



# 100 Watt, 4:1 Wide Input DC/DC Converters Series DV100EB4



## Features

- 100 Watt Isolated Output
- Regulated Outputs
- 4 : 1 Wide Input Range
- Isolation I/O 3000VDC
- Fixed Switching Frequency
- Low No Load Power Consumption
- Remote ON/OFF
- Meets UL62368-1 & IEC62368-1
- Meets EN50155 with External Circuits
- Eighth Brick Size Meet Industrial Standard
- Efficiency to 91%
- Operating Case Temperature -40 to +105°C
- Over Temperature Protection
- Over Voltage Protection
- Over Current Protection
- Continuous Short Circuit Protection
- Remote ON/OFF
- Meets Fire & Smoke EN45545-2

| MODEL NUMBER   | INPUT VOLTAGE [ VDC ] | OUTPUT VOLTAGE [ VDC ] | OUTPUT CURRENT [ A ] MAX. | INPUT CURRENT NO LOAD [ mA ] | INPUT CURRENT FULL LOAD [ mA ] | EFFICIENCY [ % ] @Vin ( Note 1 / 2 ) | CAPACITOR LOAD Max. [ μF ] | CASE |
|----------------|-----------------------|------------------------|---------------------------|------------------------------|--------------------------------|--------------------------------------|----------------------------|------|
| DV100EB4-24S05 | 9 – 40                | 5                      | 20                        | 100                          | 4682                           | 89 / 88                              | 20000                      | EB   |
| DV100EB4-24S12 | 9 – 40                | 12                     | 8,3                       | 100                          | 4611                           | 90 / 89                              | 8300                       |      |
| DV100EB4-24S24 | 9 – 40                | 24                     | 4,2                       | 100                          | 4615                           | 90 / 90                              | 4200                       |      |
| DV100EB4-24S54 | 9 – 40                | 54                     | 1,85                      | 100                          | 4574                           | 91 / 90                              | 2100                       |      |
| DV100EB4-48S05 | 16,5 – 74             | 5                      | 20                        | 100                          | 2315                           | 89 / 88                              | 20000                      | EB   |
| DV100EB4-48S12 | 16,5 – 74             | 12                     | 8,3                       | 100                          | 2280                           | 90 / 89                              | 8300                       |      |
| DV100EB4-48S24 | 16,5 – 74             | 24                     | 4,2                       | 100                          | 2283                           | 90 / 90                              | 4200                       |      |
| DV100EB4-48S54 | 16,5 – 74             | 54                     | 1,85                      | 100                          | 2287                           | 91 / 90                              | 2100                       |      |

NOTE:

1. Nominal Input Voltage 24VDC or 48VDC.
2. Measured at 12VDC for 24Vin, 24VDC for 48Vin
3. An external input capacitor 100uF for all models are Recommended to Reduce Input Ripple Voltage.
4. Suffix "N" to Model Number with Negative Remote On/Off Logic For Example: DV100EB4-24S24N

## INPUT SPECIFICATIONS:

|  |                        |                                |
|--|------------------------|--------------------------------|
| Input Voltage Range.....   | 24V .....              | 9-40Vdc                        |
|  | 48V .....              | 16,5-74Vdc                     |
| Input Surge Voltage ( 100ms max. ) .....                               | 24V .....              | 50Vdc max.                     |
|  | 48V .....              | 100Vdc max.                    |
| Under Voltage Lockout.....   | 24Vin Power up .....   | 8,8dc typ.                     |
|  | 24Vin Power down ..... | 8,0Vdc typ.                    |
|  | 48Vin Power up .....   | 16Vdc typ.                     |
|  | 48Vin Power down ..... | 15Vdc typ.                     |
| Input Filter (2) .....   |                        | PI Filter                      |
| Logic compatibility .....  |                        | open collector ref to -Input   |
|  | Module On .....        | Open Circuit or >3.5V to 75VDC |
|  | Module OFF .....       | 0 to 1,2VDC                    |
| Suffix "N" to the model number with negative logic remote on/off ..... | Module ON .....        | 0 to 1,2VDC                    |
|  | Module OFF .....       | Open Circuit or >3.5V to 75VDC |

## OUTPUT SPECIFICATION:

|  |                               |                              |
|--|-------------------------------|------------------------------|
| Output Current Min. ....                             |                               | 0 mA                         |
| Voltage Accuracy.....                                |                               | ±1,0%max.                    |
| Line Regulation.....                                 | High line to low line .....   | ±0,2% max.                   |
| Load Regulation .....                                | Full load to zero load .....  | ±0,2% max.                   |
| Temperature Coefficient.....                         |                               | ±0,02%/°C max.               |
| Ripple and Noise (Note 1) .....                      | 5V .....                      | 40mV RMS / 100mV pk-pk max.  |
|  | 12V .....                     | 60mV RMS / 150mV pk-pk max.  |
|  | 24V .....                     | 100mV RMS / 240mV pk-pk max. |
|  | 54V .....                     | 200mV RMS / 540mV pk-pk max. |
| Current Limit .....                                  |                               | 110%-160% Nominal Output     |
| Over Voltage Protection Protection trip Range, ..... | % Vo 5V nom. ....             | 112%-130%                    |
|  | % Vo Others nom. ....         | 122%-130%                    |
| Short Circuit Protection .....                       |                               | Continuous                   |
| External Trim Adj. Range.....                        | Vo 5V&54V .....               | -20% to +10%                 |
|  | Vo 12V&24V .....              | -20% to +20%                 |
| Transient Response: 75% to 100% step load change     | Error Band Vout Nominal ..... | ±5%                          |
|  | Recovery Time .....           | <250µ sec                    |
| Start up Time .....                                  |                               | 30ms typ.                    |

## GENERAL SPECIFICATIONS:

|  |                      |  |
|--|----------------------|--|
| Efficiency .....                         |                      | See Table                                      |
| Isolation Voltage ( 1 minute; ) .....    | Input/Output .....   | 3000Vdc min.                                   |
|  | Input/Case .....     | 1600Vdc min.                                   |
|  | Output/Case .....    | 1600Vdc min.                                   |
| Switching Frequency .....                |                      | 300 KHz typ.                                   |
| Operating Case Temperature .....         |                      | -40°C to +105°C                                |
| Output Current Range.....                | Vin= 12 to 16V ..... | See Power Derating Curve                       |
| Storage Temperature .....                |                      | -55°C to +125°C                                |
| Thermal Shutdown, Case Temperature ..... |                      | 110°C typ.                                     |
| Humidity .....                           |                      | 95% RH max. Non condensing                     |
| MTBF ( MIL-HDBK - 217F, GB, 25°C) .....  | Full Load .....      | TBD Khrs typ.                                  |
| Fire & Smoke .....                       |                      | Meet EN45545-2                                 |
| EMI .....                                |                      | Meets EN50155 Compliant (with external filter) |
| Safety Meets.....                        |                      | CB Meets IEC62368-1, UL62368-1 2nd             |
| Dimensions .....                         |                      | 2.45x1.05x0.50 inches (62,2x26,6x12.7 mm)      |
| Case Material .....                      |                      | Plastic, UL 94V-0                              |
| Base Plate Material .....                |                      | Aluminum Base Plate with Plastic Case          |
| Weight.....                              |                      | TBD g  |

### NOTE:

- Output ripple and noise measured with 10uF aluminum solid capacitor and 1uF ceramic capacitor across output.
- An external input capacitor 100uF for 48Vin models and 220uF for 24Vin models are recommended to reduce input ripple voltage

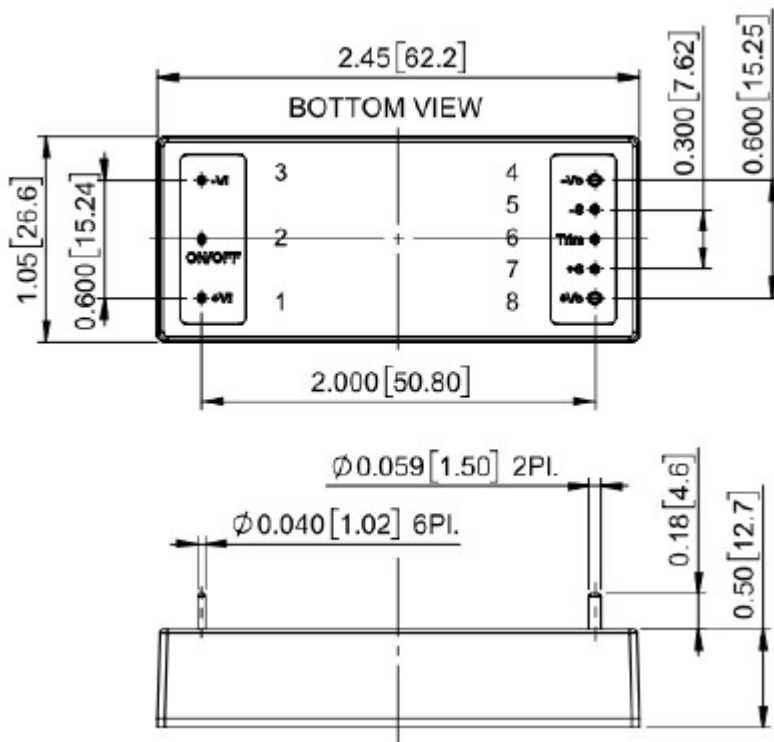
All Specifications Typical At Nominal Line, Full Load, and 25°C Unless Otherwise Noted.

**Case Dimensions**

**Series DV100EB4**

All Dimensions in Inches (mm)

Tolerance Inches      x.xx±0.02      x.xxx±0.010  
 Millimeters          x.x±0.5        x.xx±0.25



| PIN CONNECTION |           |
|----------------|-----------|
| Pin            | Function  |
| 1              | +V Input  |
| 2              | On/Off    |
| 3              | -V Input  |
| 4              | -V Output |
| 5              | -Sense    |
| 6              | Trim      |
| 7              | +Sense    |
| 8              | +V Output |