

UFA_MP-6W & UFB_MP-6W Series 6W, WIDE INPUT, ISOLATED & REGULATED DUAL & SINGLE OUTPUT DC-DC CONVERTER



RoHS

FEATURES

- DIP package
- Efficiency up to 86%
- 4:1 wide input voltage range
- 1.5KVDC input/output isolation
- Continuous short circuit protection
- Operating temperature: -40°C ~ +85°C
- Internal SMD construction
- Metal shielding package
- No heat sink required
- Industry standard pinout
- MTBF>1,000,000 hours
- RoHS Compliance

APPLICATIONS

The UFA_MP-6W & UFB_MP-6W series are 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 $\leq 4:1$);
- 2) Where isolation is necessary between input and output (Isolation Voltage ≤ 1500 VDC);
- 3) Where the regulation of the output voltage and the output ripple noise are demanded.

PRODUCT PROGRAM

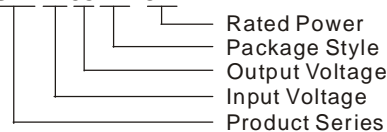
Part Number	Input			Output			Efficiency (% , Typ.)
	Voltage (VDC)			Voltage (VDC)	Current (mA)		
	Nominal	Range	Max.*		Max.	Min.	
UFA2405MP-6W	24	9-36	40	±5	±600	±60	80
UFA 2412MP-6W				±12	±250	±25	80
UFA 2415MP-6W				±15	±200	±20	82
UFA 2424MP-6W ^Δ				±24	±125	±13	83
UFB2403MP-6W				3.3	1500	150	78
UFB2405MP-6W				5	1200	120	80
UFB2412MP-6W				12	500	50	82
UFB2415MP-6W				15	400	40	82
UFB2424MP-6W				24	250	25	83
UFA4805MP-6W ^Δ				48	18-75	80	±5
UFA4812MP-6W	±12	±250	±25				82
UFA4815MP-6W	±15	±200	±20				84
UFA4824MP-6W ^Δ	±24	±125	±13				85
UFB4803MP-6W ^Δ	3.3	1500	150				76
UFB4805MP-6W	5	1200	120				80
UFB4812MP-6W	12	500	50				84
UFB4815MP-6W	15	400	40				85
UFB4824MP-6W ^Δ	24	250	25				86

^Δ Off production;

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

MODEL SELECTION

UFA2405MP-6W



Rated Power
Package Style
Output Voltage
Input Voltage
Product Series

COMMON SPECIFICATIONS

Item	Test Conditions	Min.	Typ.	Max.	Units
Storage humidity		--	--	95	%
Operating temperature		-40	--	85	°C
Storage temperature		-55	--	125	
Maximum Case temp.	On working temperature	--	75	--	
Lead temperature	1.5mm from case for 10 seconds	--	--	300	
Cooling		Free air convection			
Short circuit protection		Continuous, automatic recovery			
Case material		Copper, nickel plated			
MTBF	M1L-HDBK-217F	1000	--	--	k hours
Weight		--	17	--	g

MORNSUN Science & Technology co.,Ltd.

Address: 2th floor 6th building, Huangzhou Industrial District, Guangzhou, China
Tel: 86-20-38601850
Fax: 86-20-38601272
[Http://www.mornsun-power.com](http://www.mornsun-power.com)

ISOLATION SPECIFICATIONS

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

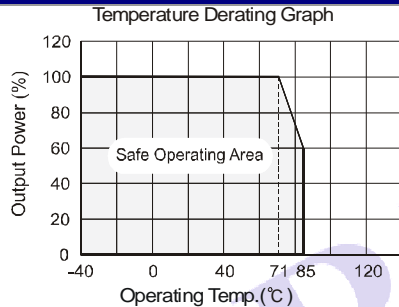
OUTPUT SPECIFICATIONS

Item	Test Conditions	Min.	Typ.	Max.	Units
Output power	See product program	0.6	--	6	W
Line regulation(at full load)	Input voltage from low to high	--	±0.2	±0.5	%
Load regulation	From 10% to 100% load	--	±0.5	±2*	
Positive voltage accuracy	Refer to recommended circuit	--	±1	±3	
Negative voltage accuracy	Refer to recommended circuit	--	±3	±5	
Temperature Drift(Vout)	Refer to recommended circuit	--	0.02	--	%/°C
Ripple**	20MHz bandwidth	--	30	50	mVp-p
Noise**	20MHz bandwidth	--	100	300	
Switching frequency	100% load, input voltage range	--	300	--	kHz

* Dual output models unbalanced load: ±5%.

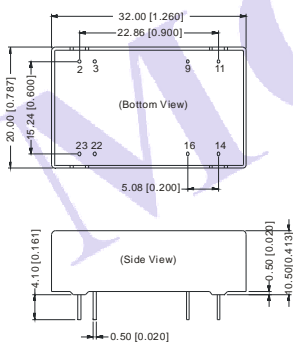
**Test ripple and noise by "parallel cable" method. See detailed operation instructions at Testing of Power Converter section, application notes.

TYPICAL CHARACTERISTICS



OUTLINE DIMENSIONS & PIN CONNECTIONS

MECHANICAL DIMENSIONS

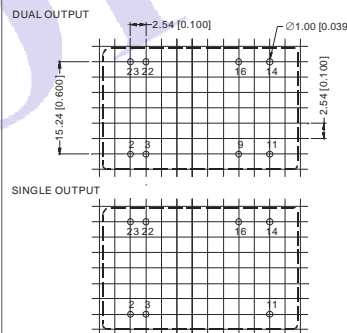


Note:
Unit:mm[inch]
Pin section tolerances:±0.10mm[±0.004inch]
General tolerances:±0.25mm[±0.010inch]

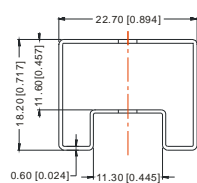
Pin	Single	Dual
2,3	GND	GND
9	No Pin	0V
11	NC	-Vo
14	+Vo	+Vo
16	0V	0V
22,23	Vin	Vin

NC: No connection

RECOMMENDED FOOTPRINT



TUBE OUTLINE DIMENSIONS



Note:
Unit :mm[inch]
General tolerances: ±0.50mm[±0.020inch]
L=530mm[20.866inch] Tube Quantity: 15pcs
L=220mm[8.661inch] Tube Quantity: 6pcs

Note:

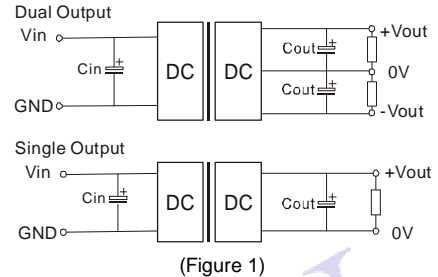
- The load shouldn't be less than 10%, otherwise ripple will increase dramatically.
- Operation under 10% load will not damage the converter; However, they may not meet all specification listed.
- All specifications measured at Ta=25°C, humidity<75%, nominal input voltage and rated output load unless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

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APPLICATION NOTE

Recommended Circuit

All the UFA_MP-6W & UFB_MP-6W series have been tested according to the following recommended testing circuit before leaving factory. This series should be tested under load. Never be tested under no load (see Figure 1).



If you want to further decrease the output ripple, you can increase capacitance properly or choose capacitors with low ESR. However, the capacitance should not be too high (Table 1).

Recommended capacitance (Table 1)

Output Voltage	Capacitance	
	Cout	Cin(24V, 48V input)
Single	3.3V,5V	220μF
	12V,15V	100μF
	24V	47μF
Dual	±5V	±100μF
	±12V,±15V	±47μF
	±24V	±22μF