2026/05/28 (A/1)

WB6-xxDxxMP Series

DC-DC Converter | 6W | 2:1 Wide input voltage, regulated Output | DIP24 | 1500VDC

Features

- International standard pins DIP24 package
- 2:1 wide input voltage range
- Operating temperature range:-40℃ to +85℃
- Isolation voltage: 1500VDC
- Full load efficiency: 87% (typ.)
- Output short circuit, over-current, and input under-voltage protection
- Designed to meet IEC/EN/BS EN/UL 62368

Product description

Industrial Automate Power Security

The WB6-xxDxxMP series is an isolated 6W DC-DC converter module with a 2:1 input voltage range. It features efficiency up to 87%, isolation voltage up to 1500VDC, and safe operation over an ambient temperature range of -40℃ to +85℃. It includes output short circuit, over-current, and input under-voltage protection, and is widely used inindustrial control, power, instrumentation, automotive, railway, and communication fields.

Selection Guide

Certification	Part No.	Input Voltage (VDC) Nominal (Range)	Output Voltage (VDC)	Output Current (mA) Max.	Full Load Efficiency %(typ.)	Capacitive Load (μF)Max.*
--	WB6-05D05MP	5（4.5～9）	±5.0	600	80	2200
	WB6-05D09MP	5（4.5～9）	±9.0	334	82	1000
	WB6-05D12MP	5（4.5～9）	±12.0	250	84	470
	WB6-05D15MP	5（4.5～9）	±15.0	200	84	470
	WB6-05D24MP	5（4.5～9）	±24.0	125	85	220
	WB6-12D05MP	9（9～18）	±5.0	600	82	2200
	WB6-12D09MP	9（9～18）	±9.0	334	85	1000
	WB6-12D12MP	9（9～18）	±12.0	250	86	470
	WB6-12D15MP	9（9～18）	±15.0	200	86	470
	WB6-12D24MP	9（9～18）	±24.0	125	87	220
	WB6-24D05MP	24（18～36）	±5.0	600	83	2200
	WB6-24D09MP	24（18～36）	±9.0	334	85	1000
	WB6-24D12MP	24（18～36）	±12.0	250	86	470
	WB6-24D15MP	24（18～36）	±15.0	200	86	470

Selection Guide

Certification	Part No.	Input Voltage (VDC) Nominal (Range)	Output Voltage (VDC)	Output Current (mA) Max.	Full Load Efficiency %(typ.)	Capacitive Load (μF)Max.*
--	WB6-24D24MP	24（18～36）	±24.0	125	87	220
	WB6-48D05MP	48（36～72）	±5	±600	82	2200
	WB6-48D09MP	48（36～72）	±9	±334	83	1000
	WB6-48D12MP	48（36～72）	±12	±250	84	470
	WB6-48D15MP	48（36～72）	±15	±200	86	470
	WB6-48D24MP	48（36～72）	±24	±125	87	220

Note:1. The input voltage should not exceed this value, otherwise it may cause permanent and irreparable damage.

2. The above efficiency is measured at nominal input voltage and rated output load.

3. *The capacitive load of the two outputs for positive and negative outputs is the same.

Input Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Impulse Voltage (1sec. max.)	5VDC Input	-0.7	--	15	VDC
	12VDC Input	-0.7	--	30	VDC
	24VDC Input	-0.7	--	50	VDC
	48VDC Input	-0.7	--	90	VDC
Input Under-voltage Protection	5VDC Input	3.8	3.9	4	VDC
	12VDC Input	7.3	7.5	7.7	VDC
	24VDC Input	14.7	15.1	15.5	VDC
	48VDC Input	30	31	32	VDC
Input Under-voltage Recovery	5VDC Input	4.03	4.13	4.23	VDC
	12VDC Input	8	8.2	8.4	VDC
	24VDC Input	16.3	16.7	17.1	VDC
	48VDC Input	31.6	32.6	33.6	VDC
Input Filter		Capacitor Filter and Pi Filter			
Hot Plug		Unavailable			

Output Characteristics

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Output Voltage Accuracy	5%~100% Load	Vo1	--	±1.0	±2.0	%
		Vo2	--	±2.0	±3.0	%
Line Regulation	Full load Io=100%		--	±0.25	±0.5	%
Load Regulation	10% to 100% Load		--	±0.5	± 1.0	%
Ripple & Noise	20MHz Bandwidth		--	50	100	mVp-p
Temperature Coefficient	Full Load		--	±0.03	--	%/℃
Short Circuit Protection	Input Voltage Range		Hiccup Protection, Self-Recovery			

General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Isolation Voltage	Input-Output, Test Time1 minute, leakage current ⩽ 1mA	1500	--	--	VDC
Insulation Resistance	Input-Output, Insulation Voltage 500VDC	1000	--	--	MΩ
Isolation Capacitance	Input-Output,100KHz/0.1V	--	500	--	pF
Operating Temperature	See figure below: Temperature Derating Curve	-40	--	85	℃
Storage Temperature		-55	--	125	℃
Soldering Profile	Soldering point is 1.5mm away from case	--	260	300	℃
Switching Frequency		300	330	360	kHz
MTBF	MIL-HDBK-217F@25℃	>3000Kh			

Mechanical Specifications

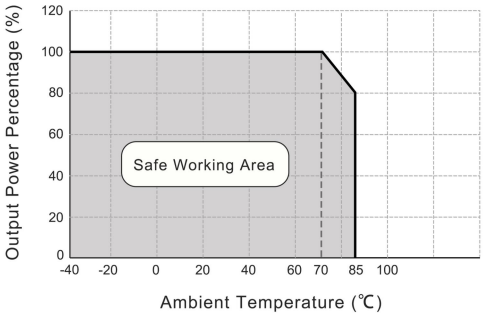
Case Material	Nickel-plated copper, five-sided shielding
Mechanical Dimensions	31.80 * 20.32 * 10.20mm
Weight	18.00g(typ.)
Cooling Method	Free air convection

Electromagnetic Compatibility (EMC)

EMI	CE	CISPR32/EN55032 CLASS B (Recommended circuit see Figure 2-3)	
	RE	CISPR32/EN55032 CLASS B (Recommended circuit see Figure 2-3)	
EMS	ESD	IEC/EN61000-4-2 Contact±4KV	perf. Criteria B
	RS	IEC/EN61000-4-3 10V/m	perf. Criteria A
	EFT	IEC/EN61000-4-4 ±2KV (Recommended circuit see Figure 2-3)	perf. Criteria B
	Surge	IEC/EN61000-4-5 line to line±2KV (Recommended circuit see Figure 2-3)	perf. Criteria B
	CS	IEC/EN61000-4-6 3 Vr.m.s	perf. Criteria A

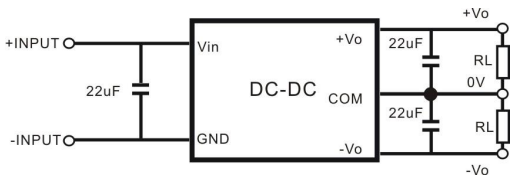
Product Characteristic Curve

Temperature Derating Curve



Design Reference - Application Circuit

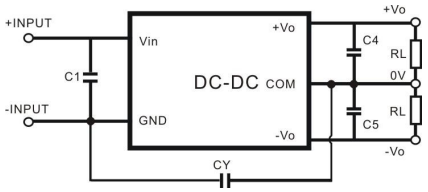
Application circuit 1



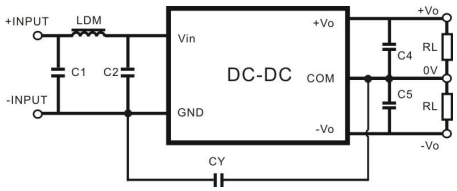
Note: All DC-DC converters in this series were tested using the recommended circuit shown in Application circuit 1 before delivery.

Design Reference - EMC Solutions - Recommended Circuits

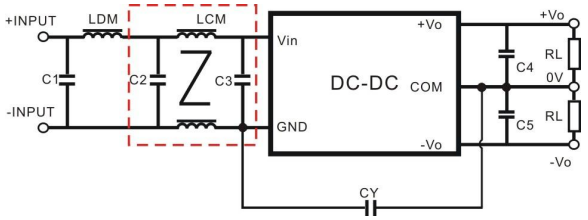
EMI Solutions - Recommended Circuits



(EMC Recommended Circuit 2-1)



(EMC Recommended Circuit 2-2)



(EMC Recommended Circuit 2-3)

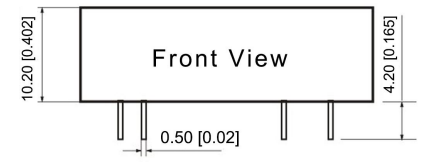
	Model	Recommended Reference Value
Recommended parameter values for EMC solution circuits	C1	10uF~47uF, Ceramic Capacitor X5R or X7R
	C2	10uF~47uF, Ceramic Capacitor X5R or X7R
	C3	10uF~47uF, Ceramic Capacitor X5R or X7R
	C4	10uF~47uF, Ceramic Capacitor X5R or X7R
	C5	10uF~47uF, Ceramic Capacitor X5R or X7R
	CY	1nF/2KV, Ceramic Capacitor X5R or X7R
	LDM	1uH~4.7uH, Power Inductor
	LCM	3.3mH, R10K, B10 Material

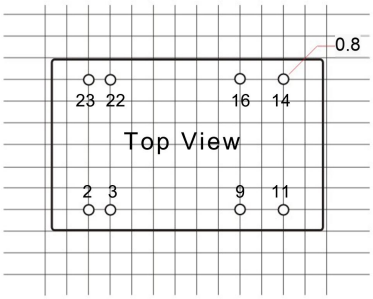
1. Unless otherwise specified, all data in this document are measured at Ta=25℃, humidity<75%, nominal input voltage, and rated output load.
2. The sealing material and case of this series comply with UL94V-0 flame retardant standard.

Dimensions and Recommended Layout

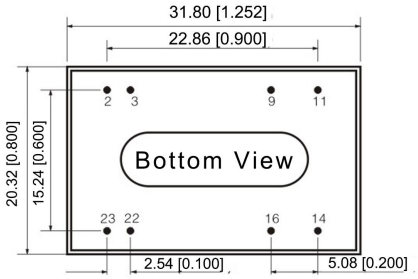
WB6-xxDxxMP Dimensions and Recommended Layout

Third Angle Projection





The grid distance size is 2.54mm*2.54mm



Pin	Function
22,23	+VIN
2,3	-VIN
9,16	0V
14	+Vo
11	-Vo

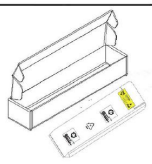
Note:
Size unit: mm [inch]
Pin diameter tolerance: ±0.10 [±0.004]
Unmarked dimensional tolerance: ±0.50 [±0.020]

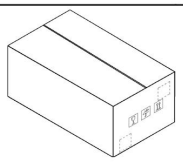
Packaging Information

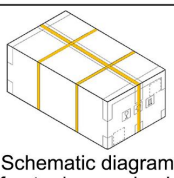
Model Series (Tube Packaging)	Quantity per Tube (pcs/tube)	Quantity per Anti-static Bag (pcs/bag)	Inner Carton Quantity (pcs/carton)	Full Carton Quantity (pcs/carton)(pcs)
WB6-xxDxxMP	16	80	320	1280

The schematic diagram of tube packaging is shown below:


Tube packaging


Electrostatic bag packaging


Outer cardboard packaging


Schematic diagram of outer box packaging

Product precautions

1. The input voltage should not exceed the specified range value, otherwise it may cause permanent and irreparable damage.
2. It is recommended to use at a load of over 5%. If the load is below 5%, the ripple index of the product may exceed the specifications, but it does not affect the reliability of the product.
3. The maximum capacitive load is tested within the input voltage range and under full load conditions.
4. Unless otherwise specified, all indicators in this manual are measured at Ta=25 ℃, humidity<75% RH, nominal input voltage, and output rated load.
5. All indicator testing methods in this manual are based on our company's corporate standards.
6. Our company can provide product customization, and specific requirements can be directly contacted by our technical personnel.

Product specifications are subject to change without prior notice.

Manufacturer contact information

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