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

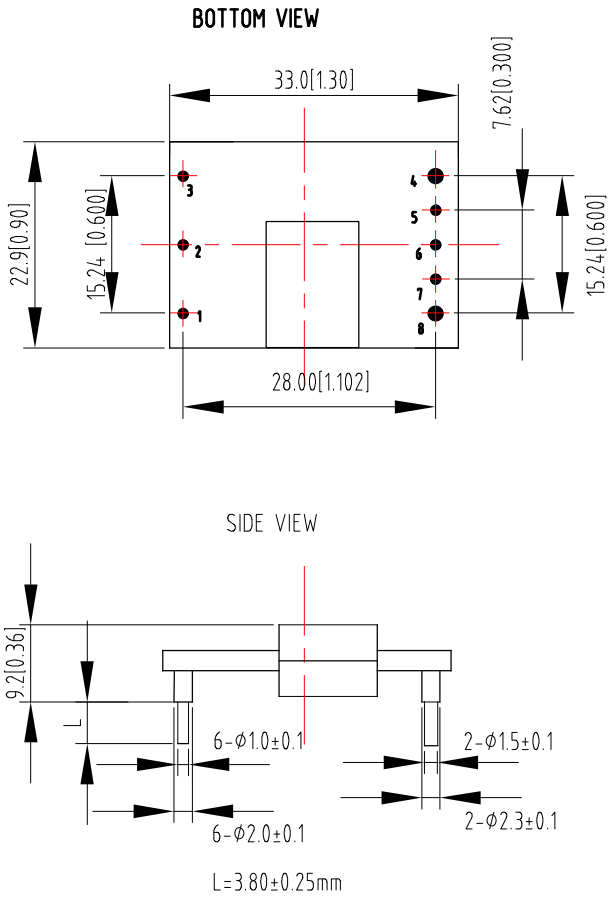
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ELECTRICAL SPECIFICATIONS

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		

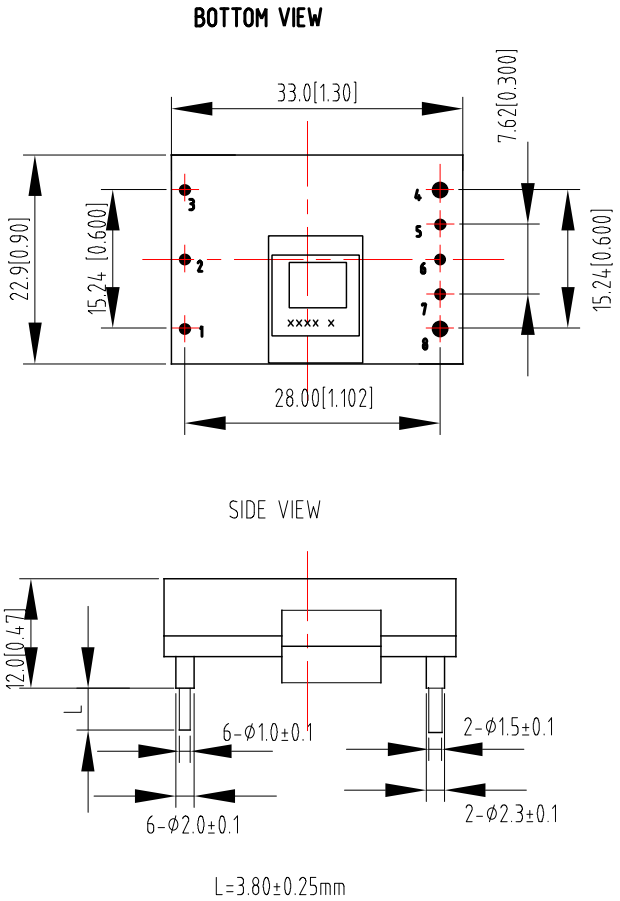
MECHANICAL DRAWINGS

MODEL: AVD50B-48S05-6L



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

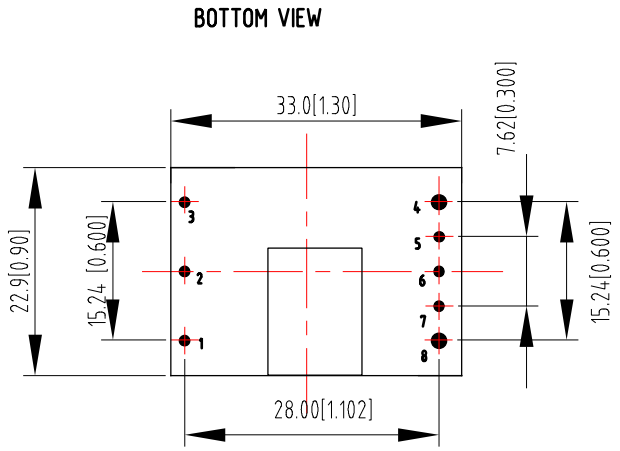
MODEL: AVD50B-48S05B-6L

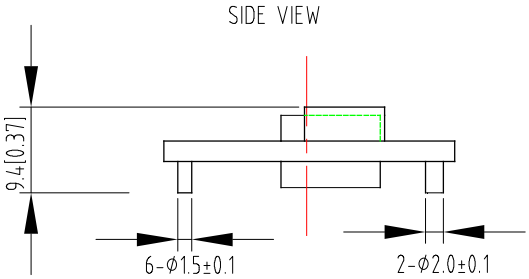


Notes:
1. Different output voltage AVD50B products have slight differences in the mechnical drawing. Please check the specified product's Technical Reference Note for more details
2. All specifications are subject to change without notice. Mechanical drawings are for reference only.

MECHANICAL DRAWINGS (CONTINUED)

MODEL: AVD50B-48S05TL





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 mechnical 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.

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

ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

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.

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