

FEATURES

- ◆ 8 Pin DIP Package
- ◆ Low ripple and noise
- ◆ High efficiency up to 82%
- ◆ Input / Output Isolation 1000VDC
- ◆ Pin compatible with multiple manufactures
- ◆ Operating temperature -40°C to + 85°C
- ◆ Short circuit protection(automatic recovery)
- ◆ No external component required
- ◆ MTBF>1,000,000 hours
- ◆ RoHS Compliance

MODEL SELECTION

B^①05^②05^③X^④MD^⑤

- ① Product Series
- ② Input Voltage
- ③ Output Voltage
- ④ Fixed Input
- ⑤ MINI DIP8 Package

APPLICATIONS

The B-XMD&D-XMD series are specially designed for applications where a group of polar 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 fixed (voltage variation $\leq \pm 10\%$);
- 2) where isolation is necessary between input and output (isolation voltage $\leq 1000\text{VDC}$);
- 3) where the regulation of the output voltage and the output ripple noise are not demanded.



SELECTION GUIDE

| Model | INPUT VOLTAGE (V) | OUTPUT VOLTAGE (V) | OUTPUT CURRENT MAX (mA) | ISOIATION (VDC) | MAX CAPACTIVE Load | EFFICIEN CY (%) |
|------------|-------------------|--------------------|-------------------------|-----------------|--------------------|-----------------|
| B0503XMD | 4.5-5.5 | 3.3 | 300 | 1000 | 220 | 72 |
| B0505XMD | 4.5-5.5 | 5 | 200 | 1000 | 220 | 75 |
| B0507XMD | 4.5-5.5 | 7.2 | 140 | 1000 | 220 | 76 |
| B0509XMD | 4.5-5.5 | 9 | 110 | 1000 | 220 | 77 |
| B0512XMD | 4.5-5.5 | 12 | 83 | 1000 | 220 | 78 |
| B0515XMD | 4.5-5.5 | 15 | 67 | 1000 | 220 | 78 |
| B0518XMD | 4.5-5.5 | 18 | 56 | 1000 | 220 | 78 |
| B0524XMD | 4.5-5.5 | 24 | 42 | 1000 | 220 | 78 |
| B1203XMD | 10.8-13.2 | 3.3 | 300 | 1000 | 220 | 72 |
| B1205XMD | 10.8-13.2 | 5 | 200 | 1000 | 220 | 75 |
| B1207XMD | 10.8-13.2 | 7.2 | 140 | 1000 | 220 | 76 |
| B1209XMD | 10.8-13.2 | 9 | 110 | 1000 | 220 | 77 |
| B1212XMD | 10.8-13.2 | 12 | 83 | 1000 | 220 | 78 |
| B1215XMD | 10.8-13.2 | 15 | 67 | 1000 | 220 | 78 |
| B1218XMD | 10.8-13.2 | 18 | 56 | 1000 | 220 | 78 |
| B1224XMD | 10.8-13.2 | 24 | 42 | 1000 | 220 | 78 |
| B2403XMD | 21.6-26.4 | 3.3 | 300 | 1000 | 220 | 72 |
| B2405XMD | 21.6-26.4 | 5 | 200 | 1000 | 220 | 75 |
| B2407XMD | 21.6-26.4 | 7.2 | 140 | 1000 | 220 | 76 |
| B2409XMD | 21.6-26.4 | 9 | 110 | 1000 | 220 | 77 |
| B2412XMD | 21.6-26.4 | 12 | 83 | 1000 | 220 | 78 |
| B2415XMD | 21.6-26.4 | 15 | 67 | 1000 | 220 | 78 |
| B2418XMD | 21.6-26.4 | 18 | 56 | 1000 | 220 | 78 |
| B2424XMD | 21.6-26.4 | 24 | 42 | 1000 | 220 | 78 |
| D050303XMD | 4.5-5.5 | 3.3 / 3.3 | 150 / 150 | 1000 | 220 | 63 |
| D050505XMD | 4.5-5.5 | 5 / 5 | 100 / 100 | 1000 | 220 | 72 |
| D050707XMD | 4.5-5.5 | 7.2 / 7.2 | 70 / 70 | 1000 | 220 | 75 |
| D050909XMD | 4.5-5.5 | 9 / 9 | 55 / 55 | 1000 | 220 | 78 |
| D051212XMD | 4.5-5.5 | 12 / 12 | 42 / 42 | 1000 | 220 | 80 |
| D051515XMD | 4.5-5.5 | 15 / 15 | 34 / 34 | 1000 | 220 | 80 |
| D051818XMD | 4.5-5.5 | 18 / 18 | 28 / 28 | 1000 | 220 | 78 |
| D052424XMD | 4.5-5.5 | 24 / 24 | 21 / 21 | 1000 | 220 | 78 |
| D120303XMD | 10.8-13.2 | 3.3 / 3.3 | 150 / 150 | 1000 | 220 | 70 |
| D120505XMD | 10.8-13.2 | 5 / 5 | 100 / 100 | 1000 | 220 | 72 |
| D120707XMD | 10.8-13.2 | 7.2 / 7.2 | 70 / 70 | 1000 | 220 | 71 |
| D120909XMD | 10.8-13.2 | 9 / 9 | 55 / 55 | 1000 | 220 | 76 |
| D121212XMD | 10.8-13.2 | 12 / 12 | 42 / 42 | 1000 | 220 | 80 |
| D121515XMD | 10.8-13.2 | 15 / 15 | 34 / 34 | 1000 | 220 | 80 |
| D121818XMD | 10.8-13.2 | 18 / 18 | 28 / 28 | 1000 | 220 | 76 |
| D122424XMD | 10.8-13.2 | 24 / 24 | 21 / 21 | 1000 | 220 | 78 |
| D240303XMD | 21.6-26.4 | 3.3 / 3.3 | 150 / 150 | 1000 | 220 | 76 |
| D240505XMD | 21.6-26.4 | 5 / 5 | 100 / 100 | 1000 | 220 | 72 |
| D240707XMD | 21.6-26.4 | 7.2 / 7.2 | 70 / 70 | 1000 | 220 | 73 |
| D240909XMD | 21.6-26.4 | 9 / 9 | 55 / 55 | 1000 | 220 | 77 |
| D241212XMD | 21.6-26.4 | 12 / 12 | 42 / 42 | 1000 | 220 | 82 |
| D241515XMD | 21.6-26.4 | 15 / 15 | 34 / 34 | 1000 | 220 | 82 |
| D241818XMD | 21.6-26.4 | 18 / 18 | 28 / 28 | 1000 | 220 | 75 |
| D242424XMD | 21.6-26.4 | 24 / 24 | 21 / 21 | 1000 | 220 | 80 |

add Suffix "P" for Continuous Short Circuit Protection, e.g. B0505XMDP

| Input Specifications | | | | |
|--------------------------------|-----------|-----------|---------|-------|
| Parameters | Nominal | Typical | Maximum | Units |
| Voltage range | 5 | 4.5-5.5 | | VDC |
| | 12 | 10.8-13.2 | | VDC |
| | 24 | 21.6-26.4 | | VDC |
| Filter | Capacitor | | | |
| Turn on Transient process time | | | 25 | ms |
| Start up time | | 200 | | ms |
| Absolute Maximum Rating | 5 Vin | 0-7 | | VDC |
| | 12 Vin | 0-15 | | VDC |
| | 24 Vin | 0-28 | | VDC |
| Peak Input Voltage time | | 100 | | ms |

| Isolation Specifications | | | | |
|--------------------------|---------|---------|-----------------|-------|
| Parameters | Nominal | Typical | Rated | Units |
| Tested I/O voltage | 3 sec | | 1000 all models | VDC |
| Resistance | | > 1000 | | MOhm |
| Capacitance | | 60 | | pF |

| Output Specifications | | | | |
|--|----------------------|---------|---------|--------|
| Parameters | Nominal | Typical | Maximum | Units |
| Maximum | | ±3 | | % |
| Short Circuit protection | Momentary (1 sec) | | | |
| Line voltage regulation (Single) | For 1% change of Vin | ±1.2 | | % |
| Line voltage regulation (Dual) | For 1% change of Vin | ±1.2 | | % |
| Load voltage regulation (Single) | Load 20 – 100% | ±10 | | % |
| Load voltage regulation (Single) 3.3V output model | Load 20 – 100% | ±20 | | % |
| Load voltage regulation (Dual) | Load 20 – 100% | ±10 | | % |
| Load voltage regulation (Dual) 3.3V output model | Load 20 – 100% | ±20 | | % |
| Temperature coefficient | | ±0.02 | | %/°C |
| Ripple & Noise | At 20MHz Bandwidth | 100 | | mV p-p |
| Rising time | | 50 | | ms |

| General Specifications | | | | |
|------------------------|---|-------------|-------------------------|-------|
| Parameters | Conditions | Typical | Maximum | Units |
| Switching frequency | 100% load | 80 | | KHz |
| Operating temperature | Full Load without Derating | -40 to +85 | | °C |
| Storage temperature | | -55 to +125 | | °C |
| Max Case temperature | | | 90 | °C |
| Cooling | Free air convection | | | |
| Humidity | | | 90 | % |
| Case material | Non-conductive black plastic | | | |
| Weight | | 1.8 | | g |
| Dimensions (L x W x H) | 0.50 x 0.40 x 0.27 inches | | 12.70 x 10.16 x 6.85 mm | |
| MTBF | >1 191 000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C) | | | |

NOTE: All specifications in this data sheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified

| Safety Specifications | |
|-----------------------|---|
| Parameters | |
| Agency approvals | CE |
| Standards | EN55022 (Radiated Emissions) class B |
| | EN55024 (Noise Immunity), IEC61000-4-2(ESD) |
| | IEC61000-4-3 (Radiated Immunity) |

Dimensions

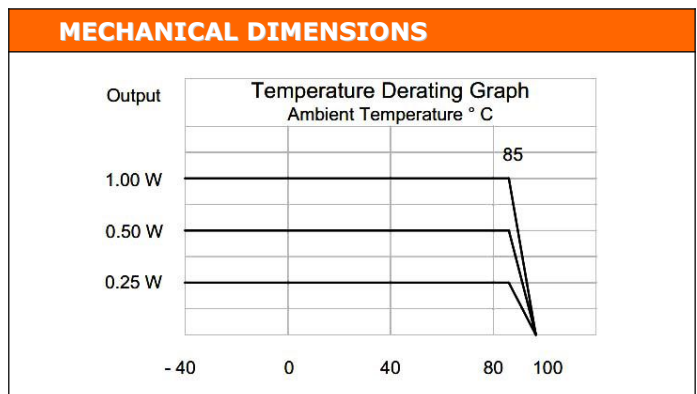
Note:
Unit:mm[inch]
Pin section tolerances: $\pm 0.10\text{mm}[\pm 0.004\text{inch}]$
General tolerances: $\pm 0.25\text{mm}[\pm 0.010\text{inch}]$

TUBE OUTLINE DIMENSIONS

Unit :mm[inch]
General tolerances: $\pm 0.50\text{mm}[\pm 0.020\text{inch}]$
L=530mm[20.866inch] Devices per tube: 40pcs
L=220mm[8.661 inch] Devices per tube: 16pcs

RECOMMENDED FOOTPRINT

Note: grid 2.54*2.54mm



PIN CONNECTIONS

| PIN | B-XMD | D-XMD |
|-----|------------|-------------|
| 1 | - V Input | - V Input |
| 4 | + V Input | + V Input |
| 5 | + V Output | + V1 Output |
| 6 | No pin | - V1 Output |
| 7 | - V Output | + V2 Output |
| 8 | No pin | - V2 Output |

RoHS COMPLIANT INFORMATION

This series is compatible with RoHS soldering systems with a peak wave solder temperature of 300° C for 10 seconds. The pin termination finish on the SIP package type is Tin Plate, Hot Dipped over Matte Tin with Nickel Preplate. The DIP types are Matte Tin over Nickel Preplate. Both types in this series are backward compatible with Sn/Pb soldering systems.

REACH COMPLIANT INFORMATION

This series has proven that this product does not contain harmful chemicals, it also has harmful chemical substances through the registration, inspection and approval.