

## AVD50B Series

### 50 Watt 1/16" brick DC/DC Converter

#### 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

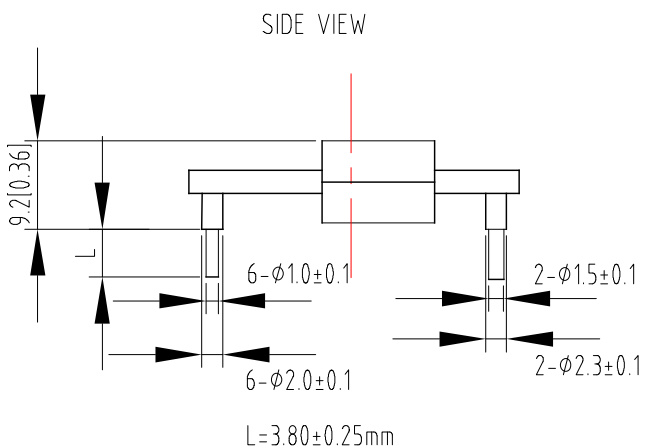
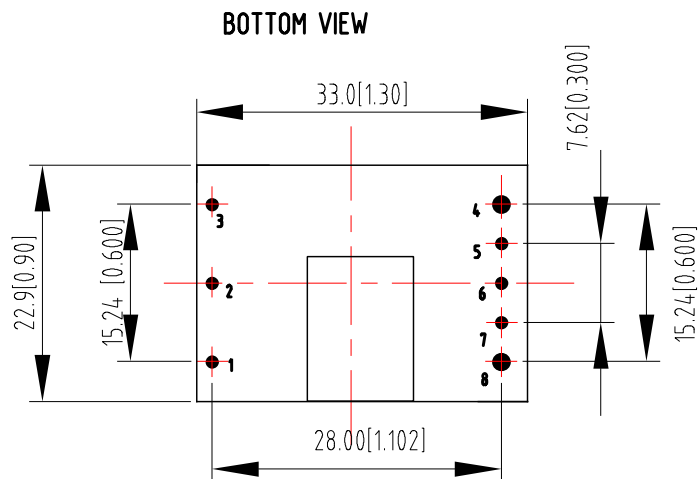
- EN60950
- UL/CSA60950
- CE

#### 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                                 | 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<br>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

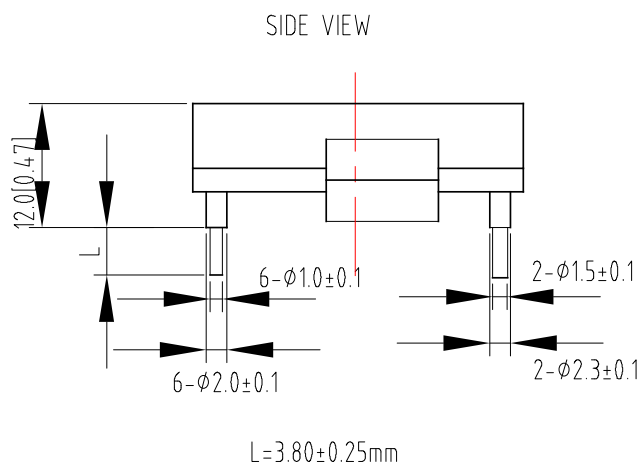
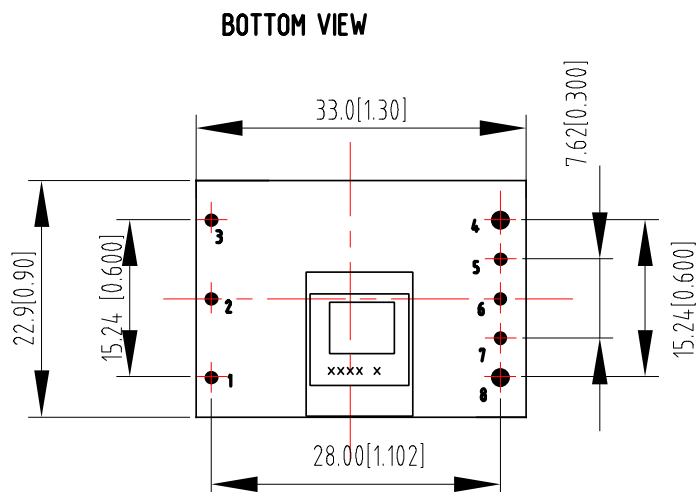
Model: AVD50B-48S05-6L



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

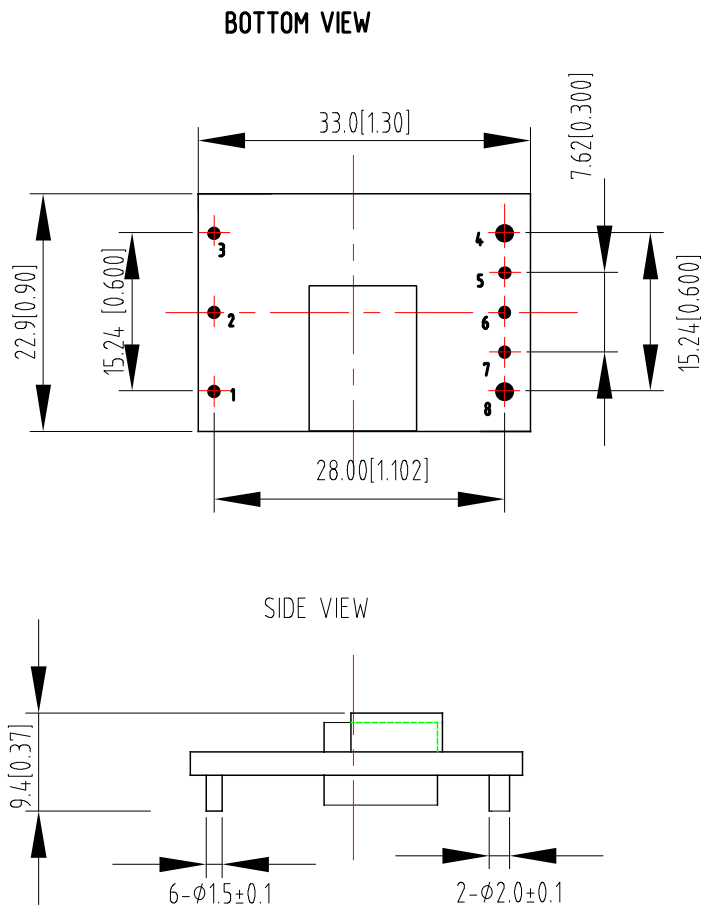


Notes:

1. Different output voltage AVD50B products have slight differences in the 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

Model: AVD50B-48S05TL



UNIT: mm[inch]

TOLERANCE: XXmm  $\pm 0.5$ mm[X.XX in  $\pm 0.02$ in]  
X.XXmm  $\pm 0.25$ mm[X.XXX in  $\pm 0.01$ in]

### 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.

## 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 $\pm 0.25$ mm |
| -6                 | 3.8 mm $\pm 0.25$ mm |
| -8                 | 2.8 mm $\pm 0.25$ mm |
| None               | 5.8 mm $\pm 0.25$ 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

### WORLDWIDE OFFICES

#### Americas

2900 S.Diablo Way  
 Tempe, AZ 85282  
 USA  
 +1 888 412 7832

#### Europe (UK)

Waterfront Business Park  
 Merry Hill, Dudley  
 West Midlands, DY5 1LX  
 United Kingdom  
 +44 (0) 1384 842 211

#### Asia (HK)

14/F, Lu Plaza  
 2 Wing Yip Street  
 Kwun Tong, Kowloon  
 Hong Kong  
 +852 2176 3333



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