## BXA10 Series

Total Power: 8-10W
Input Voltage: 9-18VDC 18-75VDC
\# of Outputs: Single


## Special Features

- $1 \times 2 \times 0.395$ inch package with stand-offs
- 13.3 Watts/in3 power density
- CISPR22 and EN55022 conducted emission level A
- UL, CSA and VDE approvals (48V input only)
- Continuous short circuit protection
- Optional remote ON/OFF
- Available RoHS compliant
- 2 year warranty

The BXA10 series of dc-dc converters, comprising 7 different models, is designed for a wide range of applications including communications, industrial systems and mobile battery powered systems. Packing up to 10 Watts of power into a $2 \times 1 \times 0.395$ inch package, with efficiencies as high as $85 \%$, the BXA10 has wide input ranges of 9 Vdc to 18 Vdc and 18 Vdc to 75 Vdc , and is available in single and dual output versions. Isolation of 1500 Vdc , approval to EN60950 2nd edition, coupled with reduced conducted noise for simplified compliance to FCC Part 15 level A and EN55022 level A, make the BXA10 ideal for telecommunications and distributed power applications. Other features include overvoltage protection, continuous short circuit protection with automatic recovery and remote on/off, all of which minimize the need for external circuitry and make the BXA10 a recommended component in distributed power systems.

## Safety

VDE0805/EN60950/IEC950
File No. 10401-3336-0084 Licence No. 1812

UL1950 File No. E174104
CSA C22.2 No. 950
File No. LR41062C

## Specifications

All specifications are typical at nominal input, full load at $25^{\circ} \mathrm{C}$ unless otherwise stated.


| INPUT SPECIFICATIONS |  |  |
| :--- | :--- | ---: |
| Input voltage range | $12 \mathrm{Vdc}($ See Note 6) <br> 48 Vdc | $9-18 \mathrm{Vdc}$ <br> $18-75 \mathrm{Vdc}$ |
| Input filter |  | Pi type |
| Start up surge current | Resistive load | 1.5 A max. |
| Remote ON/OFF |  | Open collector compatible  <br> ON (See Note 3) High impedance $>400 \mathrm{k} \Omega$ <br> OFF Low impedance $<1.0 \mathrm{k} \Omega$ <br> OFF idle current $<1.5 \mathrm{~mA}$ |
| Start-up time |  | 1.6 s, max. |


| EMC CHARACTERISTICS |  |
| :---: | :---: |
| Conducted emissions <br> ESD air <br> ESD contact <br> Surge <br> Fast transients <br> Radiated immunity <br> Conducted immunity | EN55022, FCC (See Note 8) Level A <br> EN6100-4-2, level 2 Perf.c criteria 1 <br> EN61000-4-2, level 3 Perf.criteria 1 <br> EN61000-4-5, level 2 Perf. criteria 1 <br> EN61000-4-4, level 2 Perf.criteria 1 <br> EN61000-4-3, level 3 Perf. criteria 1 <br> EN61000-4-6, level 3 Perf. criteria 1 |
| GENERAL SPECIFICATIONS |  |
| Efficiency | See table |
| Isolation voltage | Input/output 1500 Vdc <br> Input or output to case 1000 Vdc |
| Switching frequency | Fixed 400 kHz |
| Approvals and standards | Safety VDE0805, EN60950, IEC950 <br>  UL1950, CSA C22.2 No. 950 |
| Case material | Black coated, six-sided metal case |
| Material flammability | UL94V-0 |
| Weight | 20 g (0.71 oz) |
| MTBF | MIL-HDBK-217F 519,000 hours <br> Bellcore $>2$ million hours |
| ENVIRONMENTAL SPECIFICATIONS |  |
| Thermal performance |  |
| Relative humidity | Non-condensing $5 \%$ to $95 \%$ RH |
| Altitude | Operating 10,000 feet max. <br> Non operating 40,000 feet max. |
| Vibration | $5-500 \mathrm{MHz} \quad 2.5 \mathrm{Grms}$ (approx.) |

## Specifications Contd.

| INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | INPUT CURRENT ${ }^{\omega}$ | TYPICAL EFFICIENCY | OVP | REGULATION (Typ.) |  | MODEL <br> NUMBER ${ }^{(3,90)}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | LINE | LOAD |  |
| $9-18 \mathrm{Vdc}$ | 5 V | 2 A | 1.1 A | 81\% | 6.2 Vdc | $\pm 0.2 \%$ | $\pm 0.5 \%$ | BXA10-12S05] |
| $9-18 \mathrm{Vdc}$ | 15 V | 0.67 A | 1.05 A | 85\% | 18 Vdc | $\pm 0.2 \%$ | $\pm 0.5 \%$ | BXA10-12S15] |
| $9-18 \mathrm{Vdc}$ | $\pm 5 \mathrm{~V}$ | $\pm 1 \mathrm{~A}$ | 1.05 A | 81\% | 12 Vdc | $\pm 0.2 \%$ | $\pm 0.5 \%$ | BXA10-12D05J |
| $18-75 \mathrm{Vdc}$ | 5 V | 2 A | 0.26 A | 82\% | 6.8 Vdc | $\pm 0.2 \%$ | $\pm 0.5 \%$ | BXA10-48S05] |
| $18-75 \mathrm{Vdc}$ | $\pm 5 \mathrm{~V}$ | $\pm 1 \mathrm{~A}$ | 0.26 A | 82\% | 12 Vdc | $\pm 0.2 \%$ | $\pm 0.5 \%$ | BXA10-48D05J |
| $18-75 \mathrm{Vdc}$ | $\pm 12 \mathrm{~V}$ | $\pm 0.416 \mathrm{~A}$ | 0.25 A | 84\% | 30 Vdc | $\pm 0.2 \%$ | $\pm 0.5 \%$ | BXA10-48D12] |
| $18-75 \mathrm{Vdc}$ | $\pm 15 \mathrm{~V}$ | $\pm 0.333 \mathrm{~A}$ | 0.25 A | 84\% | 36 Vdc | $\pm 0.2 \%$ | 0.5\% | BXA10-48D15J |

## Notes

1 At nominal input and output voltage and maximum load.
2 Output ripple can be reduced to $<50 \mathrm{mV}$ with the addition of a $33 \mu \mathrm{~F}, 25 \mathrm{~V}$, AVX-TPS (or equivalent) tantalum capacitor. Consult factory for further information.
3 For units with optional remote ON/OFF, please add the suffix '-S' to the model number: e.g. BXA10-48S05-SJ. Maximum open pin voltage 14 Vdc .
4 Assumes balanced loads on dual output models.
5 High impedance source/long input power cable may necessitate the introduction of an input filter.
6 Typical 9 Vdc to 18 Vdc model start-up voltage is 9 V . Maximum start-up voltage is $9.5 \mathrm{~V}\left(>0^{\circ} \mathrm{C}\right)$ or $9.7 \mathrm{~V}\left(<0^{\circ} \mathrm{C}\right)$.
7 It is recommended that an IEC $127,250 \mathrm{~V}$, fast blow fuse is used rated at 4 A for nominal 12 V models and 2 A for 48 V models.
8 To achieve compliance to EN55022-A and FCC part 15 Class A, external capacitors of the following values are needed:

| Model | C1 $^{*}$ | C2 | C3 |
| :---: | :---: | :---: | :---: |
| BXA10-12xxxx | $10 \mu \mathrm{~F}$ film, 25 V | $0.22 \mu \mathrm{~F}$ film | $0.22 \mu \mathrm{~F}$ film |
| BXA10-48xxxx | $10 \mu \mathrm{~F}$ film, 100 V | $0.22 \mu \mathrm{~F}$ film | $0.22 \mu \mathrm{~F}$ film |

(C2, C3 voltage rating application dependent)

* Siemens P.N. B32512-J1106-J or equivalent.

9 The 'J' suffix indicates that these parts are Pb-free (RoHS 6/6) compliant. TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
10 NOTICE: Some models do not support all options. Please contact your local Artesyn representative or use the on-line model number search tool at http://www.artesyn.com/powergroup/products.htm to find a suitable alternative.

Please check with your local representative or the Model Search Tool for the latest available product codes.

| PIN CONNECTIONS |  |  |
| :---: | :---: | :---: |
| PIN NUMBER | SINGLE OUTPUT | DUAL OUTPUT |
| 1 | +Vin | + Vin |
| 2 | - Vin | - Vin |
| 3 | + Vout | + Vout |
| 4 | No Pin | Common |
| 5 | - Vout | - Vout |
| $6^{*}$ | Remote ON/OFF | Remote ON/OFF |

* Optional remote ON/OFF pin. Add Suffix '-S' to the model number (Note 3).




## Mechanical Notes

A Recommended PCB hole diameter is 0.052 inches $(1.32 \mathrm{~mm})$.
B All pins are in true position within 0.010 inches ( 0.25 mm ).
C Tolerance (inches): $. X X= \pm 0.02$ $X X X= \pm 0.005$

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