MICRODC
Professional Power Module

MA-XD-1W5&MB-XD-1W5 Series

1000VDC Isolated 1.5W Dual&single output DIP24 Converters



FEATURES

- ◆1.5 WATTS REGULATED OUTPUT POWER
- ◆LOW OUTPUT RIPPLE & NOISE
- ◆PI TYPE INPUT FILTER
- ◆1000VDC ISOLATION VOLTAGE
- ◆HIGH EFFICIENCY UP TO 78%
- ◆STANDARD 24 PIN DIP PACKAGE
- ◆FIVE-SIDED EMI SHIELD

MODEL SELECTION

MA①05②05③-X④D⑤-1W5⑥

①Product Series ②Intput Voltage
③Output Voltage ④Fixed Input
⑤DIP24 Package Style ⑥Rated Power

APPLICATIONS

The MA-XD-1W5&MB-XD-1W5 series offer 1.5 watts of output power from a package in an IC compatible 24 pin DIP configuration without derating to 71℃ ambient temperature.MA-XD-1W5&MB-XD-1W5 series have input voltage of 4.5-5.5,10.8-13.2,21.6-26.4&43.2-52.5VDC.

MA-XD-1W5&MB-XD-1W5 features 1000VDC of isolation voltage. A safety designed meet to EN60950-1 and UL60950-1. All models are particularly suited to telecommunications, industrial, mobile telecom and test equipment applications.

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CE REACH

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OUTPUT SPECIFICATIONS

Output power			1.5 Watts max
Voltage accuracy	Full load and nominal Vin		±4
Minimum load			0%
Line regulation	LL to HL at Full Load		±0.3%
Load regulation	25% to 100% FL	MA05 output	± 1.5
		others	± 0.5
Cross regulation	Asymmetrical load 25% / 100% FL		±5%
Ripple and noise	20MHz bandwidth		50mVp-p
Temperature coefficient			±0.02% /℃, max
Short circuit protection			Short term

INPUT SPECIFICATIONS

Input voltage range	5V nominal input	4.5 - 5.5VDC
	12V nominal input	10.8 - 13.2VDC
	24V nominal input	21.6 - 26.4VDC
	48V nominal input	43.2 - 52.5VDC
Input filter		Pi type

GENERAL SPECIFICATIONS

Efficiency	See table
Isolation voltage	1000VDC, min
Isolation resistance	10^9ohms, min
Isolation capacitance	30pF, max
Switching frequency	20KHz, min
Design meet safety standard	IEC60950-1, UL60950-1,EN60950-1
Case material	Nickel-coated copper
Base material	Non-conductive black plastic
Potting material	Epoxy (UL94-V0)
Dimensions	1.25 X 0.80 X 0.40 Inch (31.8 X 20.3 X 10.2 mm)
Weight	16g (0.55oz)
MTBF (Note 1)	5.531 x 10^6 hrs

ENVIRONMENTAL SPECIFICATIONS

Operating temperature range		-25℃ ~ +71℃
Maximum case temperature		+100℃
Storage temperature range		-55℃ ~ +105℃
Thermal impedance	Nature convection	20℃/watt
Thermal shock		MIL-STD-810D
Vibration		10~55Hz, 10G, 30minutes along X,Y and Z
Relative humidity		5% to 95% RH

EMC CHARACTERISTICS

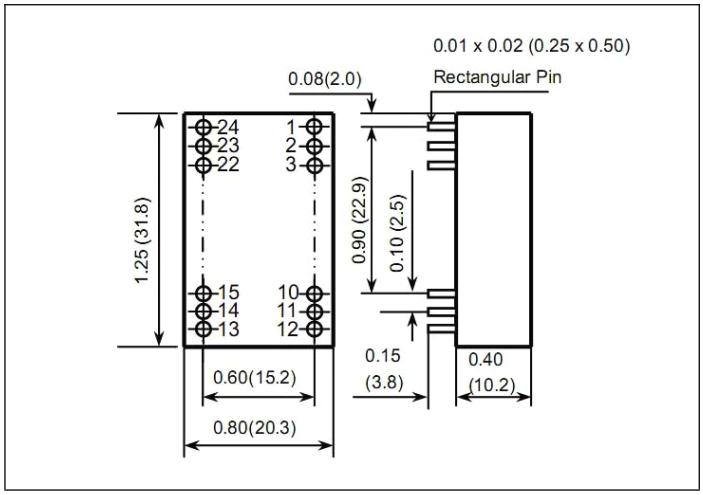
Conducted emissions	EN55022	Class A
Radiated emissions	EN55022	Class A
ESD	EN61000-4-2	Perf. Criteria
Radiated immunity	EN61000-4-3	Perf. Criteria
Fast transient	EN61000-4-4	Perf. Criteria B
Surge	EN61000-4-5	Perf. Criteria B
Conducted immunity	EN61000-4-6	Perf. Criteria A

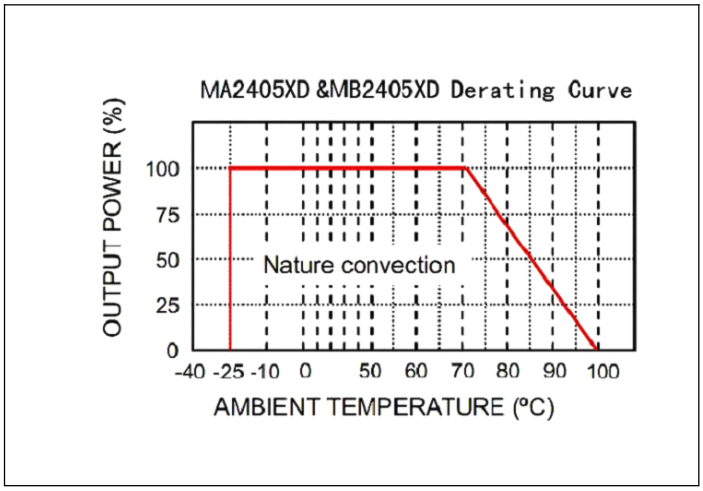
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MA-XD-1W5&MB-XD-1W5 Series

Model Number	Input Range	Output Voltage	Output Current	Input Current[2]	Eff[3] (%)	Capacitor Load max[4]
MB0505XD-1W5	4.5 – 5.5 VDC	5 VDC	300mA	405.4mA	74	470uF
MB0512XD-1W5	4.5 – 5.5 VDC	12 VDC	125mA	162.3mA	77	330uF
MB0515XD-1W5	4.5 – 5.5 VDC	15 VDC	100mA	128.2mA	78	330uF
MA0505XD-1W5	4.5 – 5.5 VDC	±5 VDC	200mA/-100mA	214.3mA	70	330uF
MA0512XD-1W5	4.5 – 5.5 VDC	±12 VDC	±60mA	85.6mA	73	110uF
MA0515XD-1W5	4.5 – 5.5 VDC	±15 VDC	±50mA	66.7mA	75	110uF
MB1205XD-1W5	10.8 – 13.2 VDC	5 VDC	300mA	416.7mA	72	470uF
MB1212XD-1W5	10.8 – 13.2 VDC	12 VDC	125mA	168.9mA	74	330uF
MB1215XD-1W5	10.8 – 13.2 VDC	15 VDC	100mA	133.3mA	75	330uF
MA1205XD-1W5	10.8 – 13.2 VDC	±5 VDC	200mA/-100mA	220.6mA	68	330uF
MA1212XD-1W5	10.8 – 13.2 VDC	±12 VDC	±60mA	89.3mA	70	110uF
MA1215XD-1W5	10.8 – 13.2 VDC	±15 VDC	±50mA	69.4mA	72	110uF
MB2405XD-1W5	21.6 – 26.4 VDC	5 VDC	300mA	434.8mA	69	470uF
MB2412XD-1W5	21.6 – 26.4 VDC	12 VDC	125mA	178.6mA	70	330uF
MB2415XD-1W5	21.6 – 26.4 VDC	15 VDC	100mA	140.8mA	71	330uF
MA2405XD-1W5	21.6 – 26.4 VDC	±5 VDC	200mA/-100mA	223.9mA	67	330uF
MA2412XD-1W5	21.6 – 26.4 VDC	±12 VDC	±60mA	90.6mA	69	110uF
MA2415XD-1W5	21.6 – 26.4 VDC	±15 VDC	±50mA	69.4mA	72	110uF
MB4805XD-1W5	43.2 – 52.5VDC	5 VDC	300mA	422.5mA	71	470uF
MB4812XD-1W5	43.2 – 52.5VDC	12 VDC	125mA	171.2mA	73	330uF
MB4815XD-1W5	43.2 – 52.5VDC	15 VDC	100mA	135.1mA	74	330uF
MA4805XD-1W5	43.2 – 52.5VDC	±5 VDC	200mA/-100mA	227.3mA	66	330uF
MA4812XD-1W5	43.2 – 52.5VDC	±12 VDC	±60mA	91.9mA	68	110uF
MA4815XD-1W5	43.2 – 52.5VDC	±15 VDC	±50mA	71.4mA	70	110uF

Note
1. BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40℃. (Ground fixed and controlled environment)
2. Maximum value at nominal input voltage and full load of standard type.
3. Typical value at nominal input voltage and full load.
4. Test by minimum Vin and constant resistive load.





DIP PIN CONNECTION

PIN	SINGLE DIP24		PIN
1	+ INPUT	+ INPUT	24
2	NC	NC	23
3	NC	NC	22
10	-OUTPUT	- OUTPUT	15
11	+OUTPUT	+OUTPUT	14
12	- INPUT	- INPUT	13

PIN	DUAL DIP24		PIN
1	+ INPUT	+ INPUT	24
2	- OUTPUT	- OUTPUT	23
3	COMMON	COMMON	22
10	COMMON	COMMON	15
11	+OUTPUT	+OUTPUT	14
12	- INPUT	- INPUT	13