



### FEATURES

- ◆ 6 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<sup>①</sup>05<sup>②</sup>05<sup>③</sup>-X<sup>④</sup>D<sup>⑤</sup>-6W<sup>⑥</sup>

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

### APPLICATIONS

The MA-XD-6W&MB-XD-6W series offer 6 watts of output power from a package in an IC compatible 24 pin DIP configuration without derating to 71°C ambient temperature. MA-XD-6W & MB-XD-6W series have input voltage of 4.5-5.5, 10.8-13.2, 21.6-26.4&43.2-52.5VDC. MA-XD-6W&MB-XD-6W 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		6 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 <sup>9</sup> 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 <sup>6</sup> 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

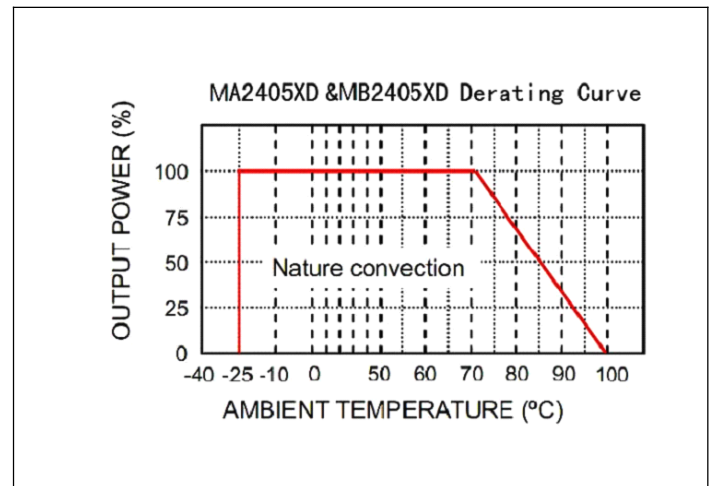
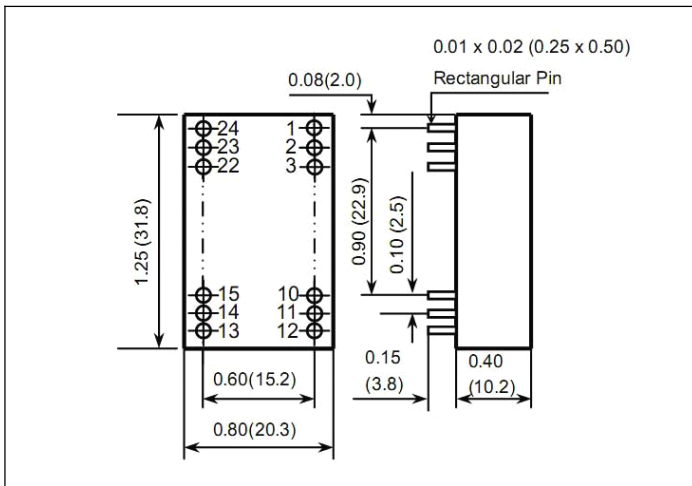
### EMC CHARACTERISTICS

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 <sup>(2)</sup>	Eff <sup>(3)</sup> (%)	Capacitor Load max <sup>(4)</sup>
MB0505XD-6W	4.5 – 5.5 VDC	5 VDC	1200mA	1622mA	74	470uF
MB0512XD-6W	4.5 – 5.5 VDC	12 VDC	500mA	1558mA	77	330uF
MB0515XD-6W	4.5 – 5.5 VDC	15 VDC	400mA	1538mA	78	330uF
MA0505XD-6W	4.5 – 5.5 VDC	± 5 VDC	800mA/-400mA	1714mA	70	330uF
MA0512XD-6W	4.5 – 5.5 VDC	± 12 VDC	± 250mA	1644mA	73	110uF
MA0515XD-6W	4.5 – 5.5 VDC	± 15 VDC	± 200mA	1600mA	75	110uF
MB1205XD-6W	10.8 – 13.2 VDC	5 VDC	1200mA	694mA	72	470uF
MB1212XD-6W	10.8 – 13.2 VDC	12 VDC	500mA	676mA	74	330uF
MB1215XD-6W	10.8 – 13.2 VDC	15 VDC	400mA	667mA	75	330uF
MA1205XD-6W	10.8 – 13.2 VDC	± 5 VDC	800mA/-400mA	735mA	68	330uF
MA1212XD-6W	10.8 – 13.2 VDC	± 12 VDC	± 250mA	714mA	70	110uF
MA1215XD-6W	10.8 – 13.2 VDC	± 15 VDC	± 200mA	694mA	72	110uF
MB2405XD-6W	21.6 – 26.4 VDC	5 VDC	1200mA	362mA	69	470uF
MB2412XD-6W	21.6 – 26.4 VDC	12 VDC	500mA	357mA	70	330uF
MB2415XD-6W	21.6 – 26.4 VDC	15 VDC	400mA	352mA	71	330uF
MA2405XD-6W	21.6 – 26.4 VDC	± 5 VDC	800mA/-400mA	373mA	67	330uF
MA2412XD-6W	21.6 – 26.4 VDC	± 12 VDC	± 250mA	362mA	69	110uF
MA2415XD-6W	21.6 – 26.4 VDC	± 15 VDC	± 200mA	347mA	72	110uF
MB4805XD-6W	43.2 – 52.5VDC	5 VDC	1200mA	176mA	71	470uF
MB4812XD-6W	43.2 – 52.5VDC	12 VDC	500mA	171mA	73	330uF
MB4815XD-6W	43.2 – 52.5VDC	15 VDC	400mA	169mA	74	330uF
MA4805XD-6W	43.2 – 52.5VDC	± 5 VDC	800mA/-400mA	189mA	66	330uF
MA4812XD-6W	43.2 – 52.5VDC	± 12 VDC	± 250mA	184mA	68	110uF
MA4815XD-6W	43.2 – 52.5VDC	± 15 VDC	± 200mA	179mA	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.



DIP 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