

ARTESYN AVD50 SERIES

50 Watt 1/16" brick DC/DC Converter



Advanced Energy's Artesyn AVD50B series sixteenth-brick isolated DC-DC converter provides a fully regulated single output at 3.3V, 5V or 12V that is capable of delivering up to 50Watts. It has a wide 2:1 input range of 36 to 75 Vdc and is designed primarily for use with standard 48 V telecommunications equipment supplies. Rated at 50 watts, the converter employs an open-frame construction, offers up to 93% efficiency and accommodates an ambient operating temperature range of -40 to 85 °C. A baseplate option is available for enhanced thermal performance. SMT bullet pin with reel tape package is available for reflow processing . The converter uses fixed frequency switching to minimize the need for external EMI filtering.

DATA SHEET

Total Power:

50 Watts
 (12 V @ 4.17 A)
 (5 V @ 10 A)
 (3.3 V @ 15 A)

Input Voltage:

36 - 75 Vdc

Single Output:

12 V, 5 V, 3.3 V

SPECIAL FEATURES

- 50 W continuous power
- Ultra high efficiency up to 93%
- Low ripple and noise
- Telecom DC input range
- Baseplate optimised for contact cooling
- Open frame optimized for air cooling
- Through hole and surface mount termination option
- Fixed switching frequency
- High capacitive load capability
- Pre-bias startup capability
- High reliability
- RoHS 6 compliant
- UL94 V-0 materials
- 2-year warranty (consult factory for extended terms)

SAFETY

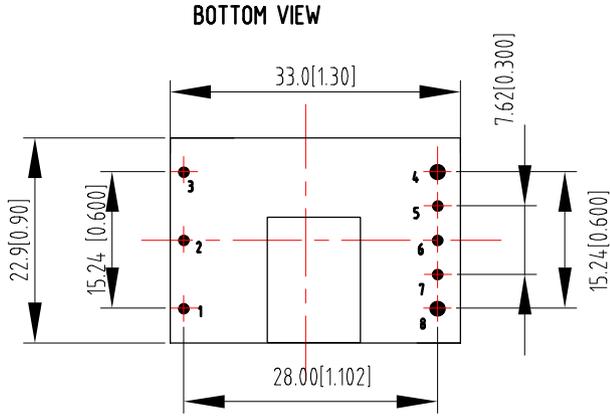
- TUV/CE 62368-1
- UL/cUL 60950-1

ELECTRICAL SPECIFICATIONS

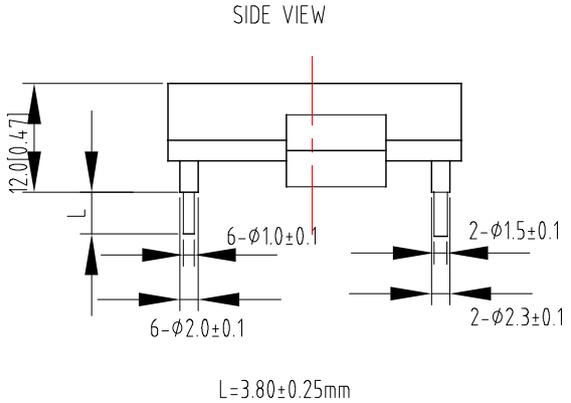
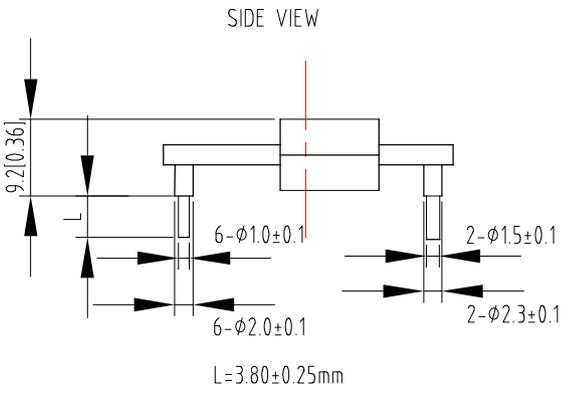
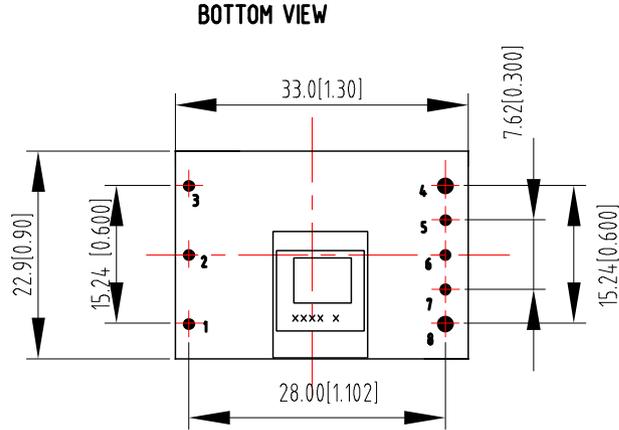
| Input | 12 V | 5 V | 3.3 V |
|-----------------------------------------------|--------------------------------------------------|-------------------|------------------|
| Input range | 36 - 75 Vdc | | |
| Input surge | 100 V / 100 mSec | | |
| Efficiency | 93% (100% load) | 91.5% (100% load) | 92% (100% load) |
| I/O insulation | Basic insulation | | |
| I/O isolation | 2250 Vdc | 1500 Vdc | 1500 Vdc |
| Output | 12 V | 5 V | 3.3 V |
| Output voltage | 12 V nominal | 5 V nominal | 3.3 V nominal |
| Output current maximum | 4.17 A | 10 A | 15 A |
| Noise & ripple | 64 mV pk-pk typ. | 35 mV pk-pk typ. | 40 mV pk-pk typ. |
| Overtemperature protection | Baseplate: 110 °C Open frame: 120 °C hot spot | | |
| Overvoltage protection method / OCP operation | Auto restart / 130% Vout | | |
| Overcurrent protection method / OCP operation | Hiccup 150% Iout | | |
| Control | 12 V | 5 V | 3.3 V |
| Enable | TTL compatible (negative logic) | | |
| Trim function | 80% to 110% Vout | | |
| Remote sense | Sense connections provided | | |
| Switching frequency | 350 KHz | | |

MECHANICAL DRAWINGS

MODEL: AVD50B-48S05-6L



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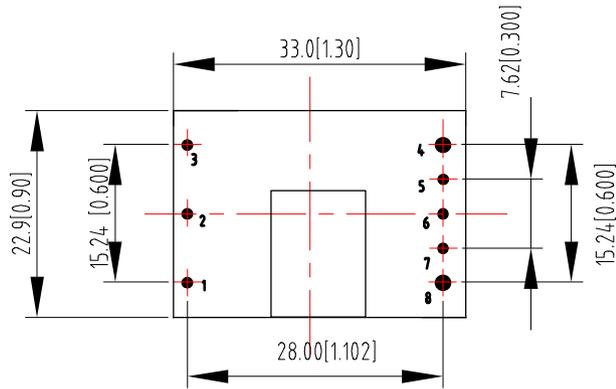
UNIT: mm[inch]
 TOLERANCE: XXmm +0.5mm[X.XX in +0.02in]
 X.XXmm +0.25mm[X.XXX in +0.01]

Notes:
 1. Different output voltage AVD50B products have slight differences in the mechanical drawing. Please check the specified product's Technical Reference Note for more details
 2. All specifications are subject to change without notice. Mechanical drawings are for reference only.

MECHANICAL DRAWINGS (CONTINUED)

MODEL: AVD50B-48S05TL

BOTTOM VIEW

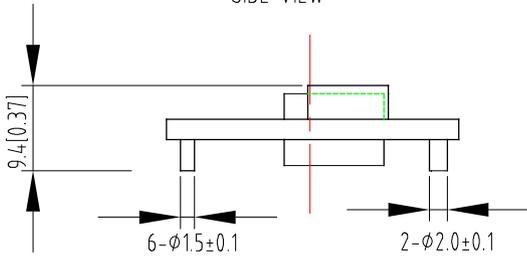


UNIT: mm[inch]
 TOLERANCE: XXmm +0.5mm[X.XX in +0.02in]
 X.XXmm +0.25mm[X.XXX in +0.01]

Notes:

1. Different output voltage AVD50B products have slight differences in the mechanical drawing. Please check the specified product's Technical Reference Note for more details
2. All specifications are subject to change without notice. Mechanical drawings are for reference only.

SIDE VIEW



PIN DESIGNATIONS

| Pin Number | Name | Name |
|------------|---------------|--------------------------|
| 1 | Vin+ | Positive input terminal |
| 2 | Remote ON/OFF | ON/OFF control terminal |
| 3 | Vin- | Negative input terminal |
| 4 | Vo- | Negative output terminal |
| 5 | S- | Negative remote sense |
| 6 | Trim | Output voltage trim |
| 7 | S+ | Positive remote sense |
| 8 | Vo+ | Positive output terminal |

PIN LENGTH OPTIONS

| Device Code Suffix | L |
|--------------------|-----------------|
| -4 | 4.8 mm +0.25 mm |
| -6 | 3.8 mm +0.25 mm |
| -8 | 2.8 mm +0.25 mm |
| None | 5.8 mm +0.25 mm |

ENVIRONMENTAL SPECIFICATIONS

| | |
|-------------------------------|-------------------|
| Operating ambient temperature | -40 °C to +85 °C |
| Storage temperature | -55 °C to +125 °C |
| MTBF | 2 Million hours |

ORDERING INFORMATION

| Model Number | Input Voltage | Output Voltage | Output Current | Structure |
|-------------------|---------------|----------------|----------------|--------------------------------|
| AVD50B-48S12-6L | 36 - 75 Vin | 12 Vdc | 4.17 A | Open frame |
| AVD50B-48S12B-6L | 36 - 75 Vin | 12 Vdc | 4.17 A | Baseplate |
| AVD50B-48S12TL | 36 - 75 Vin | 12 Vdc | 4.17 A | SMT pin with reel tape package |
| AVD50B-48S05-6L | 36 - 75 Vin | 5 Vdc | 10 A | Open frame |
| AVD50B-48S05B-6L | 36 - 75 Vin | 5 Vdc | 10 A | Baseplate |
| AVD50B-48S05TL | 36 - 75 Vin | 5 Vdc | 10 A | SMT pin with reel tape package |
| AVD50B-48S3V3-6L | 36 - 75 Vin | 3.3 Vdc | 15 A | Open frame |
| AVD50B-48S3V3B-6L | 36 - 75 Vin | 3.3 Vdc | 15 A | Baseplate |
| AVD50B-48S3V3TL | 36 - 75 Vin | 3.3 Vdc | 15 A | SMT pin with reel tape package |

Notes:

Standard version is negative enable
-6 = 3.8 mm pin length
-T = Surface mount, reel tape package
-L = RoHS 6 compliance
-P = Positive enable



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Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

PRECISION | POWER | PERFORMANCE

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X-ON Electronics

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