



# COIL TECHNOLOGY CORPORATION

## 2W 14Pin DIP DC/DC CONVERTERS

### Features

**14 Pin DIP Package**  
**-40 to +85 operating temp**  
**CE EN60950-1 and CE EN60601-1 certified**

| <b>Series</b>     | <b>Description</b>                                 | <b>Page</b> |
|-------------------|--|-------------|
| <b>MDH</b>        | <b>2W Single o/p<br/>1kV Isolation, 2kV option</b> | <b>2</b>    |
| <b>MDH-xxxxD</b>  | <b>2W Dual o/p<br/>1kV Isolation, 2kV option</b>   | <b>4</b>    |
| <b>MDVH</b>       | <b>2W single o/p<br/>3kV Isolation, 4kV option</b> | <b>6</b>    |
| <b>MDVH-xxxxD</b> | <b>2W dual o/p<br/>3kV Isolation, 4kV option</b>   | <b>8</b>    |



**ELECTRICAL SPECIFICATIONS: UNREGULATED**

- Input voltage range -----  $\pm 10\%$
- Input filter----- Capacitor.
- Output voltage accuracy -----  $\pm 5\%$
- Line voltage regulation ----- 1.2%Typ./1%Of Vin
- Load voltage regulation (10% ~ 100%)-  
5V Output Types----- 15% Max.  
9V,12V and 15V Output Types----- 10% Max.
- Ripple&noise/20MHZ BW ----- 150mV P-P Max.
- Efficiency at full load----- 70% Min.
- Isolation voltage ----- 1000 Vdc/1sec.
- Short circuit protection ----- 1.0 Second
- Operating temperature range -----  $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$
- Storage temperature range -----  $-55^{\circ}\text{C}$  to  $125^{\circ}\text{C}$
- Isolation resistance ----- 226G  $\Omega$
- Isolation capacity ----- 54pF Typ.
- Package weight----- 2.8g
- Meet CE EN-60950-1 Certified、CE  
EN-60601-1 Certified

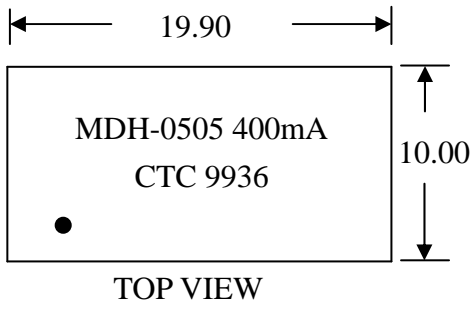


Note: Measured @  $25^{\circ}\text{C}$  With The Condition of  
Vin = Nominal And Full Load.

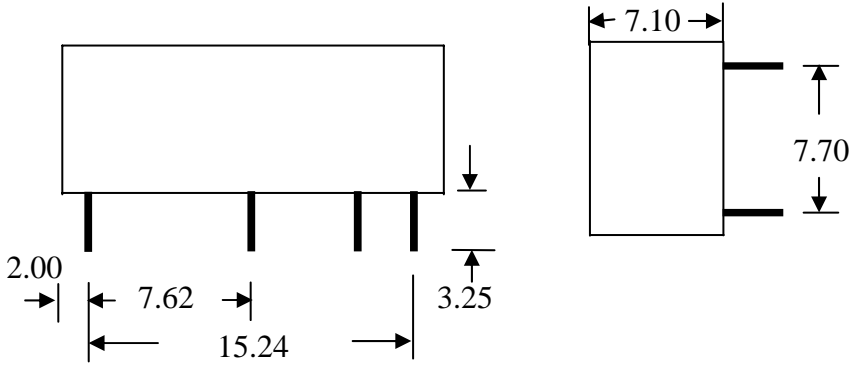
**Note: Add H after P/N for isolation 2000Vdc**

| Selection Guide |                     |                      |                     |                |
|-----------------|---------------------|----------------------|---------------------|----------------|
| Model Number    | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (%) |
| MDH-XX3.3       | 3.3,5,9,12,15,24    | 3.3                  | 600                 | 70             |
| MDH-XX05        | 3.3,5,9,12,15,24    | 5                    | 400                 | 70             |
| MDH-XX09        | 3.3,5,9,12,15,24    | 9                    | 222                 | 72             |
| MDH-XX12        | 3.3,5,9,12,15,24    | 12                   | 166                 | 75             |
| MDH-XX15        | 3.3,5,9,12,15,24    | 15                   | 133                 | 78             |
| MDH-XX24        | 3.3,5,9,12,15,24    | 24                   | 83                  | 80             |

# Package Style And Pinning (mm)



| PIN | FUNCTION |
|-----|----------|
| 1   | -VIN     |
| 7   | NC       |
| 8   | -VOUT    |
| 9   | +VOUT    |
| 11  | NC       |
| 14  | +VIN     |



\*Note : Terminal -----0.51 X 0.25 Flat Pin  
TOL. :  $\pm 0.25$ mm  
UNIT : mm



**ELECTRICAL SPECIFICATIONS: UNREGULATED**

- Input voltage range -----  $\pm 10\%$
- Input filter----- Capacitor.
- Output voltage accuracy -----  $\pm 5\%$
- Line voltage regulation ----- 1.2%Typ./1%Of Vin
- Load voltage regulation (10% ~ 100%)-  
5V Output Types----- 15% Max.  
9V,12V and 15V Output Types----- 10% Max.
- Ripple&noise/20MHZ BW -----  $\pm 150\text{mV P-P Max.}$
- Efficiency at full load----- 70% Min.
- Isolation voltage ----- 1000 Vdc/1sec.
- Short circuit protection ----- 1.0 Second
- Operating temperature range -----  $-40^{\circ}\text{C to } 85^{\circ}\text{C}$
- Storage temperature range -----  $-55^{\circ}\text{C to } 125^{\circ}\text{C}$
- Isolation resistance ----- 10G  $\Omega$
- Isolation capacity ----- 56pF Typ.
- Package weight----- 2.8g
- Meet CE EN-60950-1 Certified、CE  
EN-60601-1 Certified

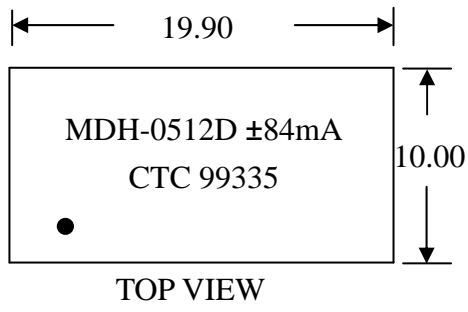


Note: Measured @ 25°C With The Condition of Vin = Nominal And Full Load.

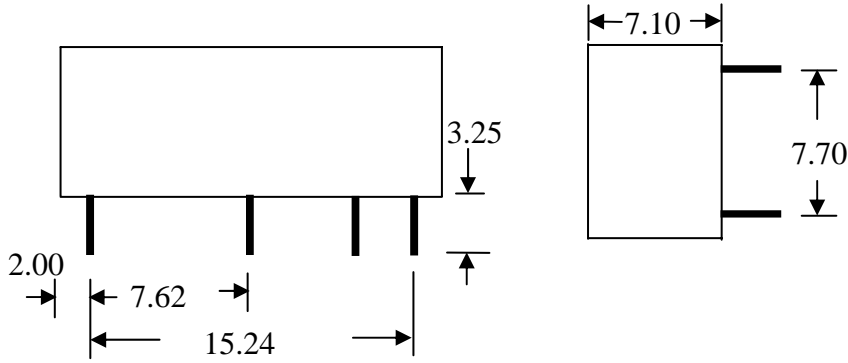
**Note: Add H after P/N for isolation 2000Vdc**

| Selection Guide |                     |                      |                     |                |
|-----------------|---------------------|----------------------|---------------------|----------------|
| Model Number    | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (%) |
| MDH-XX3.3D      | 3.3,5,9,12,15,24    | $\pm 3.3$            | $\pm 303$           | 70             |
| MDH-XX05D       | 3.3,5,9,12,15,24    | $\pm 5$              | $\pm 200$           | 74             |
| MDH-XX09D       | 3.3,5,9,12,15,24    | $\pm 9$              | $\pm 111$           | 75             |
| MDH-XX12D       | 3.3,5,9,12,15,24    | $\pm 12$             | $\pm 83$            | 78             |
| MDH-XX15D       | 3.3,5,9,12,15,24    | $\pm 15$             | $\pm 66$            | 80             |
| MDH-XX24D       | 3.3,5,9,12,15,24    | $\pm 24$             | $\pm 42$            | 82             |

# Package Style And Pinning (mm)



| PIN | FUNCTION |
|-----|----------|
| 1   | -VIN     |
| 7   | NC       |
| 8   | COM.     |
| 9   | +VOUT    |
| 11  | -VOUT    |
| 14  | +VIN     |



\*Note : Terminal---- 0.51 X 0.25 Flat Pin  
TOL. : ±0.25mm  
UNIT : mm

**ELECTRICAL SPECIFICATIONS: UNREGULATED**

- Input voltage range -----  $\pm 10\%$
- Output voltage accuracy -----  $\pm 5\%$
- Line voltage regulation ----- 1.2%Typ./1%Of Vin
- Load voltage regulation (10% ~ 100%)-  
5V Output Types----- 15% Max.  
9V~15V Output Types----- 10% Max.
- Ripple&noise/20MHZ BW ----- 150mV P-P Max.
- Efficiency at full load----- 70% Min.
- Isolation voltage----- 3000Vdc/1sec.
- Short circuit protection----- 1.0 Second
- Operating temperature range -----  $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$
- Storage temperature range -----  $-55^{\circ}\text{C}$  to  $125^{\circ}\text{C}$
- Meet CE EN-60950-1 Certified 、 CE EN-60601-1 Certified

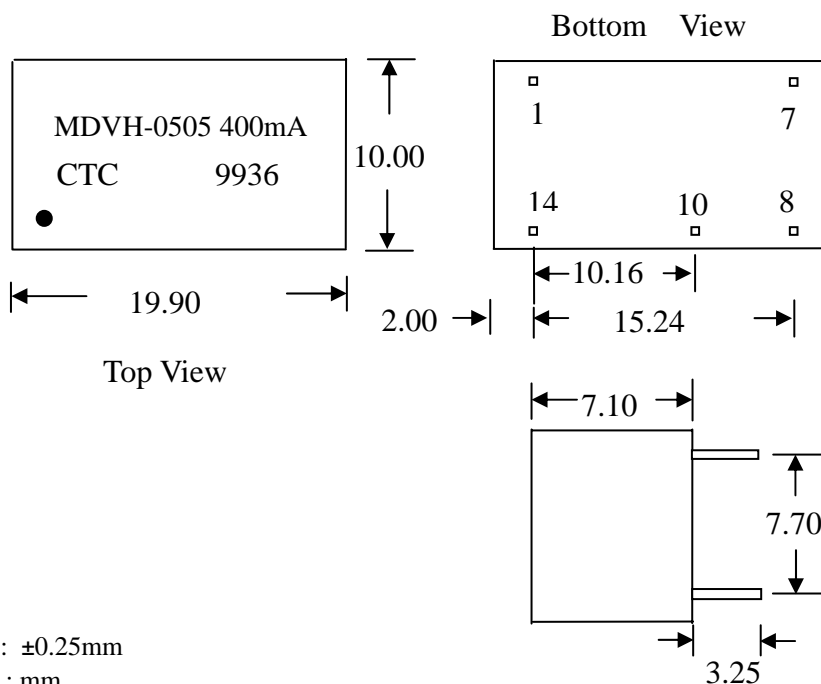


**Note: Add H after P/N for isolation 4000Vdc**

**Selection Guide**

| Model Number | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (%) |
|--------------|---------------------|----------------------|---------------------|----------------|
| MDVH-XX3.3   | 3.3,5,9,12,15,24    | 3.3                  | 606                 | 70             |
| MDVH-XX05    | 3.3,5,9,12,15,24    | 5                    | 400                 | 70             |
| MDVH-XX09    | 3.3,5,9,12,15,24    | 9                    | 222                 | 75             |
| MDVH-XX12    | 3.3,5,9,12,15,24    | 12                   | 166                 | 78             |
| MDVH-XX15    | 3.3,5,9,12,15,24    | 15                   | 133                 | 80             |
| MDVH-XX24    | 3.3,5,9,12,15,24    | 24                   | 83                  | 82             |

**Package Style And Pinning (mm)**



| PIN | FUNCTION |
|-----|----------|
| 1   | -VIN     |
| 7   | NC       |
| 8   | +VOUT    |
| 10  | -VOUT    |
| 14  | +VIN     |

TOL. :  $\pm 0.25\text{mm}$   
UNIT : mm

**ELECTRICAL SPECIFICATIONS:**

- Input voltage range -----  $\pm 10\%$
- Output voltage accuracy -----  $\pm 5\%$
- Line voltage regulation -----  $1.2\% \text{Typ.}/1\% \text{Of Vin}$
- Load voltage regulation (10% ~ 100%)-  
   5V Output Types-----  $\pm 15\% \text{Max.}$   
   9V~15V Output Types-----  $\pm 10\% \text{Max.}$
- Ripple&noise/20MHZ BW -----  $\pm 150\text{mV P-P Max.}$
- Efficiency at full load-----  $70\% \text{Min.}$
- Isolation voltage-----  $3000\text{Vdc}/1\text{sec.}$
- Short circuit protection-----  $1.0 \text{Second}$
- Operating temperature range -----  $-40^{\circ}\text{C to } 85^{\circ}\text{C}$
- Storage temperature range -----  $-55^{\circ}\text{C to } 125^{\circ}\text{C}$
- Meet CE EN-60950-1 Certified、CE EN-60601-1 Certified

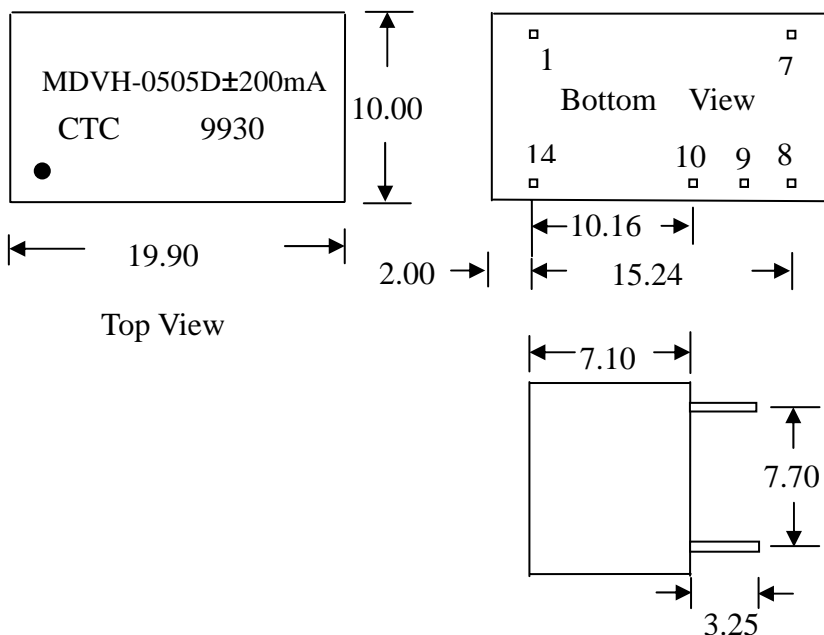


**Note: Add H after P/N for isolation 4000Vdc**

**Selection Guide**

| Model Number | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (%) |
|--------------|---------------------|----------------------|---------------------|----------------|
| MDVH-XX3.3D  | 3.3,5,9,12,15,24    | $\pm 3.3$            | $\pm 303$           | 70             |
| MDVH-XX05D   | 3.3,5,9,12,15,24    | $\pm 5$              | $\pm 200$           | 70             |
| MDVH-XX09D   | 3.3,5,9,12,15,24    | $\pm 9$              | $\pm 111$           | 75             |
| MDVH-XX12D   | 3.3,5,9,12,15,24    | $\pm 12$             | $\pm 83$            | 78             |
| MDVH-XX15D   | 3.3,5,9,12,15,24    | $\pm 15$             | $\pm 66$            | 80             |
| MDVH-XX24D   | 3.3,5,9,12,15,24    | $\pm 24$             | $\pm 42$            | 82             |

**Package Style And Pinning (mm)**



| PIN | FUNCTION |
|-----|----------|
| 1   | -VIN     |
| 7   | NC       |
| 8   | +VOUT    |
| 9   | COM.     |
| 10  | -VOUT    |
| 14  | +VIN     |

TOL. :  $\pm 0.25\text{mm}$   
UNIT : mm