



COIL TECHNOLOGY CORPORATION

1W 7 Pin SIP DC/DC CONVERTERS

Features

7 Pin SIP Package

-40 to +85 operating temp

CE EN60950-1 and CE EN60601-1 certified

| Series | Description | Page |
|-------------------|--|-------------|
| MS | 1W Single o/p 1kV Isolation, 2kV option | 2 |
| MS-xxxxD | 1W Dual o/p 1kV Isolation, 2kV option | 3 |
| MSB | MD series with alt pinout | 5 |
| MSV | 1W single o/p 3kV Isolation | 6 |
| MSV-xxxxD | 1W dual o/p 3kV Isolation | 7 |
| MSV-xxxxH | 1W single o/p 4kV Isolation | 8 |
| MSV-xxxxDH | 1W dual o/p 4kV Isolation | 9 |
| MSEN | 1W single o/p 5.2kV Isolation | 10 |
| MSEN-xxxxD | 1W dual o/p 5.2kV Isolation | 12 |
| MSR | 1W single o/p regulated | 14 |
| MSR-xxxxD | 1W dual o/p regulated | 16 |

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%)-
1.8V,3.3V Output Types----- 20% Max.
5V Output Types----- 15% Max.
9V,12V,15V,24V Output Types----- 10% Max.
- Ripple&noise/20MHZ BW ----- 100mV P-P Max.
- Efficiency at full load----- 70% Min.
- Isolation voltage ----- 1000Vdc/1sec.
- Short circuit protection ----- 1.0 Second
- Operating temperature range ----- -40°C to 85°C
- Storage temperature range ----- -55°C to 125°C
- Isolation resistance ----- 10G Ω Min.
- Isolation capacity ----- 75pF Typ.
- Package weight----- 2.2g
- Meet CE EN-60950-1 Certified、CE EN-60601-1 Certified

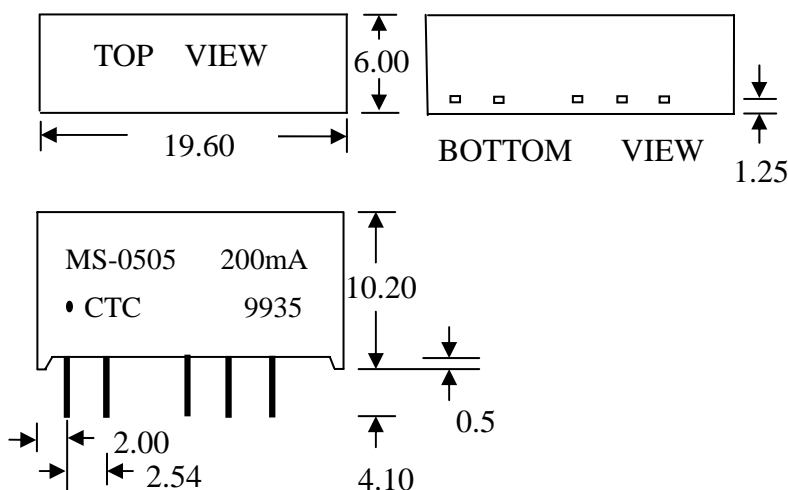


*Note: Measured @ 25°C With The Condition of
 *Note:Add H after P/N for isolation 2000Vdc.
 Vin = Nominal And Full Load.

Selection Guide

| Model Number | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (%) |
|--------------|---------------------|----------------------|---------------------|----------------|
| MS-XX1.8 | 3.3,5,9,12,15,24 | 1.8 | 555 | 70 |
| MS-XX3.3 | 3.3,5,9,12,15,24 | 3.3 | 300 | 70 |
| MS-XX05 | 3.3,5,9,12,15,24 | 5 | 200 | 70 |
| MS-XX09 | 3.3,5,9,12,15,24 | 9 | 111 | 75 |
| MS-XX12 | 3.3,5,9,12,15,24 | 12 | 84 | 78 |
| MS-XX15 | 3.3,5,9,12,15,24 | 15 | 66 | 80 |
| MS-XX24 | 3.3,5,9,12,15,24 | 24 | 42 | 80 |

Package Style And Pinning (mm)



| PIN | FUNCTION |
|-----|----------|
| 1 | +VIN |
| 2 | -VIN |
| 4 | NC |
| 5 | -VOUT |
| 6 | +VOUT |

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

ELECTRICAL SPECIFICATIONS: UNREGULATED

- Input voltage range ----- $\pm 10\%$
- Input filter----- Capacitor.
- Output voltage accuracy ----- $\pm 5\%$
- Line voltage regulation ----- $1.2\% \text{Typ.}/1\% \text{Of } V_{in}$
- Load voltage regulation (10% ~ 100%)-
 - $\pm 1.8V, \pm 3.3V$ Output Types----- $20\% \text{ Max.}$
 - $\pm 5V$ Output Types----- $15\% \text{ Max.}$
 - $\pm 9V, \pm 12V, \pm 15V, \pm 24V$ Output Types----- $10\% \text{ Max.}$
- Ripple&noise/20MHZ BW ----- $\pm 75mV \text{ P-P Max.}$
- Efficiency at full load----- $70\% \text{ Min.}$
- Isolation voltage ----- $1000V_{dc}/1\text{sec.}$
- 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 ----- $10G \Omega \text{ Min.}$
- Isolation capacity ----- $75pF \text{ Typ.}$
- Package weight----- $2.2g$
- Meet CE EN-60950-1 Certified、CE EN-60601-1 Certified

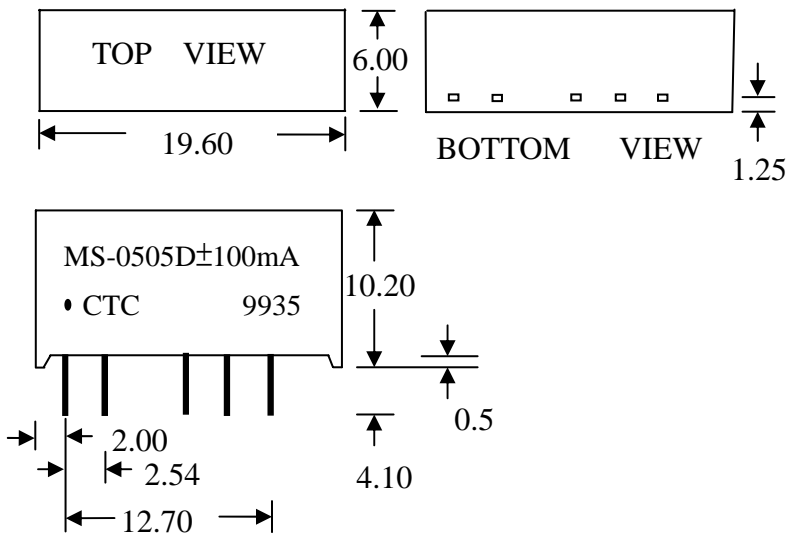


Note: Measured @ 25°C With The Condition of
 Note:Add H after P/N for isolation $2000V_{dc}$.
 V_{in} = Nominal And Full Load.

Selection Guide

| Model Number | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (%) |
|--------------|---------------------|----------------------|---------------------|----------------|
| MS-XX1.8D | 3.3,5,9,12,15,24 | ± 1.8 | ± 278 | 70 |
| MS-XX3.3D | 3.3,5,9,12,15,24 | ± 3.3 | ± 152 | 70 |
| MS-XX05D | 3.3,5,9,12,15,24 | ± 5 | ± 100 | 70 |
| MS-XX09D | 3.3,5,9,12,15,24 | ± 9 | ± 55 | 75 |
| MS-XX12D | 3.3,5,9,12,15,24 | ± 12 | ± 42 | 78 |
| MS-XX15D | 3.3,5,9,12,15,24 | ± 15 | ± 33 | 80 |
| MS-XX24D | 3.3,5,9,12,15,24 | ± 24 | ± 21 | 80 |

Package Style And Pinning (mm)



| PIN | FUNCTION |
|-----|----------|
| 1 | +VIN |
| 2 | -VIN |
| 4 | -VOUT |
| 5 | COM. |
| 6 | +VOUT |

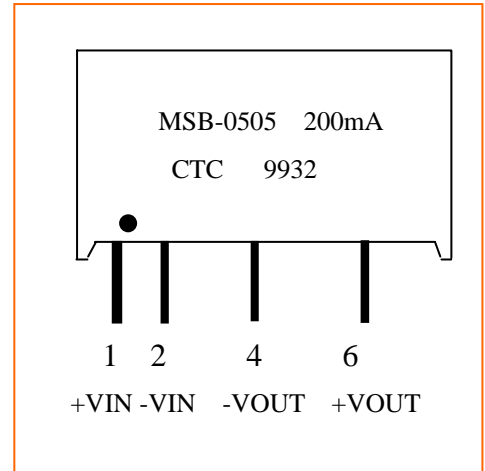
Note : Terminal ----- 0.51 X 0.25 Flat Pin
TOL. : ±0.25mm
UNIT : mm

CTC COIL TECHNOLOGY CORPORATION

DC/DC CONVERTER MSB-XXXX SERIES 1W SINGLE OUTPUT

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 ----- 100mV P-P Max.
- Efficiency at full load----- 70% Min.
- Isolation voltage ----- 1000Vdc/1sec.
- Short circuit protection ----- 1.0 Second
- Operating temperature range ----- -40°C to 85°C
- Storage temperature range ----- -55°C to 125°C
- Isolation resistance ----- 10G Ω Min.
- Isolation capacity ----- 75pF Typ.
- Package weight----- 2.2g



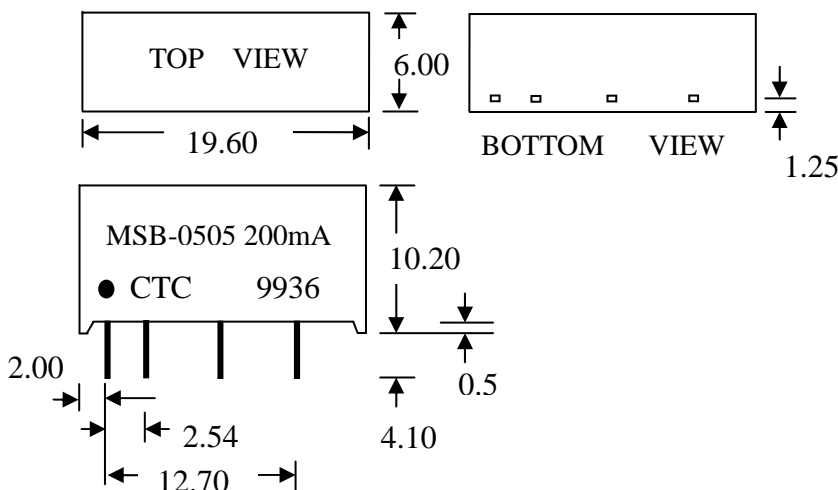
*Note: Measured @ 25 With The Condition of Vin = Nominal And Full Load.

- Note:1. Add H after P/N for isolation 2000Vdc**
- 2. Isolation voltage 3000Vdc upon request**

Selection Guide

| Model Number | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (%) |
|--------------|---------------------|----------------------|---------------------|----------------|
| MSB-XX1.8 | 3.3,5,9,12,15,24 | 1.8 | 555 | 68 |
| MSB-XX3.3 | 3.3,5,9,12,15,24 | 3.3 | 300 | 68 |
| MSB-XX05 | 3.3,5,9,12,15,24 | 5 | 200 | 70 |
| MSB-XX09 | 3.3,5,9,12,15,24 | 9 | 111 | 75 |
| MSB-XX12 | 3.3,5,9,12,15,24 | 12 | 84 | 78 |
| MSB-XX15 | 3.3,5,9,12,15,24 | 15 | 66 | 80 |
| MSB-XX24 | 3.3,5,9,12,15,24 | 24 | 24 | 70 |

Package Style And Pinning (mm)



| PIN | FUNCTION |
|-----|----------|
| 1 | +VIN |
| 2 | -VIN |
| 4 | -VOUT |
| 6 | +VOUT |

*Note : Terminal ----- 0.51 X 0.25 Flat Pin

TOL. : $\pm 0.25\text{mm}$
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%)-
1.8V,3.3V Output Types----- 20% Max.
5V Output Types----- 15% Max.
9V,12V,15V,24V Output Types----- 10% Max.
- Ripple&noise/20MHZ BW ----- 100mV P-P Max.
- Efficiency at full load----- 70% Min.
- Isolation voltage ----- 3000 Vdc/1sec.
- Short circuit protection ----- 1.0 Second
- Operating temperature range ----- -40°C to 85°C
- Storage temperature range ----- -55°C to 125°C
- Isolation resistance ----- 15G Ω Min.
- Isolation capacity ----- 60pF Typ.
- Package weight----- 2.1g
- Meet CE EN-60950-1 Certified、 CE
EN-60601-1 Certified

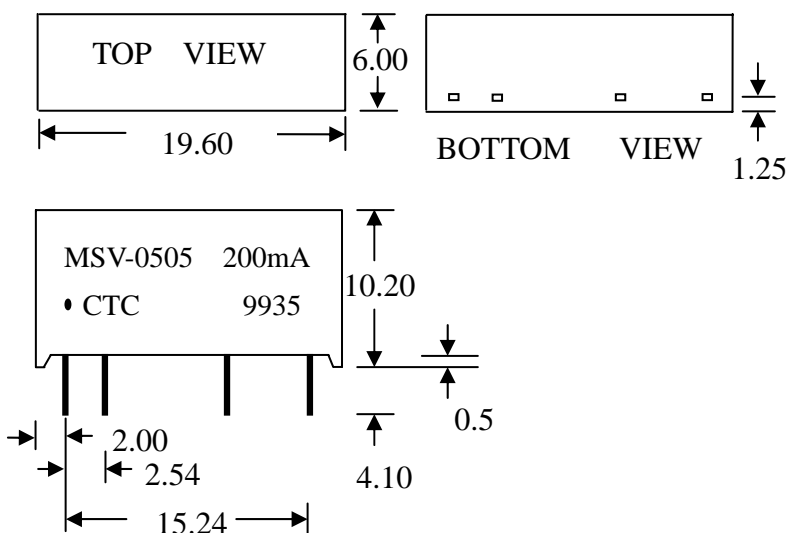


*Note: Measured @ 25 With The Condition of Vin = Nominal And Full Load.

Selection Guide

| Model Number | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (%) |
|--------------|---------------------|----------------------|---------------------|----------------|
| MSV-XX1.8 | 3.3,5,9,12,15,24 | 1.8 | 555 | 70 |
| MSV-XX3.3 | 3.3,5,9,12,15,24 | 3.3 | 300 | 70 |
| MSV-XX05 | 3.3,5,9,12,15,24 | 5 | 200 | 70 |
| MSV-XX09 | 3.3,5,9,12,15,24 | 9 | 111 | 75 |
| MSV-XX12 | 3.3,5,9,12,15,24 | 12 | 84 | 78 |
| MSV-XX15 | 3.3,5,9,12,15,24 | 15 | 66 | 80 |
| MSV-XX24 | 3.3,5,9,12,15,24 | 24 | 42 | 80 |

Package Style And Pinning (mm)



| PIN | FUNCTION |
|-----|----------|
| 1 | +VIN |
| 2 | -VIN |
| 5 | -VOUT |
| 7 | +VOUT |

*Note : Terminal -----0.51x 0.25 Flat Pin
TOL. : $\pm 0.25\text{mm}$
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%)-
 - $\pm 1.8V, \pm 3.3V$ Output Types----- 20% Max.
 - $\pm 5V$ Output Types----- 15% Max.
 - $\pm 9V, \pm 12V, \pm 15V, \pm 24V$ Output Types---- 10% Max.
- Ripple&noise/20MHZ BW ----- $\pm 100mV$ P-P Max.
- Efficiency at full load----- 70% Min.
- Isolation voltage ----- 3000 Vdc/1sec.
- Short circuit protection ----- 1.0 Second
- Operating temperature range ----- $-40^{\circ}C$ to $85^{\circ}C$
- Storage temperature range ----- $-55^{\circ}C$ to $125^{\circ}C$
- Isolation resistance ----- 15G Ω Min.
- Isolation capacity ----- 60pF Typ.
- Package weight----- 2.1g
- Meet CE EN-60950-1 Certified、 CE EN-60601-1 Certified

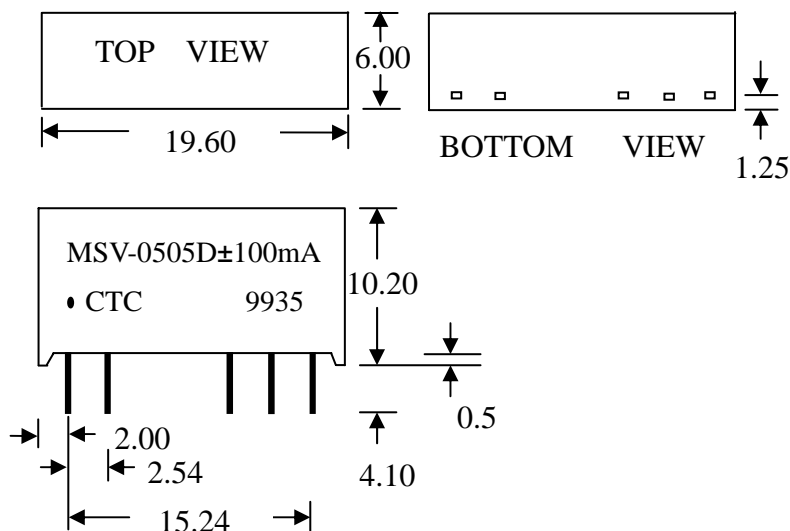


Note: Measured @ 25 With The Condition of Vin = Nominal And Full Load.

Selection Guide

| Model Number | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (%) |
|--------------|---------------------|----------------------|---------------------|----------------|
| MSV-XX1.8D | 3.3,5,9,12,15,24 | ± 1.8 | ± 278 | 70 |
| MSV-XX3.3D | 3.3,5,9,12,15,24 | ± 3.3 | ± 152 | 70 |
| MSV-XX05D | 3.3,5,9,12,15,24 | ± 5 | ± 100 | 70 |
| MSV-XX09D | 3.3,5,9,12,15,24 | ± 9 | ± 55 | 75 |
| MSV-XX12D | 3.3,5,9,12,15,24 | ± 12 | ± 42 | 78 |
| MSV-XX15D | 3.3,5,9,12,15,24 | ± 15 | ± 33 | 80 |
| MSV-XX24D | 3.3,5,9,12,15,24 | ± 24 | ± 21 | 80 |

Package Style And Pinning (mm)



| PIN | FUNCTION |
|-----|----------|
| 1 | +VIN |
| 2 | -VIN |
| 5 | -VOUT |
| 6 | COM |
| 7 | +VOUT |

*Note : Terminal -----0.51x 0.25 Flat Pin
TOL. : $\pm 0.25mm$
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 ----- 100mV P-P Max.
- Efficiency at full load----- 70% Min.
- Isolation voltage ----- 4000 Vdc/1sec.
- Short circuit protection ----- 1.0 Second
- Operating temperature range ----- -40°C to 85°C
- Storage temperature range ----- -55°C to 125°C
- Isolation resistance ----- 15G Ω Min.
- Isolation capacity ----- 60pF Typ.
- Package weight----- 2.1g
- Meet CE EN-60950-1 Certified、 CE
EN-60601-1 Certified

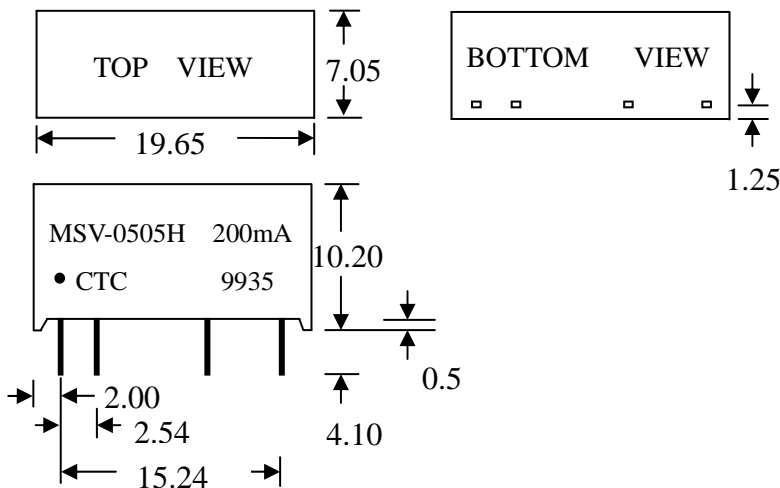


*Note: Measured @ 25 With The Condition of Vin = Nominal And Full Load.

Selection Guide

| Model Number | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (%) |
|--------------|---------------------|----------------------|---------------------|----------------|
| MSV-XX1.8H | 3.3,5,9,12,15,24 | 1.8 | 555 | 70 |
| MSV-XX3.3H | 3.3,5,9,12,15,24 | 3.3 | 300 | 70 |
| MSV-XX05H | 3.3,5,9,12,15,24 | 5 | 200 | 70 |
| MSV-XX09H | 3.3,5,9,12,15,24 | 9 | 111 | 75 |
| MSV-XX12H | 3.3,5,9,12,15,24 | 12 | 84 | 78 |
| MSV-XX15H | 3.3,5,9,12,15,24 | 15 | 66 | 80 |
| MSV-XX24H | 3.3,5,9,12,15,24 | 24 | 42 | 80 |

Package Style And Pinning (mm)



| PIN | FUNCTION |
|-----|----------|
| 1 | +VIN |
| 2 | -VIN |
| 5 | -VOUT |
| 7 | +VOUT |

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

ELECTRICAL SPECIFICATIONS: UNREGULATED

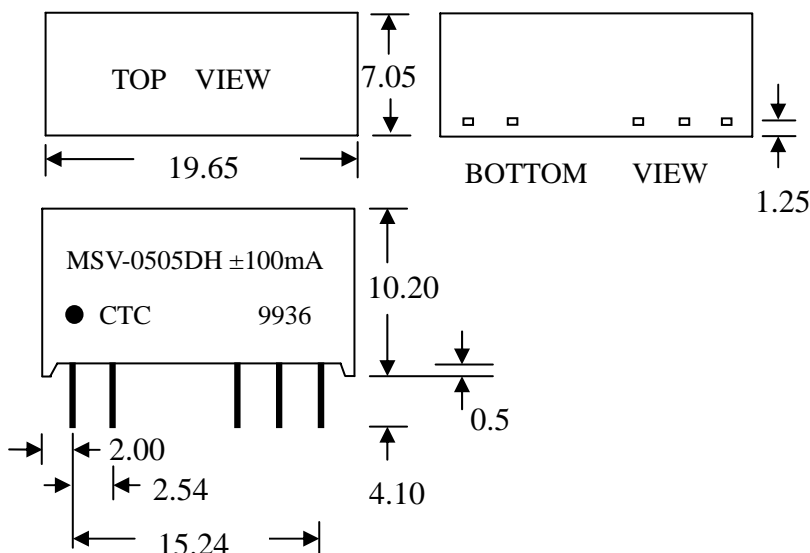
- Input voltage range ----- $\pm 10\%$
- Input filter----- Capacitor.
- Output voltage accuracy ----- $\pm 5\%$
- Line voltage regulation ----- 1.2%Typ./1%Of Vin
- Load voltage regulation (10% ~ 100%)-
 $\pm 1.8V, \pm 3.3V$ Output Types----- 20% Max.
 $\pm 5V$ Output Types----- 15% Max.
 $\pm 9V, \pm 12V, \pm 15V, \pm 24V$ Output Types---- 10% Max.
- Ripple&noise/20MHZ BW ----- $\pm 100mV$ P-P Max.
- Efficiency at full load----- 70% Min.
- Isolation voltage ----- 4000 Vdc/1sec.
- Short circuit protection ----- 1.0 Second
- Operating temperature range ----- $-40^{\circ}C$ to $85^{\circ}C$
- Storage temperature range ----- $-55^{\circ}C$ to $125^{\circ}C$
- Isolation resistance ----- 15G Ω Min.
- Isolation capacity ----- 60pF Typ.
- Package weight----- 2.1g
- Meet CE EN-60950-1 Certified、 CE EN-60601-1 Certified



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

Selection Guide

| Model Number | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (%) |
|--------------|---------------------|----------------------|---------------------|----------------|
| MSV-XX1.8DH | 3.3,5,9,12,15,24 | ± 1.8 | ± 278 | 70 |
| MSV-XX3.3DH | 3.3,5,9,12,15,24 | ± 3.3 | ± 152 | 70 |
| MSV-XX05DH | 3.3,5,9,12,15,24 | ± 5 | ± 100 | 70 |
| MSV-XX09DH | 3.3,5,9,12,15,24 | ± 9 | ± 55 | 75 |
| MSV-XX12DH | 3.3,5,9,12,15,24 | ± 12 | ± 42 | 78 |
| MSV-XX15DH | 3.3,5,9,12,15,24 | ± 15 | ± 33 | 80 |
| MSV-XX24DH | 3.3,5,9,12,15,24 | ± 24 | ± 21 | 80 |

Package Style And Pinning (mm)


| PIN | FUNCTION |
|-----|----------|
| 1 | +VIN |
| 2 | -VIN |
| 5 | -VOUT |
| 6 | COM. |
| 7 | +VOUT |

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

ELECTRICAL SPECIFICATIONS: UNREGULATED

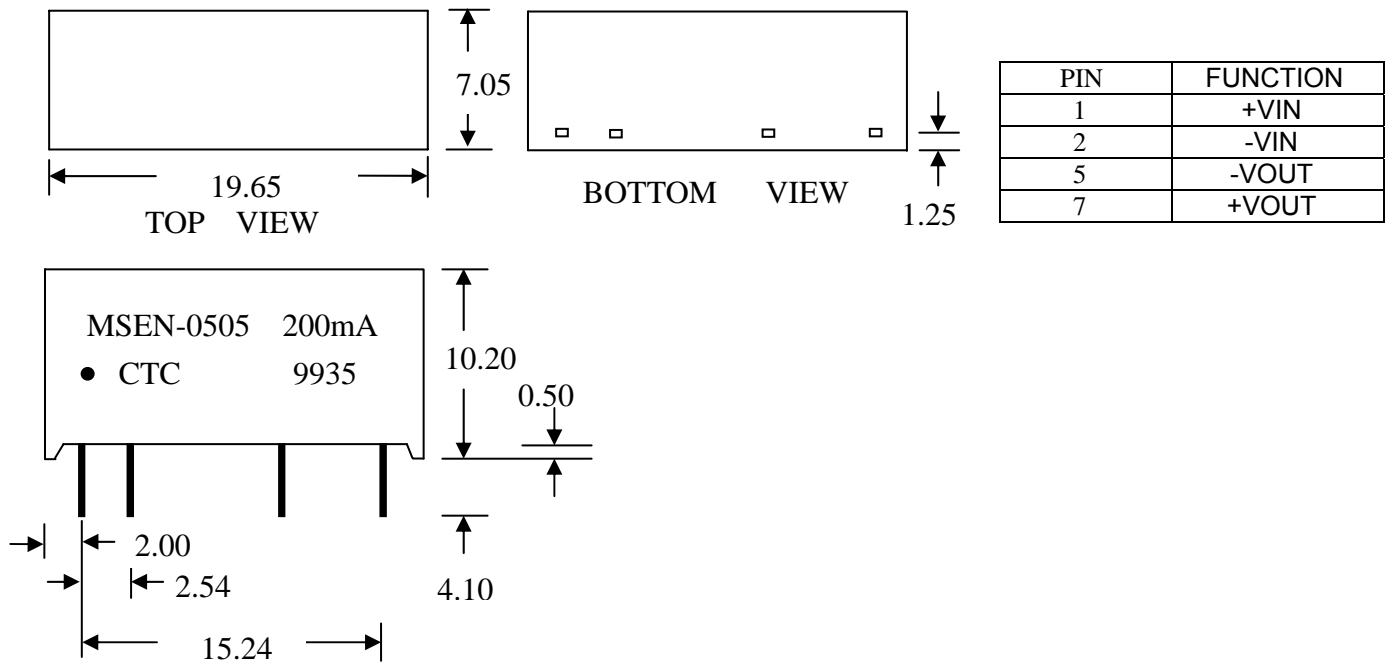
- Input voltage range ----- $\pm 10\%$
- Input filter----- Capacitor.
- Output voltage accuracy ----- $\pm 5\%$
- Line voltage regulation ----- 1.2%Typ./1%Of Vin
- Load voltage regulation (10% ~ 100%)-
5V Output Types----- 15% Max.
9V,12V and 15V Output Types----- 10% Max.
- Ripple&noise/20MHZ BW ----- 100mV P-P Max.
- Efficiency at full load----- 70% Min.
- Isolation voltage ----- 5200 Vdc/1sec.
- Short circuit protection ----- 1.0 Second
- Operating temperature range ----- -40°C to 85°C
- Storage temperature range ----- -55°C to 125°C
- Isolation resistance ----- 20G Ω Min.
- Isolation capacity ----- 10pF Typ.
- Package weight----- 2.4g
- Meet CE EN-60950-1 Certified · CE
EN-60601-1 Certified



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

| Selection Guide | | | | |
|-----------------|---------------------|----------------------|---------------------|----------------|
| Part Number | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (%) |
| MSEN-0505 | 5 | 5 | 200 | 70 |
| MSEN-0509 | 5 | 9 | 111 | 75 |
| MSEN-0512 | 5 | 12 | 84 | 80 |
| MSEN-0515 | 5 | 15 | 66 | 82 |
| MSEN-1205 | 12 | 5 | 200 | 70 |
| MSEN-1209 | 12 | 9 | 111 | 75 |
| MSEN-1212 | 12 | 12 | 84 | 80 |
| MSEN-1215 | 12 | 15 | 66 | 82 |
| MSEN-1505 | 15 | 5 | 200 | 70 |
| MSEN-1509 | 15 | 9 | 111 | 75 |
| MSEN-1512 | 15 | 12 | 84 | 80 |
| MSEN-1515 | 15 | 15 | 66 | 82 |
| MSEN-2405 | 24 | 5 | 200 | 70 |
| MSEN-2409 | 24 | 9 | 111 | 75 |
| MSEN-2412 | 24 | 12 | 84 | 80 |
| MSEN-2415 | 24 | 15 | 66 | 82 |

Package Style And Pinning (mm)



*Note : Terminal ----- 0.51 X 0.25 Flat Pin

TOL. : ± 0.25 mm

UNIT : mm

ELECTRICAL SPECIFICATIONS: UNREGULATED

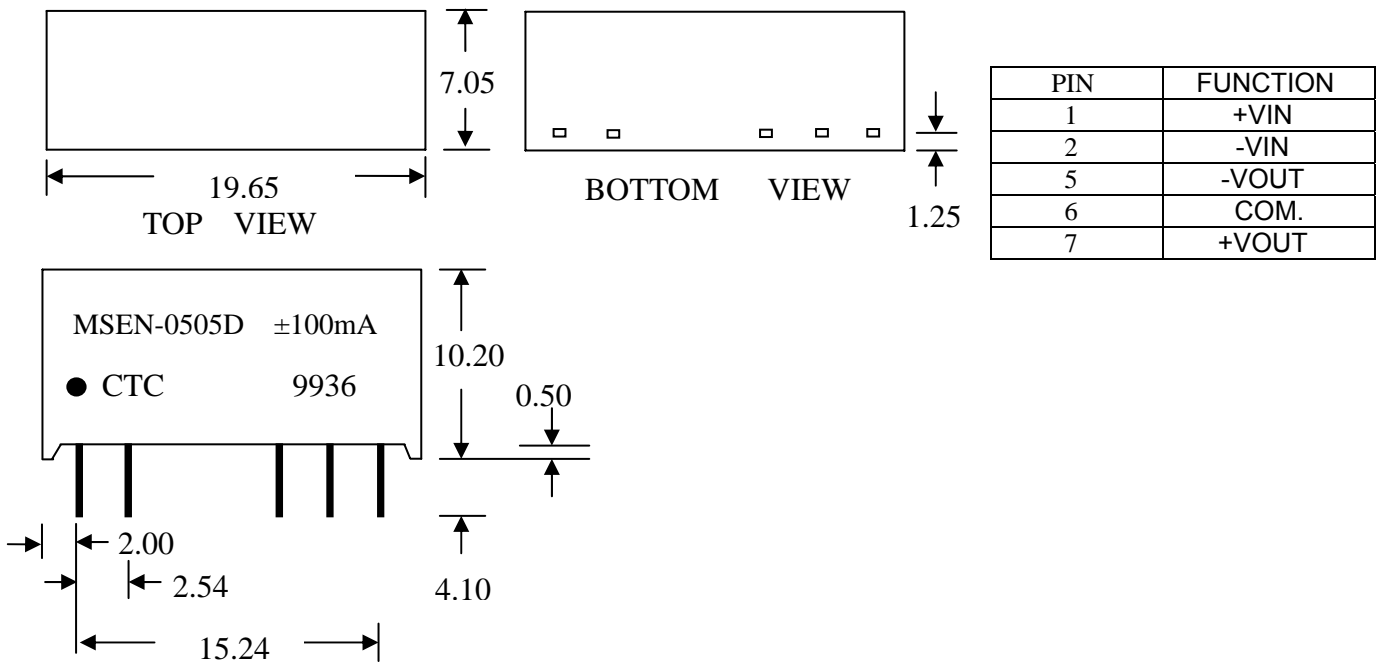
- Input voltage range ----- $\pm 10\%$
- Input filter----- Capacitor.
- Output voltage accuracy ----- $\pm 5\%$
- Line voltage regulation ----- 1.2%Typ./1%Of Vin
- Load voltage regulation (10% ~ 100%)-
5V Output Types----- 15% Max.
9V,12V and 15V Output Types----- 10% Max.
- Ripple&noise/20MHZ BW ----- $\pm 100\text{mV P-P Max.}$
- Efficiency at full load----- 70% Min.
- Isolation voltage ----- 5200 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 ----- 20G Ω Min.
- Isolation capacity ----- 10pF Typ.
- Package weight----- 2.4g
- Meet CE EN-60950-1 Certified · CE
EN-60601-1 Certified



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

| Selection Guide | | | | |
|-----------------|---------------------|----------------------|---------------------|----------------|
| Part Number | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) | Efficiency (%) |
| MSEN-0505D | 5 | ± 5 | ± 100 | 70 |
| MSEN-0509D | 5 | ± 9 | ± 56 | 75 |
| MSEN-0512D | 5 | ± 12 | ± 42 | 78 |
| MSEN-0515D | 5 | ± 15 | ± 33 | 80 |
| MSEN-1205D | 12 | ± 5 | ± 100 | 70 |
| MSEN-1209D | 12 | ± 9 | ± 56 | 75 |
| MSEN-1212D | 12 | ± 12 | ± 42 | 78 |
| MSEN-1215D | 12 | ± 15 | ± 33 | 80 |
| MSEN-1505D | 15 | ± 5 | ± 100 | 70 |
| MSEN-1509D | 15 | ± 9 | ± 56 | 75 |
| MSEN-1512D | 15 | ± 12 | ± 42 | 78 |
| MSEN-1515D | 15 | ± 15 | ± 33 | 80 |
| MSEN-2405D | 24 | ± 5 | ± 100 | 70 |
| MSEN-2409D | 24 | ± 9 | ± 56 | 75 |
| MSEN-2412D | 24 | ± 12 | ± 42 | 78 |
| MSEN-2415D | 24 | ± 15 | ± 33 | 80 |

Package Style And Pinning (mm)



*Note : Terminal ----- 0.51 X 0.25 Flat Pin

TOL. : ± 0.25 mm

UNIT : mm

ELECTRICAL SPECIFICATIONS: REGULATED

- Input voltage range ----- $\pm 5\%$
- Input voltage range (option)----- $(\pm 10\%)$
- Output voltage accuracy ----- $\pm 5\%$
- Line voltage regulation ----- $V_o \pm 1.0\%$
- Load voltage regulation ----- $V_o \pm 1.0\%$
- Ripple&noise/20MHZ BW ----- $\pm 100\text{mV P-P Max.}$
- Efficiency at full load----- 50% Min.
- Isolation voltage----- 1000 Vdc/1sec.
- Short circuit protection ----- 1.0 Second
- Operating temperature range ----- $-40^{\circ}\text{C to } 71^{\circ}\text{C}$
- Storage temperature range ----- $-55^{\circ}\text{C to } 125^{\circ}\text{C}$
- Meet CE EN-60950-1 Certified、CE EN-60601-1 Certified

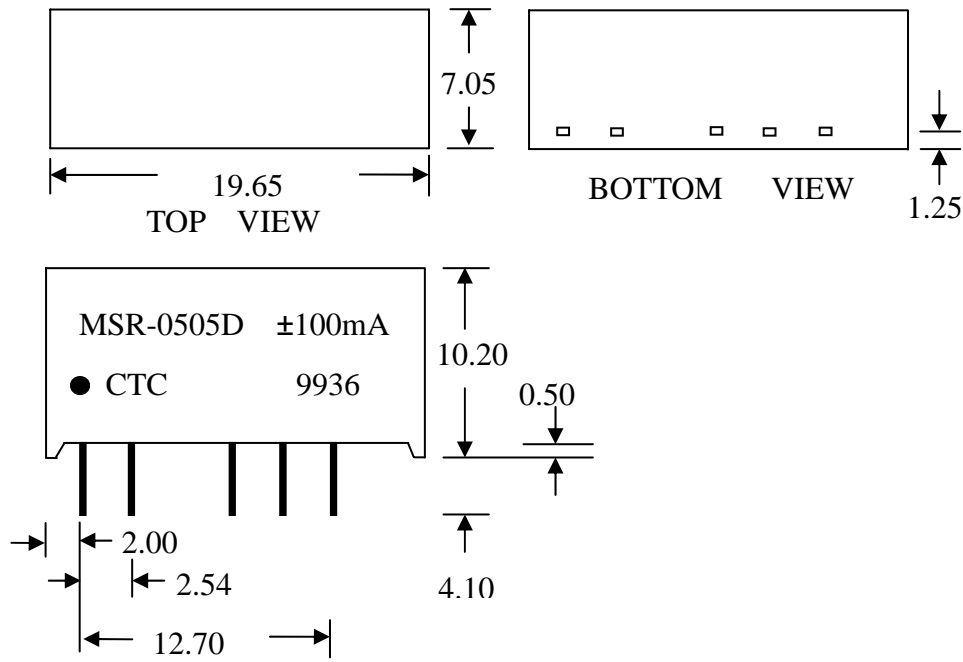


**Note: 1. Add H after P/N for isolation 3000Vdc
2. Add/T after P/N for input voltage----- $\pm 10\%$**

Selection Guide

| Part Number | Input Range (VDC) | Output Voltage (VDC) | Output Current (mA) |
|-------------|-------------------|----------------------|---------------------|
| MSR-0505D | 5 | ± 5 | ± 100 |
| MSR-0509D | 5 | ± 9 | ± 55 |
| MSR-0512D | 5 | ± 12 | ± 42 |
| MSR-0515D | 5 | ± 15 | ± 33 |
| MSR-1205D | 12 | ± 5 | ± 100 |
| MSR-1209D | 12 | ± 9 | ± 55 |
| MSR-1212D | 12 | ± 12 | ± 42 |
| MSR-1215D | 12 | ± 15 | ± 33 |
| MSR-1505D | 15 | ± 5 | ± 100 |
| MSR-1509D | 15 | ± 9 | ± 55 |
| MSR-1512D | 15 | ± 12 | ± 42 |
| MSR-1515D | 15 | ± 15 | ± 33 |
| MSR-2405D | 24 | ± 5 | ± 100 |
| MSR-2409D | 24 | ± 9 | ± 55 |
| MSR-2412D | 24 | ± 12 | ± 42 |
| MSR-2415D | 24 | ± 15 | ± 33 |

Package Style And Pinning (mm)



| PIN | FUNCTION |
|-----|----------|
| 1 | +VIN |
| 2 | -VIN |
| 4 | -VOUT |
| 5 | COM. |
| 6 | +VOUT |

TOL. : ±0.25mm

UNIT : mm

ELECTRICAL SPECIFICATIONS: REGULATED

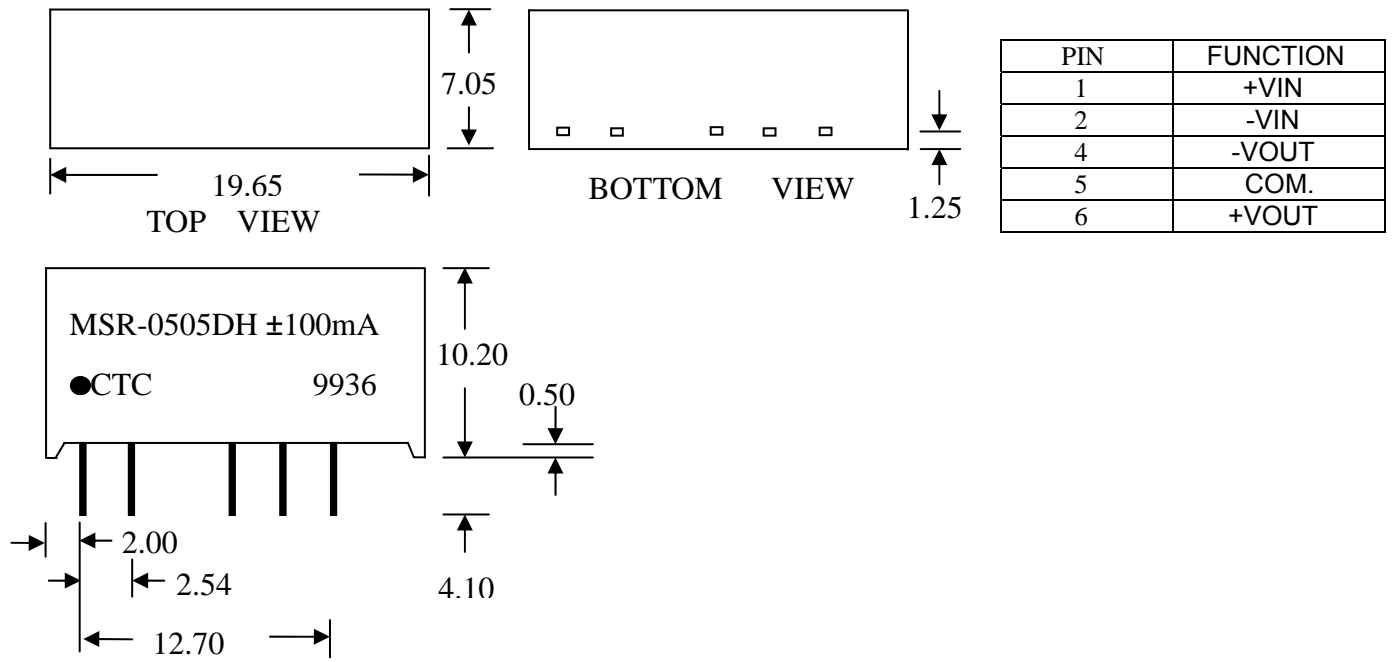
- Input voltage range ----- $\pm 5\%$
- Input voltage range (option)----- $(\pm 10\%)$
- Output voltage accuracy ----- $\pm 5\%$
- Line voltage regulation ----- $V_o \pm 1.0\%$
- Load voltage regulation ----- $V_o \pm 1.0\%$
- Ripple&noise/20MHZ BW ----- $\pm 100\text{mV P-P Max.}$
- Efficiency at full load----- 50% Min.
- Isolation Voltage----- 3000 Vdc/1sec.
- Short circuit protection ----- 1.0 Second
- Operating temperature range ----- $-40^{\circ}\text{C to } 71^{\circ}\text{C}$
- Storage temperature range ----- $-55^{\circ}\text{C to } 125^{\circ}\text{C}$
- Isolation resistance ----- 15G Ω Min.
- Isolation Capacity ----- 70pF Typ.
- Package weight----- 2.8g



Note : Add/T after P/N for input voltage----- $\pm 10\%$

| Selection Guide | | | |
|-----------------|---------------------|----------------------|---------------------|
| Part Number | Input Voltage (VDC) | Output Voltage (VDC) | Output Current (mA) |
| MSR-0505DH | 5 | ± 5 | ± 100 |
| MSR-0509DH | 5 | ± 9 | ± 55 |
| MSR-0512DH | 5 | ± 12 | ± 42 |
| MSR-0515DH | 5 | ± 15 | ± 33 |
| MSR-1205DH | 12 | ± 5 | ± 100 |
| MSR-1209DH | 12 | ± 9 | ± 55 |
| MSR-1212DH | 12 | ± 12 | ± 42 |
| MSR-1215DH | 12 | ± 15 | ± 33 |
| MSR-1505DH | 15 | ± 5 | ± 100 |
| MSR-1509DH | 15 | ± 9 | ± 55 |
| MSR-1512DH | 15 | ± 12 | ± 42 |
| MSR-1515DH | 15 | ± 15 | ± 33 |
| MSR-2405DH | 24 | ± 5 | ± 100 |
| MSR-2409DH | 24 | ± 9 | ± 55 |
| MSR-2412DH | 24 | ± 12 | ± 42 |
| MSR-2415DH | 24 | ± 15 | ± 33 |

Package Style And Pinning (mm)



*Note : Terminal ----- 0.51 X 0.25 Flat Pin

TOL. : ±0.25mm

UNIT : mm