

### Isolated 1.5W Single Output DC-DC Converters



## FEATURES

- ◆ Unregulated single output
- ◆ 1kVDC Isolation
- ◆ Operating Temperature: -40°C ~ +85°C
- ◆ High efficiency up to 80%
- ◆ DIP8 case
- ◆ Internal SMD construction
- ◆ Power density up to 0.85W/cm<sup>3</sup>
- ◆ No Extern. Components Required
- ◆ 3.3V, 5V, 7.2V, 9V, 12V, 15V, 18V, 24V output
- ◆ No heat sink required
- ◆ Custom Solutions Available
- ◆ UL 94V-0 package material
- ◆ No external components required
- ◆ Industry standard pin out
- ◆ Low ripple and noise
- ◆ MTTF up to 3.4 million hours

## MODEL SELECTION

**3RB<sup>①</sup>05<sup>②</sup>05<sup>③</sup>X<sup>④</sup>D<sup>⑤</sup>**

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

## APPLICATIONS

The B-XD series is a family of cost effective 1.5W single output DC/DC converters. These converters are in an ultra miniature DIP8 case. Devices are encapsulated. High performance features: 1000VDC input/output isolation, high efficiency operation, output voltage accuracy of ±3% maximum, input range of ±10% tolerance and low output ripple and noise.

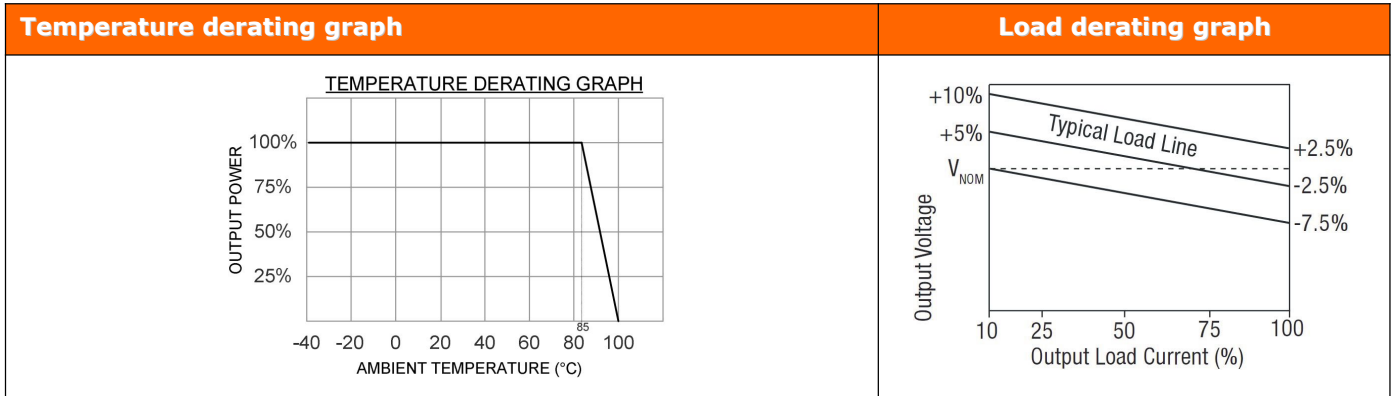


## SELECTION GUIDE

Order code	Input Voltage (V)	Output Voltage (V)	Input Current No Load (mA)	Input Current 100% Load (mA)	Output Current Full load (mA)	Efficiency (%)	Capacitor Load (uF)
3RB0503XD	05	3.3	30	361	400	73	220
3RB0505XD	05	05	30	400	300	75	220
3RB0507XD	05	7.2	30	400	208	75	220
3RB0509XD	05	09	30	400	167	75	220
3RB0512XD	05	12	30	384	125	78	220
3RB0515XD	05	15	30	384	100	78	220
3RB0518XD	05	18	30	384	83	78	220
3RB0524XD	05	24	30	379	62.5	79	220
3RB1203XD	12	3.3	15	148	400	74	220
3RB1205XD	12	05	15	168	300	74	220
3RB1207XD	12	7.2	15	166	208	75	220
3RB1209XD	12	09	15	166	167	75	220
3RB1212XD	12	12	15	166	125	75	220
3RB1215XD	12	15	15	162	100	77	220
3RB1218XD	12	18	15	162	83	77	220
3RB1224XD	12	24	15	162	62.5	75	220
3RB2403XD	24	3.3	10	73	400	75	220
3RB2405XD	24	05	10	83	300	75	220
3RB2407XD	24	7.2	10	83	208	75	220
3RB2409XD	24	09	10	83	167	75	220
3RB2412XD	24	12	10	82	125	76	220
3RB2415XD	24	15	10	82	100	76	220
3RB2418XD	24	18	10	82	83	76	220
3RB2424XD	24	24	10	79	62.5	79	220

## Specifications

Input Voltage Range	±10%
Input Filter	Capacitor Type
Output Voltage Accuracy	±3%
Line Voltage Regulation	± 1.2%/1% V <sub>input</sub> Change
Load Voltage Regulation	20%-100% ± 10% (3.3Vout Models: ± 20%)
Ripple and Noise	(20MHz) 100mVp-p max.
Temperature Coefficient	± 0.02%/°C
Efficiency at Full Load	See table
I/O Isolation Voltage (3 sec.)	1000 VDC
I/O Isolation Capacity	60 pF, typ.
I/O Isolation Resistance	1000 MOhm
Short Circuit Protection	Short term(1 seconds)
Switching Frequency	80 kHz (Variable)
Humidity	95% rel H
Reliability Calculated MTBF (MIL-HDBK-217F)	> 1.121 Mhrs
Case Material	Non Conductive Black Plastic (UL94V-0 rated)
Weight	~ 1.8g, typ.
Operating Temperature	-40 to +85°C (ambient)
Maximum Case	100° C
Storage Temperature	-40°C to +125°C
Cooling	Free Air Convection
RoHS Conform	Soldering 260°C, max. (1.5mm from case 10s.)



OUTLINE DIMENSIONS & FOOTPRINT DETAILS													
<div style="background-color: #f4a460; text-align: center; padding: 2px;"><b>MECHANICAL DIMENSIONS</b></div> <div style="background-color: #f4a460; text-align: center; padding: 2px;"><b>8 PIN DIP Package</b></div> <p style="font-size: small;">All dimensions are typical in millimeters (inches).          - Pin diameter: 1.0 +/-0.05 (0.04 +/-0.002)          - Pin pitch tolerance: +/-0.35 (+/-0.014)          - Case tolerance +/-0.5 (+/-0.02)          Specification may change without notice.</p> <p style="text-align: center;"><b>DIP 8 – PLASTIC CASE</b></p>	<div style="background-color: #f4a460; text-align: center; padding: 2px;"><b>FOOTPRINT DETAILS</b></div> <div style="background-color: #f4a460; text-align: center; padding: 2px;"><b>8 PIN DIP</b></div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Pin</th> <th>Function</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-Vin</td> </tr> <tr> <td>4</td> <td>+Vin</td> </tr> <tr> <td>5</td> <td>+Vout</td> </tr> <tr> <td>7</td> <td>-Vout</td> </tr> <tr> <td>Others</td> <td>NC</td> </tr> </tbody> </table> <p style="font-size: small;">NC: no connect</p> <p style="font-size: small;"><b>Specifications can be changed any time without notice.</b>  <b>No parallel connection or plug and play.</b>          Note:          1. The load shouldn't be less than 10%, otherwise ripple will increase dramatically.          2. Operation under 10% load will not damage the converter; However, they may not meet all specification listed.          3. All specifications measured at Ta=25°C, humidity&lt;75%, nominal input voltage and rated output load unless otherwise specified.          4. In this data sheet, all the test methods of indications are based on corporate standards.</p>	Pin	Function	1	-Vin	4	+Vin	5	+Vout	7	-Vout	Others	NC
Pin	Function												
1	-Vin												
4	+Vin												
5	+Vout												
7	-Vout												
Others	NC												

All dimensions in inches ±0.01(mm±0.25mm). All pins on a 0.1(2.54) pitch and within ±0.01(0.25) of true position.

