



FEATURES

- ◆ 3 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

MA^①05^②05^③-X^④D^⑤-3W^⑥

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

APPLICATIONS

The MA-XD-3W&MB-XD-3W series offer 3 watts of output power from a package in an IC compatible 24 pin DIP configuration without derating to 71°C ambient temperature. MA-XD-3W & MB-XD-3W series have input voltage of 4.5-5.5, 10.8-13.2, 21.6-26.4 & 43.2-52.5VDC. MA-XD-3W&MB-XD-3W 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.

OUTPUT SPECIFICATIONS

Output power		3 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 others
		±1.5 ±0.5
Cross regulation	Asymmetrical load 25% / 100% FL	±5%
Ripple and noise	20MHz bandwidth	50mVp-p
Temperature coefficient		±0.02%/°C, 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 ⁹ ohms, 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°C ~ +71°C
Maximum case temperature		+100°C
Storage temperature range		-55°C ~ +105°C
Thermal impedance	Nature convection	20°C/watt
Thermal shock		MIL-STD-810D
Vibration		10~55Hz, 10G, 30minutes along X,Y and Z
Relative humidity		5% to 95% RH

EMC CHARACTERISTICS

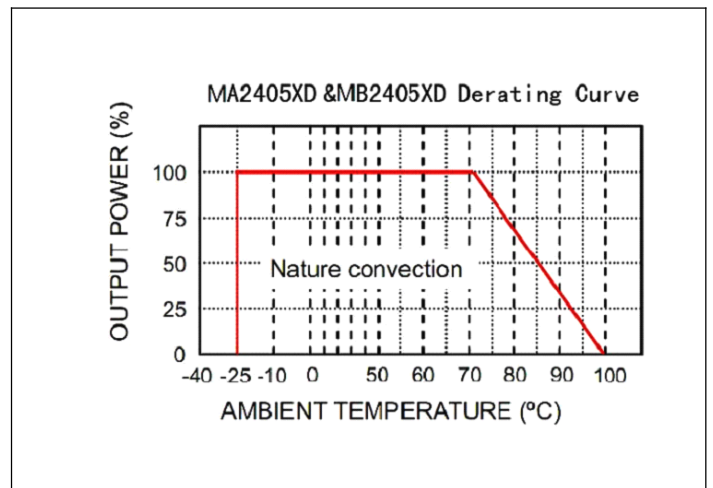
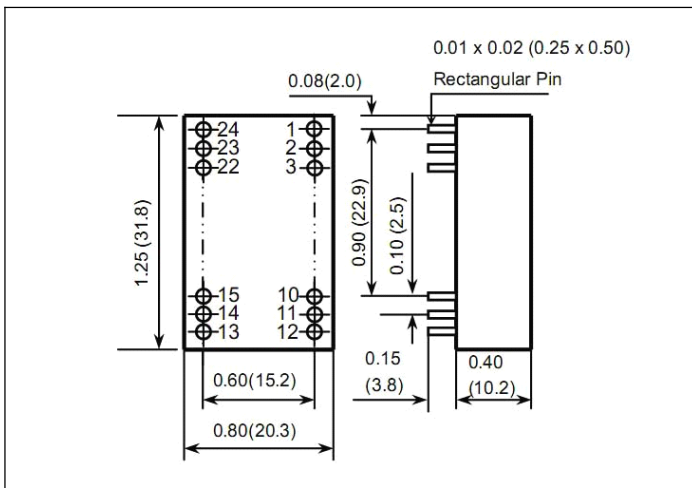
Conducted emissions	EN55022	Class A
Radiated emissions	EN55022	Class A
ESD	EN61000-4-2	Perf. Criteria B
Radiated immunity	EN61000-4-3	Perf. Criteria A
Fast transient	EN61000-4-4	Perf. Criteria B
Surge	EN61000-4-5	Perf. Criteria B
Conducted immunity	EN61000-4-6	Perf. Criteria A



Model Number	Input Range	Output Voltage	Output Current	Input Current ⁽²⁾	Eff ⁽³⁾ (%)	Capacitor Load max ⁽⁴⁾
MB0505XD-3W	4.5 – 5.5 VDC	5 VDC	600mA	810mA	74	470uF
MB0512XD-3W	4.5 – 5.5 VDC	12 VDC	250mA	779mA	77	330uF
MB0515XD-3W	4.5 – 5.5 VDC	15 VDC	200mA	769mA	78	330uF
MA0505XD-3W	4.5 – 5.5 VDC	± 5 VDC	400mA/-200mA	857mA	70	330uF
MA0512XD-3W	4.5 – 5.5 VDC	± 12 VDC	± 125mA	822mA	73	110uF
MA0515XD-3W	4.5 – 5.5 VDC	± 15 VDC	± 100mA	800mA	75	110uF
MB1205XD-3W	10.8 – 13.2 VDC	5 VDC	600mA	347mA	72	470uF
MB1212XD-3W	10.8 – 13.2 VDC	12 VDC	250mA	338mA	74	330uF
MB1215XD-3W	10.8 – 13.2 VDC	15 VDC	200mA	333mA	75	330uF
MA1205XD-3W	10.8 – 13.2 VDC	± 5 VDC	400mA/-200mA	368mA	68	330uF
MA1212XD-3W	10.8 – 13.2 VDC	± 12 VDC	± 125mA	357mA	70	110uF
MA1215XD-3W	10.8 – 13.2 VDC	± 15 VDC	± 100mA	347mA	72	110uF
MB2405XD-3W	21.6 – 26.4 VDC	5 VDC	600mA	181mA	69	470uF
MB2412XD-3W	21.6 – 26.4 VDC	12 VDC	250mA	179mA	70	330uF
MB2415XD-3W	21.6 – 26.4 VDC	15 VDC	200mA	176mA	71	330uF
MA2405XD-3W	21.6 – 26.4 VDC	± 5 VDC	400mA/-200mA	187mA	67	330uF
MA2412XD-3W	21.6 – 26.4 VDC	± 12 VDC	± 125mA	181mA	69	110uF
MA2415XD-3W	21.6 – 26.4 VDC	± 15 VDC	± 100mA	174mA	72	110uF
MB4805XD-3W	43.2 – 52.5VDC	5 VDC	600mA	88mA	71	470uF
MB4812XD-3W	43.2 – 52.5VDC	12 VDC	250mA	86mA	73	330uF
MB4815XD-3W	43.2 – 52.5VDC	15 VDC	200mA	84mA	74	330uF
MA4805XD-3W	43.2 – 52.5VDC	± 5 VDC	400mA/-200mA	95mA	66	330uF
MA4812XD-3W	43.2 – 52.5VDC	± 12 VDC	± 125mA	92mA	68	110uF
MA4815XD-3W	43.2 – 52.5VDC	± 15 VDC	± 100mA	89mA	70	110uF

Note

1. BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40°C. (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.



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