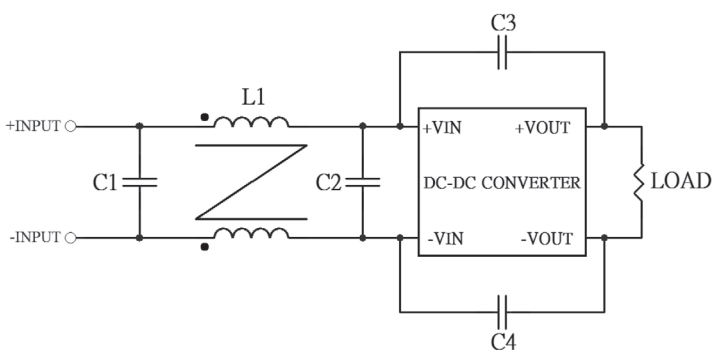


Simplified schematic



Recommended filter for EN55032

The components used in the under figure, together with the manufacture’s part numbers for these components, are as follows.



	C1	C2	C3	C4	L1
3DAMW4_12xxD6	10uF/50V	10uF/50V	X	X	450uH Common Choke
3DAMW4_24xxD6	4.7uF/100V	4.7uF/100V	X	X	450uH Common Choke

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Input fuse selection guide

9-36V INPUT VOLTAGE(VDC)	18-75V INPUT VOLTAGE(VDC)
2000mA Slow-Blow Type	1000mA Slow-Blow Type



Note: Certain applications may require the installation of external fuse in front of the input.

Mechanical dimensions

