



[www.cosel.co.jp/en](http://www.cosel.co.jp/en)

On Board Type DC-DC converter  
**MG15/30 series**

Compact and general use type  
Isolated type DC-DC converter

10 years warranty



# MG15/30 series

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| External view                                                                       | Item                  | Model   | Input voltage<br>[V] | Output voltage[V] / Output current[A] |      |       |       |            |             | External dimension<br>[mm]<br>W×H×D |
|-------------------------------------------------------------------------------------|-----------------------|---------|----------------------|---------------------------------------|------|-------|-------|------------|-------------|-------------------------------------|
|                                                                                     |                       |         |                      | Single output                         |      |       |       | 2 output   |             |                                     |
|                                                                                     |                       |         |                      | 3.3[V]                                | 5[V] | 12[V] | 15[V] | ±5(+10)[V] | ±12(+24)[V] |                                     |
|  | MG15                  | DC9-18  | 4                    | 3                                     | 1.3  | 1     | 1.5   | 0.65       | 0.5         | 25.4×9.9×25.4                       |
|                                                                                     |                       | DC18-36 | 4                    | 3                                     | 1.3  | 1     | 1.5   | 0.65       | 0.5         |                                     |
|                                                                                     |                       | DC36-76 | 4                    | 3                                     | 1.3  | 1     | 1.5   | 0.65       | 0.5         |                                     |
|  | MGF15<br>(Wide input) | DC9-36  | 4                    | 3                                     | 1.3  | 1     | 1.5   | 0.65       | 0.5         | 25.4×9.9×25.4                       |
|                                                                                     |                       | DC18-76 | 4                    | 3                                     | 1.3  | 1     | 1.5   | 0.65       | 0.5         |                                     |
|  | MG30                  | DC9-18  | 8                    | 6                                     | 2.5  | 2     | 2.5   | 1.25       | 1           | 25.4×9.9×50.8                       |
|                                                                                     |                       | DC18-36 | 8                    | 6                                     | 2.5  | 2     | 2.5   | 1.25       | 1           |                                     |
|                                                                                     |                       | DC36-76 | 8                    | 6                                     | 2.5  | 2     | 2.5   | 1.25       | 1           |                                     |
|  | MGF30<br>(Wide input) | DC9-36  | 7.5                  | 6                                     | 2.5  | 2     | 2     | 1.25       | 1           | 25.4×9.9×50.8                       |
|                                                                                     |                       | DC18-76 | 7.5                  | 6                                     | 2.5  | 2     | 2     | 1.25       | 1           |                                     |

# MG MG15/30 series

Compact, general use and isolated type  
DC-DC converter

Lineup of 70 models

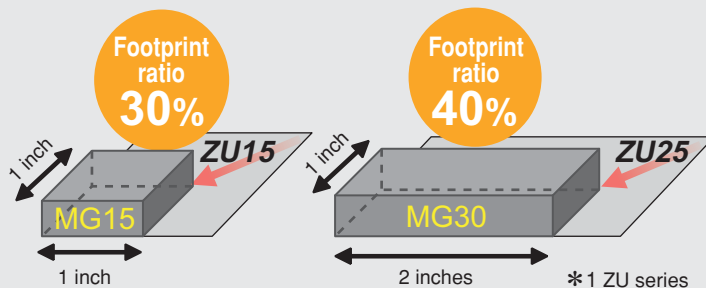
## World standard 1 × 1 inch, 1 × 2 inch Isolated type DC-DC converter

When compared to conventional models (our ZU series), downsizing and light-weighted system are achieved. Thus, long-term reliability and high efficiency are both achieved.

In 15/30W class, wide input type are added. With whelming variations, free choice than ever is achieved. Thus, RoHS compliant product that is environment friendly.

### Best-matching to downsizing of the board area

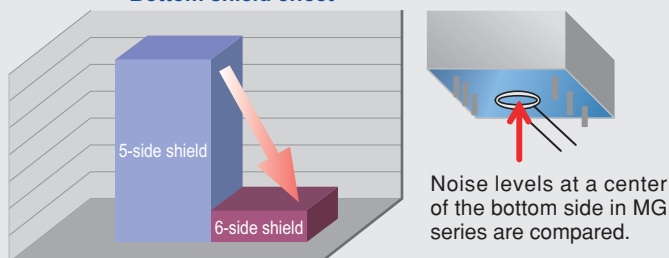
When compared to conventional systems (\*1), footprint area on board is 40% or smaller.



### Noise countermeasure with 6-side shield.

As well as a case, the bottom surface is also shielded for lowering the noise.

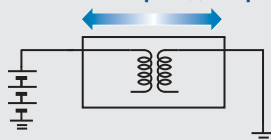
#### Bottom shield effect



### Isolation DC1,500V (1 min.)

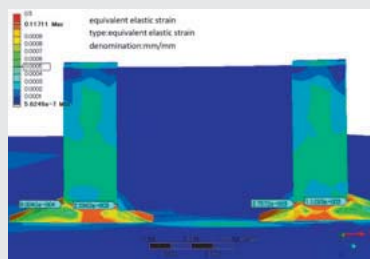
Isolation between input and output is DC1,500V (1 min) and safety level has been increased.

#### Between input ↔ output



### 10 years warranty

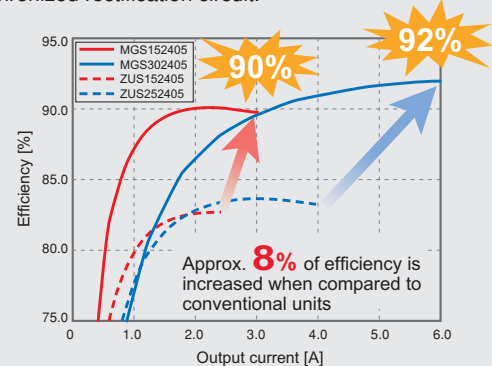
By securing reliability of parts soldering sections, long-term reliability has been achieved.



Warping amount simulation at the ceramic capacitor electrode with a stress simulator.

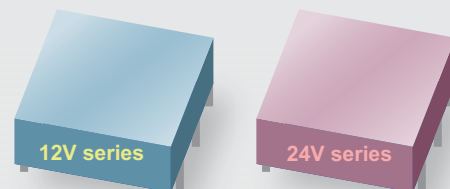
### High efficiency, light-weighted, compact size

Compact sizing and light-weighted are achieved by applying synchronized rectification circuit.



### Wide input type is newly added to the lineup.

Conventionally, two systems were used depending on input voltage. With MG series wide input type, only one system is required. Therefore, power supply can be used commonly.



Conventionally, systems of two types were required.

However, corresponding with one system is now available.

Reducing the management cost

### Other features

- Wide operating temperature range (-40 to +85°C)
- Remote control function
- Output voltage external variation function (single output)
- Fuse is built-in at the input side
- Built-in synchronized rectification circuit (single output)
- Aluminum electrolysis / tantalum electrolytic capacitor unused
- Safety standard (UL, C-UL, EN) certifications



\* Link to [www.cosel.co.jp/en](http://www.cosel.co.jp/en) for the latest product information.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Input voltage
- ⑤ Output voltage
- ⑥ Optional
- G: Capacitor between Input and Output is removed.
- R: with Remote ON/OFF (Positive logic control)

| MODEL                 | MGS15123R3    | MGS151205 | MGS151212 | MGS151215 | MGS15243R3 | MGS152405 | MGS152412 | MGS152415 |
|-----------------------|---------------|-----------|-----------|-----------|------------|-----------|-----------|-----------|
| MAX OUTPUT WATTAGE[W] | 13.2          | 15        | 15.6      | 15        | 13.2       | 15        | 15.6      | 15        |
| DC OUTPUT             | VOLTAGE[V] *1 | 3.3       | 5         | 12        | 15         | 3.3       | 5         | 12        |
|                       | CURRENT[A]    | 4         | 3         | 1.3       | 1          | 4         | 3         | 1         |

## SPECIFICATIONS

|                               | MODEL                              | MGS15123R3                                                                  | MGS151205     | MGS151212       | MGS151215       | MGS15243R3    | MGS152405     | MGS152412       | MGS152415       |
|-------------------------------|------------------------------------|-----------------------------------------------------------------------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|
| INPUT                         | VOLTAGE[V]                         | DC9 - 18                                                                    |               |                 |                 | DC18 - 36     |               |                 |                 |
|                               | CURRENT[A] *2                      | 1.28typ                                                                     | 1.44typ       | 1.49typ         | 1.42typ         | 0.63typ       | 0.70typ       | 0.73typ         | 0.70typ         |
|                               | EFFICIENCY[%] *2                   | 86typ                                                                       | 87typ         | 87typ           | 88typ           | 87typ         | 89typ         | 89typ           | 89typ           |
| OUTPUT                        | VOLTAGE[V]                         | 3.3                                                                         | 5             | 12              | 15              | 3.3           | 5             | 12              | 15              |
|                               | CURRENT[A]                         | 4                                                                           | 3             | 1.3             | 1               | 4             | 3             | 1.3             | 1               |
|                               | LINE REGULATION[mV]                | 13.2max                                                                     | 20max         | 48max           | 60max           | 13.2max       | 20max         | 48max           | 60max           |
|                               | LOAD REGULATION[mV]                | 13.2max                                                                     | 20max         | 48max           | 60max           | 13.2max       | 20max         | 48max           | 60max           |
|                               | RIPPLE[mVp-p] *3                   | -20 to +60°C                                                                | 75max         | 75max           | 100max          | 100max        | 75max         | 75max           | 100max          |
|                               |                                    | -40 to -20°C                                                                | 100max        | 100max          | 120max          | 120max        | 100max        | 100max          | 120max          |
|                               | RIPPLE NOISE[mVp-p] *3             | -20 to +60°C                                                                | 100max        | 100max          | 120max          | 120max        | 100max        | 100max          | 120max          |
|                               |                                    | -40 to -20°C                                                                | 200max        | 200max          | 200max          | 200max        | 200max        | 200max          | 200max          |
|                               | TEMPERATURE REGULATION[mV]         | -20 to +60°C                                                                | 50max         | 50max           | 150max          | 180max        | 50max         | 50max           | 150max          |
|                               |                                    | -40 to -20°C                                                                | 80max         | 80max           | 240max          | 290max        | 80max         | 80max           | 240max          |
| PROTECTION CIRCUIT AND OTHERS | DRIFT[mV] *4                       | 20max                                                                       | 20max         | 48max           | 60max           | 20max         | 20max         | 48max           | 60max           |
|                               | START-UP TIME[ms]                  | 30max (Minimum input, Io=100%)                                              |               |                 |                 |               |               |                 |                 |
|                               | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Fixed (TRM pin open) Available to adjust ±10% by external variable resistor |               |                 |                 |               |               |                 |                 |
|                               | OUTPUT VOLTAGE SETTING[V] *5       | 3.296 - 3.404                                                               | 4.975 - 5.137 | 11.857 - 12.243 | 14.839 - 15.321 | 3.296 - 3.404 | 4.975 - 5.137 | 11.857 - 12.243 | 14.839 - 15.321 |
|                               | OVERCURRENT PROTECTION[V]          | Works over 105% of rating and recovers automatically                        |               |                 |                 |               |               |                 |                 |
|                               | REMOTE ON/OFF                      | Provided (Negative logic L:ON, H:OFF)                                       |               |                 |                 |               |               |                 |                 |

| MODEL                 | MGS15483R3    | MGS154805 | MGS154812 | MGS154815 |
|-----------------------|---------------|-----------|-----------|-----------|
| MAX OUTPUT WATTAGE[W] | 13.2          | 15        | 15.6      | 15        |
| DC OUTPUT             | VOLTAGE[V] *1 | 3.3       | 5         | 12        |
|                       | CURRENT[A]    | 4         | 3         | 1.3       |

## SPECIFICATIONS

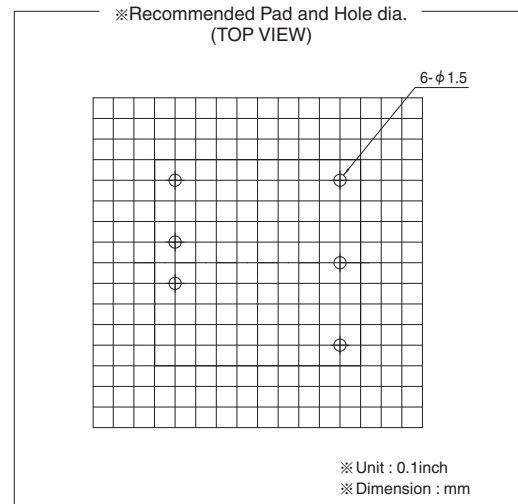
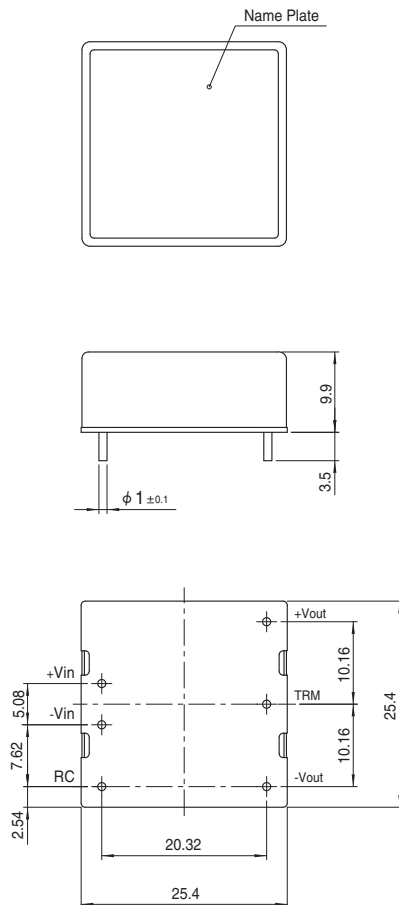
|                               | MODEL                              | MGS15483R3                                           | MGS154805     | MGS154812       | MGS154815       |
|-------------------------------|------------------------------------|------------------------------------------------------|---------------|-----------------|-----------------|
| INPUT                         | VOLTAGE[V]                         | DC36 - 76                                            |               |                 |                 |
|                               | CURRENT[A] *2                      | 0.32typ                                              | 0.35typ       | 0.36typ         | 0.35typ         |
|                               | EFFICIENCY[%] *2                   | 87typ                                                | 89typ         | 90typ           | 90typ           |
| OUTPUT                        | VOLTAGE[V]                         | 3.3                                                  | 5             | 12              | 15              |
|                               | CURRENT[A]                         | 4                                                    | 3             | 1.3             | 1               |
|                               | LINE REGULATION[mV]                | 13.2max                                              | 20max         | 48max           | 60max           |
|                               | LOAD REGULATION[mV]                | 13.2max                                              | 20max         | 48max           | 60max           |
|                               | RIPPLE[mVp-p] *3                   | -20 to +60°C                                         | 75max         | 75max           | 100max          |
|                               |                                    | -40 to -20°C                                         | 100max        | 100max          | 120max          |
|                               | RIPPLE NOISE[mVp-p] *3             | -20 to +60°C                                         | 100max        | 100max          | 120max          |
|                               |                                    | -40 to -20°C                                         | 200max        | 200max          | 200max          |
|                               | TEMPERATURE REGULATION[mV]         | -20 to +60°C                                         | 50max         | 50max           | 150max          |
|                               |                                    | -40 to -20°C                                         | 80max         | 80max           | 240max          |
| PROTECTION CIRCUIT AND OTHERS | DRIFT[mV] *4                       | 20max                                                | 20max         | 48max           | 60max           |
|                               | START-UP TIME[ms]                  | 30max (Minimum input, Io=100%)                       |               |                 |                 |
|                               | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Fixed (TRM pin open) ±10% adjustable by external VR  |               |                 |                 |
|                               | OUTPUT VOLTAGE SETTING[V] *5       | 3.296 - 3.404                                        | 4.975 - 5.137 | 11.857 - 12.243 | 14.839 - 15.321 |
|                               | OVERCURRENT PROTECTION[V]          | Works over 105% of rating and recovers automatically |               |                 |                 |
|                               | REMOTE ON/OFF                      | Provided (Negative logic L:ON, H:OFF)                |               |                 |                 |

## GENERAL SPECIFICATIONS

|             |                                      |                                                                                                    |
|-------------|--------------------------------------|----------------------------------------------------------------------------------------------------|
| ISOLATION   | INPUT-OUTPUT                         | DC1,500V 1minute, Cutoff current = 10mA, DC500V 1,000M $\Omega$ min (20 $\pm$ 15 $^{\circ}$ C)     |
|             | INPUT-CASE                           | DC1,000V 1minute, Cutoff current = 10mA, DC500V 1,000M $\Omega$ min (20 $\pm$ 15 $^{\circ}$ C)     |
|             | OUTPUT-CASE                          | DC1,000V 1minute, Cutoff current = 10mA, DC500V 1,000M $\Omega$ min (20 $\pm$ 15 $^{\circ}$ C)     |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE | -40 to +85 $^{\circ}$ C, 20 to 95%RH (Non condensing) (Required Derating), 3,000m (10,000feet) max |
|             | STORAGE TEMP., HUMID. AND ALTITUDE   | -40 to +100 $^{\circ}$ C, 20 to 95%RH (Non condensing), 9,000m (30,000feet) max                    |
|             | VIBRATION                            | 10 - 55Hz, 98.0m/s <sup>2</sup> (10G), 3minutes period, 60minutes each along X, Y and Z axis       |
|             | IMPACT                               | 490.3m/s <sup>2</sup> (50G), 11ms, once each along X, Y and Z axis                                 |
| SAFETY      | AGENCY APPROVALS                     | UL60950-1, C-UL, EN60950-1                                                                         |
| OTHERS      | CASE SIZE/WEIGHT                     | 25.4 X 9.9 X 25.4mm (W X H X D) / 20g max                                                          |
|             | COOLING METHOD                       | Convection/Forced air                                                                              |

- \*1 MGW15xx05/MGW15xx12/MGW15xx15 is available as single output, +10V/+24V/+30V
- \*2 Rated input 12V, 24V or 48V DC  $I_o=100\%$
- \*3 Ripple and Ripple Noise is measured by using test board with in 50mm from output pin terminals.
- \*4 Drift is the DC output accuracy for eight hours period after a half-hour warm-up at 25 $^{\circ}$ C.
- \*5 Rated input voltage (DC12V, DC24V, DC48V), rated output wattage, ambient temperature at 25 $^{\circ}$ C.
- \* Parallel operation with other model is not possible.

## External view



- ※ Tolerance  $\pm 0.5$
- ※ Dimensions in mm
- ※ Pin terminal material : Copper
- ※ Plating treatment of terminal : Lead free plating
- ※ Case material : Brass
- ※ Plating treatment of case : Nickel plating
- ※ Please keep enough creepage distance with the pattern on PCB and other components.
- ※ Mass 20g or less



\* Link to [www.cosel.co.jp/en](http://www.cosel.co.jp/en) for the latest product information.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Input voltage
- ⑤ Output voltage
- ⑥ Optional
- G: Capacitor between Input and Output is removed.
- R: with Remote ON/OFF (Positive logic control)

| MODEL                 | MGS30123R3    | MGS301205 | MGS301212 | MGS301215 | MGS30243R3 | MGS302405 | MGS302412 | MGS302415 |
|-----------------------|---------------|-----------|-----------|-----------|------------|-----------|-----------|-----------|
| MAX OUTPUT WATTAGE[W] | 26.4          | 30        | 30        | 30        | 26.4       | 30        | 30        | 30        |
| DC OUTPUT             | VOLTAGE[V] *1 | 3.3       | 5         | 12        | 15         | 3.3       | 5         | 12        |
|                       | CURRENT[A]    | 8         | 6         | 2.5       | 2          | 8         | 6         | 2.5       |

## SPECIFICATIONS

|                               | MODEL                              | MGS30123R3                                           | MGS301205     | MGS301212       | MGS301215       | MGS30243R3    | MGS302405     | MGS302412       | MGS302415       |
|-------------------------------|------------------------------------|------------------------------------------------------|---------------|-----------------|-----------------|---------------|---------------|-----------------|-----------------|
| INPUT                         | VOLTAGE[V]                         | DC9 - 18                                             |               |                 |                 | DC18 - 36     |               |                 |                 |
|                               | CURRENT[A] *2                      | 2.47typ                                              | 2.78typ       | 2.78typ         | 2.78typ         | 1.22typ       | 1.36typ       | 1.37typ         | 1.37typ         |
|                               | EFFICIENCY[%] *2                   | 89typ                                                | 90typ         | 90typ           | 90typ           | 90typ         | 92typ         | 91typ           | 91typ           |
| OUTPUT                        | VOLTAGE[V]                         | 3.3                                                  | 5             | 12              | 15              | 3.3           | 5             | 12              | 15              |
|                               | CURRENT[A]                         | 8                                                    | 6             | 2.5             | 2               | 8             | 6             | 2.5             | 2               |
|                               | LINE REGULATION[mV]                | 13.2max                                              | 20max         | 48max           | 60max           | 13.2max       | 20max         | 48max           | 60max           |
|                               | LOAD REGULATION[mV]                | 13.2max                                              | 20max         | 48max           | 60max           | 13.2max       | 20max         | 48max           | 60max           |
|                               | RIPPLE[mVp-p] *3                   | -20 to +60°C                                         | 75max         | 75max           | 100max          | 100max        | 75max         | 75max           | 100max          |
|                               |                                    | -40 to -20°C                                         | 100max        | 100max          | 120max          | 120max        | 100max        | 100max          | 120max          |
|                               | RIPPLE NOISE[mVp-p] *3             | -20 to +60°C                                         | 100max        | 100max          | 120max          | 120max        | 100max        | 100max          | 120max          |
|                               |                                    | -40 to -20°C                                         | 200max        | 200max          | 200max          | 200max        | 200max        | 200max          | 200max          |
|                               | TEMPERATURE REGULATION[mV]         | -20 to +60°C                                         | 50max         | 50max           | 150max          | 180max        | 50max         | 50max           | 150max          |
|                               |                                    | -40 to -20°C                                         | 80max         | 80max           | 240max          | 290max        | 80max         | 80max           | 240max          |
| PROTECTION CIRCUIT AND OTHERS | DRIFT[mV] *4                       | 20max                                                | 20max         | 48max           | 60max           | 20max         | 20max         | 48max           | 60max           |
|                               | START-UP TIME[ms]                  | 30max (Minimum input, Io=100%)                       |               |                 |                 |               |               |                 |                 |
|                               | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Fixed (TRM pin open) ±10% adjustable by external VR  |               |                 |                 |               |               |                 |                 |
|                               | OUTPUT VOLTAGE SETTING[V] *5       | 3.296 - 3.404                                        | 4.975 - 5.137 | 11.857 - 12.243 | 14.839 - 15.321 | 3.296 - 3.404 | 4.975 - 5.137 | 11.857 - 12.243 | 14.839 - 15.321 |
|                               | OVERCURRENT PROTECTION[V]          | Works over 105% of rating and recovers automatically |               |                 |                 |               |               |                 |                 |
| PROTECTION CIRCUIT AND OTHERS | OVERVOLTAGE PROTECTION[V]          | Works over 120 to 160% of rating                     |               |                 |                 |               |               |                 |                 |
|                               | REMOTE ON/OFF                      | Provided (Negative logic L:ON, H:OFF)                |               |                 |                 |               |               |                 |                 |

| MODEL                 | MGS30483R3    | MGS304805 | MGS304812 | MGS304815 |
|-----------------------|---------------|-----------|-----------|-----------|
| MAX OUTPUT WATTAGE[W] | 26.4          | 30        | 30        | 30        |
| DC OUTPUT             | VOLTAGE[V] *1 | 3.3       | 5         | 12        |
|                       | CURRENT[A]    | 8         | 6         | 2.5       |

## SPECIFICATIONS

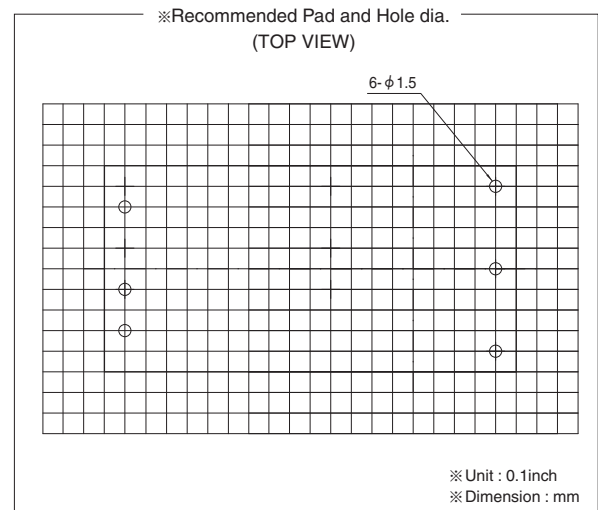
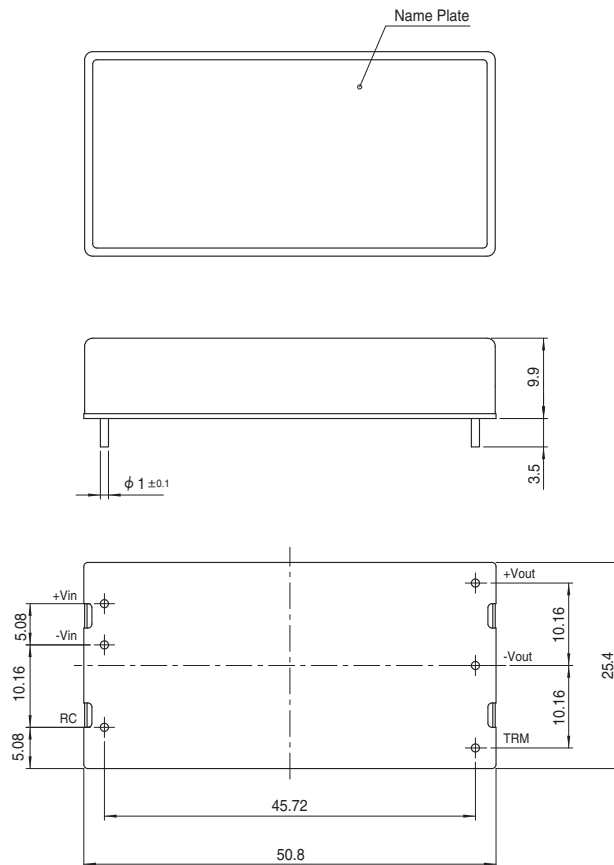
|                               | MODEL                              | MGS30483R3                                           | MGS304805     | MGS304812       | MGS304815       |
|-------------------------------|------------------------------------|------------------------------------------------------|---------------|-----------------|-----------------|
| INPUT                         | VOLTAGE[V]                         | DC36 - 76                                            |               |                 |                 |
|                               | CURRENT[A] *2                      | 0.61typ                                              | 0.69typ       | 0.69typ         | 0.69typ         |
|                               | EFFICIENCY[%] *2                   | 90typ                                                | 91typ         | 91typ           | 91typ           |
| OUTPUT                        | VOLTAGE[V]                         | 3.3                                                  | 5             | 12              | 15              |
|                               | CURRENT[A]                         | 8                                                    | 6             | 2.5             | 2               |
|                               | LINE REGULATION[mV]                | 13.2max                                              | 20max         | 48max           | 60max           |
|                               | LOAD REGULATION[mV]                | 13.2max                                              | 20max         | 48max           | 60max           |
|                               | RIPPLE[mVp-p] *3                   | -20 to +60°C                                         | 75max         | 75max           | 100max          |
|                               |                                    | -40 to -20°C                                         | 100max        | 100max          | 120max          |
|                               | RIPPLE NOISE[mVp-p] *3             | -20 to +60°C                                         | 100max        | 100max          | 120max          |
|                               |                                    | -40 to -20°C                                         | 200max        | 200max          | 200max          |
|                               | TEMPERATURE REGULATION[mV]         | -20 to +60°C                                         | 50max         | 50max           | 150max          |
|                               |                                    | -40 to -20°C                                         | 80max         | 80max           | 240max          |
| PROTECTION CIRCUIT AND OTHERS | DRIFT[mV] *4                       | 20max                                                | 20max         | 48max           | 60max           |
|                               | START-UP TIME[ms]                  | 30max (Minimum input, Io=100%)                       |               |                 |                 |
|                               | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Fixed (TRM pin open) ±10% adjustable by external VR  |               |                 |                 |
|                               | OUTPUT VOLTAGE SETTING[V] *5       | 3.296 - 3.404                                        | 4.975 - 5.137 | 11.857 - 12.243 | 14.839 - 15.321 |
|                               | OVERCURRENT PROTECTION[V]          | Works over 105% of rating and recovers automatically |               |                 |                 |
| PROTECTION CIRCUIT AND OTHERS | OVERVOLTAGE PROTECTION[V]          | Works over 120 to 160% of rating                     |               |                 |                 |
|                               | REMOTE ON/OFF                      | Provided (Negative logic L:ON, H:OFF)                |               |                 |                 |

## GENERAL SPECIFICATIONS

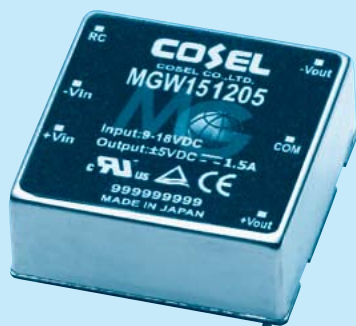
|             |                                      |                                                                                                    |
|-------------|--------------------------------------|----------------------------------------------------------------------------------------------------|
| ISOLATION   | INPUT-OUTPUT                         | DC1,500V 1minute, Cutoff current = 10mA, DC500V 1,000M $\Omega$ min (20 $\pm$ 15 $^{\circ}$ C)     |
|             | INPUT-CASE                           | DC1,000V 1minute, Cutoff current = 10mA, DC500V 1,000M $\Omega$ min (20 $\pm$ 15 $^{\circ}$ C)     |
|             | OUTPUT-CASE                          | DC1,000V 1minute, Cutoff current = 10mA, DC500V 1,000M $\Omega$ min (20 $\pm$ 15 $^{\circ}$ C)     |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE | -40 to +85 $^{\circ}$ C, 20 to 95%RH (Non condensing) (Required Derating), 3,000m (10,000feet) max |
|             | STORAGE TEMP., HUMID. AND ALTITUDE   | -40 to +100 $^{\circ}$ C, 20 to 95%RH (Non condensing), 9,000m (30,000feet) max                    |
|             | VIBRATION                            | 10 - 55Hz, 98.0m/s <sup>2</sup> (10G), 3minutes period, 60minutes each along X, Y and Z axis       |
|             | IMPACT                               | 490.3m/s <sup>2</sup> (50G), 11ms, once each along X, Y and Z axis                                 |
| SAFETY      | AGENCY APPROVALS                     | UL60950-1, C-UL, EN60950-1                                                                         |
| OTHERS      | CASE SIZE/WEIGHT                     | 25.4 X 9.9 X 50.8mm (W X H X D) / 40g max                                                          |
|             | COOLING METHOD                       | Convection/Forced air                                                                              |

- \*1 MGW30xx05/MGW30xx12/MGW30xx15 is available as single output, +10V/+24V/+30V
- \*2 Rated input 12V, 24V or 48V DC  $I_o=100\%$
- \*3 Ripple and Ripple Noise is measured by using test board with in 50mm from output pin terminals.
- \*4 Drift is the DC output accuracy for eight hours period after a half-hour warm-up at 25 $^{\circ}$ C.
- \*5 Rated input voltage (DC12V, DC24V, DC48V), rated output wattage, ambient temperature at 25 $^{\circ}$ C.
- \* Parallel operation with other model is not possible.

## External view



- ※ Tolerance  $\pm 0.5$
- ※ Dimensions in mm
- ※ Pin terminal material : Copper
- ※ Plating treatment of terminal : Lead free plating
- ※ Case material : Brass
- ※ Plating treatment of case : Nickel plating
- ※ Please keep enough creepage distance with the pattern on PCB and other components.
- ※ Mass 40g or less



\* Link to [www.cosel.co.jp/en](http://www.cosel.co.jp/en) for the latest product information.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Input voltage
- ⑤ Output voltage
- ⑥ Optional
- G: Capacitor between Input and Output is removed.
- R: with Remote ON/OFF (Positive logic control)

| MODEL                 |               | MGW151205 | MGW151212  | MGW151215  | MGW152405 | MGW152412  | MGW152415  | MGW154805 | MGW154812  | MGW154815  |
|-----------------------|---------------|-----------|------------|------------|-----------|------------|------------|-----------|------------|------------|
| MAX OUTPUT WATTAGE[W] |               | 15        | 15.6       | 15         | 15        | 15.6       | 15         | 15        | 15.6       | 15         |
| DC OUTPUT             | VOLTAGE[V] *1 | ±5 or +10 | ±12 or +24 | ±15 or +30 | ±5 or +10 | ±12 or +24 | ±15 or +30 | ±5 or +10 | ±12 or +24 | ±15 or +30 |
|                       | CURRENT[A]    | 1.5       | 0.65       | 0.5        | 1.5       | 0.65       | 0.5        | 1.5       | 0.65       | 0.5        |

## SPECIFICATIONS

|                               | MODEL                                | MGW151205                                                                                    | MGW151212       | MGW151215       | MGW152405     | MGW152412       | MGW152415       | MGW154805     | MGW154812       | MGW154815       |
|-------------------------------|--------------------------------------|----------------------------------------------------------------------------------------------|-----------------|-----------------|---------------|-----------------|-----------------|---------------|-----------------|-----------------|
| INPUT                         | VOLTAGE[V]                           | DC9 - 18                                                                                     |                 |                 | DC18 - 36     |                 |                 | DC36 - 76     |                 |                 |
|                               | CURRENT[A] *2                        | 1.48typ                                                                                      | 1.49typ         | 1.42typ         | 0.74typ       | 0.74typ         | 0.70typ         | 0.37typ       | 0.37typ         | 0.35typ         |
|                               | EFFICIENCY[%] *2                     | 84typ                                                                                        | 87typ           | 88typ           | 84typ         | 88typ           | 89typ           | 84typ         | 89typ           | 89typ           |
| OUTPUT                        | VOLTAGE[V]                           | ±5(+10)                                                                                      | ±12(+24)        | ±15(+30)        | ±5(+10)       | ±12(+24)        | ±15(+30)        | ±5(+10)       | ±12(+24)        | ±15(+30)        |
|                               | CURRENT[A]                           | 1.5                                                                                          | 0.65            | 0.5             | 1.5           | 0.65            | 0.5             | 1.5           | 0.65            | 0.5             |
|                               | LINE REGULATION[mV]                  | 40max                                                                                        | 60max           | 75max           | 40max         | 60max           | 75max           | 40max         | 60max           | 75max           |
|                               | CROSS REGULATION[mV]                 | *3 500max *5                                                                                 | 600max          | 750max          | 500max *5     | 600max          | 750max          | 500max *5     | 600max          | 750max          |
|                               |                                      | *4 250max                                                                                    | 480max          | 600max          | 250max        | 480max          | 600max          | 250max        | 480max          | 600max          |
|                               | RIPPLE[mVp-p] *6                     | -20 to +60℃ 100max                                                                           | 100max          | 100max          | 100max        | 100max          | 100max          | 100max        | 100max          | 100max          |
|                               |                                      | -40 to -20℃ 120max                                                                           | 120max          | 120max          | 120max        | 120max          | 120max          | 120max        | 120max          | 120max          |
|                               | RIPPLE NOISE[mVp-p] *6               | -20 to +60℃ 120max                                                                           | 120max          | 120max          | 120max        | 120max          | 120max          | 120max        | 120max          | 120max          |
|                               |                                      | -40 to -20℃ 200max                                                                           | 200max          | 200max          | 200max        | 200max          | 200max          | 200max        | 200max          | 200max          |
|                               | TEMPERATURE REGULATION[mV]           | -20 to +60℃ 50max                                                                            | 150max          | 180max          | 50max         | 150max          | 180max          | 50max         | 150max          | 180max          |
| PROTECTION CIRCUIT AND OTHERS | DRIFT[mV] *7                         | 50max                                                                                        | 50max           | 60max           | 50max         | 50max           | 60max           | 50max         | 50max           | 60max           |
|                               | START-UP TIME[ms]                    | 30max (Minimum input, Io=100%)                                                               |                 |                 |               |                 |                 |               |                 |                 |
|                               | OUTPUT VOLTAGE SETTING[V] *8         | 4.935 - 5.240                                                                                | 11.765 - 12.492 | 14.602 - 15.505 | 4.935 - 5.240 | 11.765 - 12.492 | 14.602 - 15.505 | 4.935 - 5.240 | 11.765 - 12.492 | 14.602 - 15.505 |
|                               | OVERCURRENT PROTECTION[V]            | Works over 105% of rating and recovers automatically                                         |                 |                 |               |                 |                 |               |                 |                 |
|                               | REMOTE ON/OFF                        | Provided (Negative logic L:ON, H:OFF)                                                        |                 |                 |               |                 |                 |               |                 |                 |
| ISOLATION                     | INPUT-OUTPUT                         | DC1,500V 1minute, Cutoff current = 10mA, DC500V 1,000MΩ min (20±15℃)                         |                 |                 |               |                 |                 |               |                 |                 |
|                               | INPUT-CASE                           | DC1,000V 1minute, Cutoff current = 10mA, DC500V 1,000MΩ min (20±15℃)                         |                 |                 |               |                 |                 |               |                 |                 |
|                               | OUTPUT-CASE                          | DC1,000V 1minute, Cutoff current = 10mA, DC500V 1,000MΩ min (20±15℃)                         |                 |                 |               |                 |                 |               |                 |                 |
| ENVIRONMENT                   | OPERATING TEMP., HUMID. AND ALTITUDE | -40 to +85℃, 20 to 95%RH (Non condensing) (Required Derating), 3,000m (10,000feet) max       |                 |                 |               |                 |                 |               |                 |                 |
|                               | STORAGE TEMP., HUMID. AND ALTITUDE   | -40 to +100℃, 20 to 95%RH (Non condensing), 9,000m (30,000feet) max                          |                 |                 |               |                 |                 |               |                 |                 |
|                               | VIBRATION                            | 10 - 55Hz, 98.0m/s <sup>2</sup> (10G), 3minutes period, 60minutes each along X, Y and Z axis |                 |                 |               |                 |                 |               |                 |                 |
|                               | IMPACT                               | 490.3m/s <sup>2</sup> (50G), 11ms, once each along X, Y and Z axis                           |                 |                 |               |                 |                 |               |                 |                 |
| SAFETY                        | AGENCY APPROVALS                     | UL60950-1, C-UL, EN60950-1                                                                   |                 |                 |               |                 |                 |               |                 |                 |
| OTHERS                        | CASE SIZE/WEIGHT                     | 25.4×9.9×25.4mm (W×H×D) / 20g max                                                            |                 |                 |               |                 |                 |               |                 |                 |
|                               | COOLING METHOD                       | Convection/Forced air                                                                        |                 |                 |               |                 |                 |               |                 |                 |

\*1 Single output +10V, +24V, +30V with no use of COM.

\*2 Rated input 12V, 24V or 48V Io=100%

\*3 An output load is 100%, the other load is 5% to 100%.

\*4 An output load is 100%, the other load is 20% to 100%.

\*5 Refer to the instruction manual 11.

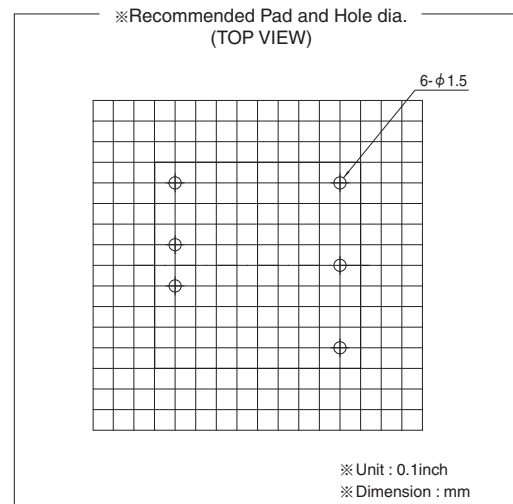
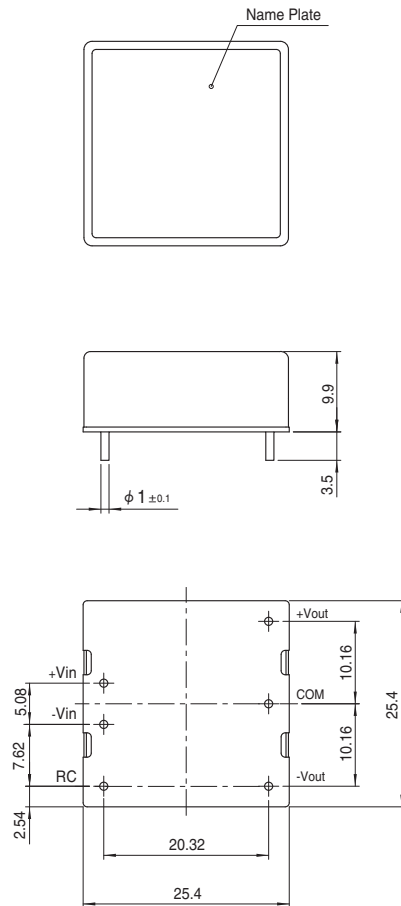
\*6 Ripple and Ripple Noise is measured by using test board with in 50mm from output pin terminals.

\*7 Drift is the DC output accuracy for eight hours period after a half-hour warm-up at 25℃.

\*8 Rated input voltage (DC12V, DC24V, DC48V), rated output wattage, ambient temperature at 25℃.

\* Parallel operation with other model is not possible.

## External view



- ※ Tolerance  $\pm 0.5$
- ※ Dimensions in mm
- ※ Pin terminal material : Copper
- ※ Plating treatment of terminal : Lead free plating
- ※ Case material : Brass
- ※ Plating treatment of case : Nickel plating
- ※ Please keep enough creepage distance with the pattern on PCB and other components.
- ※ Mass 20g or less



RoHS



\* Link to [www.cosel.co.jp/en](http://www.cosel.co.jp/en) for the latest product information.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Input voltage
- ⑤ Output voltage
- ⑥ Optional
- G: Capacitor between Input and Output is removed.
- R: with Remote ON/OFF (Positive logic control)

| MODEL                 | MGW301205  | MGW301212 | MGW301215  | MGW302405  | MGW302412 | MGW302415  | MGW304805  | MGW304812 | MGW304815  |
|-----------------------|------------|-----------|------------|------------|-----------|------------|------------|-----------|------------|
| MAX OUTPUT WATTAGE[W] | 25         | 30        | 30         | 25         | 30        | 30         | 25         | 30        | 30         |
| DC OUTPUT             | VOLTAGE[V] | ±5 or +10 | ±12 or +24 | ±15 or +30 | ±5 or +10 | ±12 or +24 | ±15 or +30 | ±5 or +10 | ±12 or +24 |
|                       | CURRENT[A] | 2.5       | 1.25       | 1          | 2.5       | 1.25       | 1          | 2.5       | 1.25       |

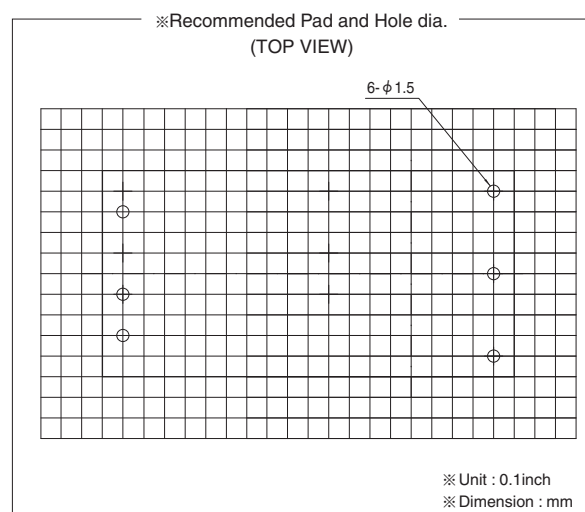
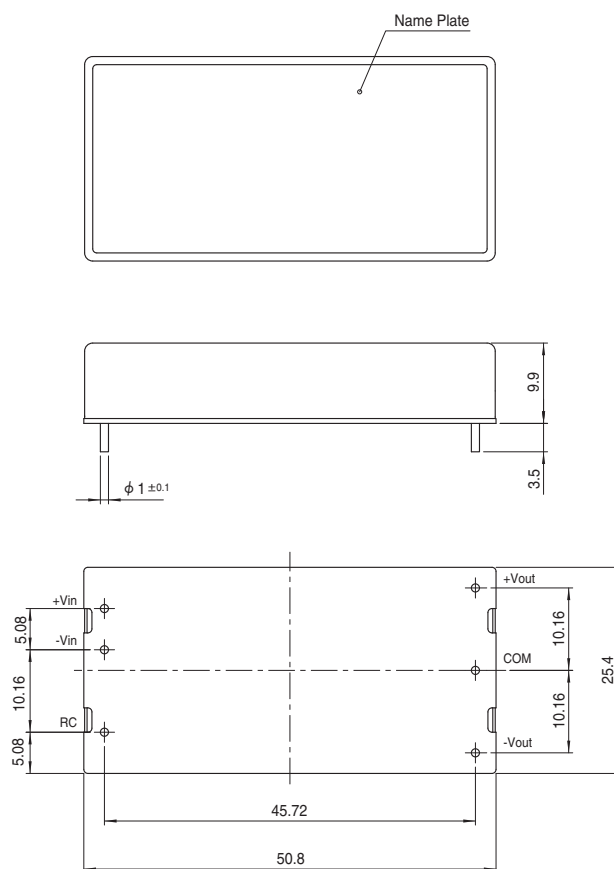
## SPECIFICATIONS

|                               | MODEL                                | MGW301205                                                                                    | MGW301212       | MGW301215       | MGW302405     | MGW302412       | MGW302415       | MGW304805     | MGW304812       | MGW304815       |
|-------------------------------|--------------------------------------|----------------------------------------------------------------------------------------------|-----------------|-----------------|---------------|-----------------|-----------------|---------------|-----------------|-----------------|
| INPUT                         | VOLTAGE[V]                           | DC9 - 18                                                                                     |                 |                 | DC18 - 36     |                 |                 | DC36 - 76     |                 |                 |
|                               | CURRENT[A]                           | 2.42typ                                                                                      | 2.81typ         | 2.81typ         | 1.21typ       | 1.40typ         | 1.40typ         | 0.61typ       | 0.70typ         | 0.70typ         |
|                               | EFFICIENCY[%]                        | 86typ                                                                                        | 89typ           | 89typ           | 86typ         | 89typ           | 89typ           | 86typ         | 89typ           | 89typ           |
|                               |                                      |                                                                                              |                 |                 |               |                 |                 |               |                 |                 |
| OUTPUT                        | VOLTAGE[V]                           | ±5(+10)                                                                                      | ±12(+24)        | ±15(+30)        | ±5(+10)       | ±12(+24)        | ±15(+30)        | ±5(+10)       | ±12(+24)        | ±15(+30)        |
|                               | CURRENT[A]                           | 2.5                                                                                          | 1.25            | 1               | 2.5           | 1.25            | 1               | 2.5           | 1.25            | 1               |
|                               | LINE REGULATION[mV]                  | 40max                                                                                        | 60max           | 75max           | 40max         | 60max           | 75max           | 40max         | 60max           | 75max           |
|                               | CROSS REGULATION[mV]                 | 500max                                                                                       | 600max          | 750max          | 500max        | 600max          | 750max          | 500max        | 600max          | 750max          |
|                               |                                      | 250max                                                                                       | 480max          | 600max          | 250max        | 480max          | 600max          | 250max        | 480max          | 600max          |
|                               | RIPPLE[mVp-p]                        | 100max                                                                                       | 100max          | 100max          | 100max        | 100max          | 100max          | 100max        | 100max          | 100max          |
|                               |                                      | 120max                                                                                       | 120max          | 120max          | 120max        | 120max          | 120max          | 120max        | 120max          | 120max          |
|                               | RIPPLE NOISE[mVp-p]                  | 120max                                                                                       | 120max          | 120max          | 120max        | 120max          | 120max          | 120max        | 120max          | 120max          |
|                               |                                      | 200max                                                                                       | 200max          | 200max          | 200max        | 200max          | 200max          | 200max        | 200max          | 200max          |
|                               | TEMPERATURE REGULATION[mV]           | 50max                                                                                        | 150max          | 180max          | 50max         | 150max          | 180max          | 50max         | 150max          | 180max          |
|                               |                                      | 80max                                                                                        | 240max          | 290max          | 80max         | 240max          | 290max          | 80max         | 240max          | 290max          |
|                               | DRIFT[mV]                            | 50max                                                                                        | 50max           | 60max           | 50max         | 50max           | 60max           | 50max         | 50max           | 60max           |
| PROTECTION CIRCUIT AND OTHERS | START-UP TIME[ms]                    | 30max (Minimum input, I <sub>o</sub> =100%)                                                  |                 |                 |               |                 |                 |               |                 |                 |
|                               | OUTPUT VOLTAGE SETTING[V]            | 4.935 - 5.240                                                                                | 11.765 - 12.492 | 14.602 - 15.505 | 4.935 - 5.240 | 11.765 - 12.492 | 14.602 - 15.505 | 4.935 - 5.240 | 11.765 - 12.492 | 14.602 - 15.505 |
|                               | OVERCURRENT PROTECTION[V]            | Works over 105% of rating and recovers automatically                                         |                 |                 |               |                 |                 |               |                 |                 |
|                               | OVERVOLTAGE PROTECTION[V]            | Works over 120 to 160% of rating                                                             |                 |                 |               |                 |                 |               |                 |                 |
| ISOLATION                     | REMOTE ON/OFF                        | Provided (Negative logic L:ON, H:OFF)                                                        |                 |                 |               |                 |                 |               |                 |                 |
|                               | INPUT-OUTPUT                         | DC1,500V 1minute, Cutoff current = 10mA, DC500V 1,000MΩ min (20±15°C)                        |                 |                 |               |                 |                 |               |                 |                 |
|                               | INPUT-CASE                           | DC1,000V 1minute, Cutoff current = 10mA, DC500V 1,000MΩ min (20±15°C)                        |                 |                 |               |                 |                 |               |                 |                 |
| ENVIRONMENT                   | OUTPUT-CASE                          | DC1,000V 1minute, Cutoff current = 10mA, DC500V 1,000MΩ min (20±15°C)                        |                 |                 |               |                 |                 |               |                 |                 |
|                               | OPERATING TEMP., HUMID. AND ALTITUDE | -40 to +85°C, 20 to 95%RH (Non condensing) (Required Derating), 3,000m (10,000feet) max      |                 |                 |               |                 |                 |               |                 |                 |
|                               | STORAGE TEMP., HUMID. AND ALTITUDE   | -40 to +100°C, 20 to 95%RH (Non condensing), 9,000m (30,000feet) max                         |                 |                 |               |                 |                 |               |                 |                 |
|                               | VIBRATION                            | 10 - 55Hz, 98.0m/s <sup>2</sup> (10G), 3minutes period, 60minutes each along X, Y and Z axis |                 |                 |               |                 |                 |               |                 |                 |
| SAFETY                        | IMPACT                               | 490.3m/s <sup>2</sup> (50G), 11ms, once each along X, Y and Z axis                           |                 |                 |               |                 |                 |               |                 |                 |
|                               | AGENCY APPROVALS                     | UL60950-1, C-UL, EN60950-1                                                                   |                 |                 |               |                 |                 |               |                 |                 |
| OTHERS                        | CASE SIZE/WEIGHT                     | 25.4 X 9.9 X 50.8mm (W X H X D) / 40g max                                                    |                 |                 |               |                 |                 |               |                 |                 |
|                               | COOLING METHOD                       | Convection/Forced air                                                                        |                 |                 |               |                 |                 |               |                 |                 |

- \*1 Single output +10V, +24V, +30V with no use of COM.
- \*2 Rated input 12V, 24V or 48V DC I<sub>o</sub>=100%
- \*3 Symmetrical loading from 5% to 100%.
- \*4 Symmetrical loading from 20% to 100%.
- \*5 Refer to the instruction manual 11.
- \*6 Ripple and Ripple Noise is measured by using test board with in 50mm from output pin terminals.

- \*7 Drift is the DC output accuracy for eight hours period after a half-hour warm-up at 25°C.
- \*8 Rated input voltage (DC12V, DC24V, DC48V), rated output wattage, ambient temperature at 25°C.
- \* Parallel operation with other model is not possible.

## External view



- ※ Tolerance  $\pm 0.5$
- ※ Dimensions in mm
- ※ Pin terminal material : Copper
- ※ Plating treatment of terminal : Lead free plating
- ※ Case material : Brass
- ※ Plating treatment of case : Nickel plating
- ※ Please keep enough creepage distance with the pattern on PCB and other components.
- ※ Mass 40g or less



\* Link to [www.cosel.co.jp/en](http://www.cosel.co.jp/en) for the latest product information.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Input voltage
- ⑤ Output voltage
- ⑥ Optional
  - G: Capacitor between Input and Output is removed.
  - R: with Remote ON/OFF (Positive logic control)

| MODEL                 | MGFS15243R3   | MGFS152405 | MGFS152412 | MGFS152415 |
|-----------------------|---------------|------------|------------|------------|
| MAX OUTPUT WATTAGE[W] | 13.2          | 15         | 15.6       | 15         |
| DC OUTPUT             | VOLTAGE[V] *1 | 3.3        | 5          | 12         |
|                       | CURRENT[A]    | 4          | 3          | 1.3        |

## SPECIFICATIONS

|                               | MODEL                              | MGFS15243R3                                          | MGFS152405    | MGFS152412      | MGFS152415      |
|-------------------------------|------------------------------------|------------------------------------------------------|---------------|-----------------|-----------------|
| INPUT                         | VOLTAGE[V]                         | DC9 - 36                                             |               |                 |                 |
|                               | CURRENT[A] *2                      | 0.63typ                                              | 0.71typ       | 0.73typ         | 0.70typ         |
|                               | EFFICIENCY[%] *2                   | 87typ                                                | 88typ         | 89typ           | 89typ           |
|                               |                                    |                                                      |               |                 |                 |
| OUTPUT                        | VOLTAGE[V]                         | 3.3                                                  | 5             | 12              | 15              |
|                               | CURRENT[A]                         | 4                                                    | 3             | 1.3             | 1               |
|                               | LINE REGULATION[mV]                | 13.2max                                              | 20max         | 48max           | 60max           |
|                               | LOAD REGULATION[mV]                | 13.2max                                              | 20max         | 48max           | 60max           |
|                               | RIPPLE[mVp-p] *3                   | -20 to +60°C                                         | 75max         | 75max           | 100max          |
|                               |                                    | -40 to -20°C                                         | 100max        | 100max          | 120max          |
|                               | RIPPLE NOISE[mVp-p] *3             | -20 to +60°C                                         | 100max        | 100max          | 120max          |
|                               |                                    | -40 to -20°C                                         | 200max        | 200max          | 200max          |
|                               | TEMPERATURE REGULATION[mV]         | -20 to +60°C                                         | 50max         | 50max           | 150max          |
|                               |                                    | -40 to -20°C                                         | 80max         | 80max           | 240max          |
|                               | DRIFT[mV] *4                       | 20max                                                | 20max         | 48max           | 60max           |
|                               | START-UP TIME[ms]                  | 30max (Minimum input, I <sub>o</sub> =100%)          |               |                 |                 |
| PROTECTION CIRCUIT AND OTHERS | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Fixed (TRM pin open) ±10% adjustable by external VR  |               |                 |                 |
|                               | OUTPUT VOLTAGE SETTING[V] *5       | 3.296 - 3.404                                        | 4.975 - 5.137 | 11.857 - 12.243 | 14.839 - 15.321 |
|                               | OVERCURRENT PROTECTION[V]          | Works over 105% of rating and recovers automatically |               |                 |                 |
|                               | REMOTE ON/OFF                      | Provided (Negative logic L:ON, H:OFF)                |               |                 |                 |

| MODEL                 | MGFS15483R3   | MGFS154805 | MGFS154812 | MGFS154815 |
|-----------------------|---------------|------------|------------|------------|
| MAX OUTPUT WATTAGE[W] | 13.2          | 15         | 15.6       | 15         |
| DC OUTPUT             | VOLTAGE[V] *1 | 3.3        | 5          | 12         |
|                       | CURRENT[A]    | 4          | 3          | 1.3        |

## SPECIFICATIONS

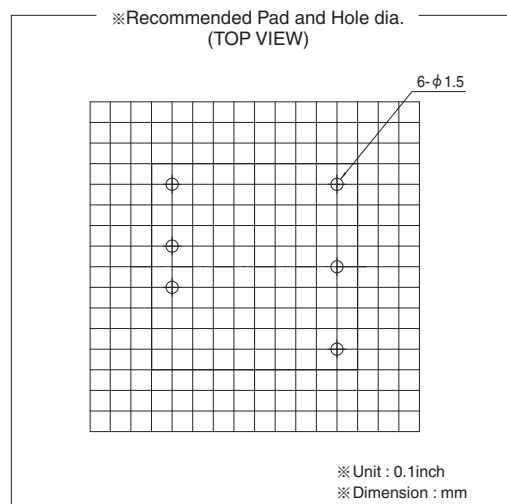
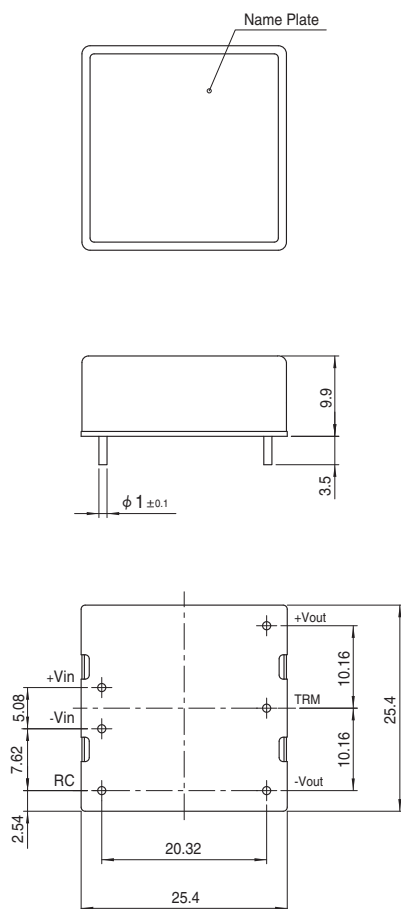
|                               | MODEL                              | MGFS15483R3                                          | MGFS154805    | MGFS154812      | MGFS154815      |
|-------------------------------|------------------------------------|------------------------------------------------------|---------------|-----------------|-----------------|
| INPUT                         | VOLTAGE[V]                         | DC18 - 76                                            |               |                 |                 |
|                               | CURRENT[A] *2                      | 0.32typ                                              | 0.36typ       | 0.37typ         | 0.35typ         |
|                               | EFFICIENCY[%] *2                   | 87typ                                                | 88typ         | 88typ           | 89typ           |
|                               |                                    |                                                      |               |                 |                 |
| OUTPUT                        | VOLTAGE[V]                         | 3.3                                                  | 5             | 12              | 15              |
|                               | CURRENT[A]                         | 4                                                    | 3             | 1.3             | 1               |
|                               | LINE REGULATION[mV]                | 13.2max                                              | 20max         | 48max           | 60max           |
|                               | LOAD REGULATION[mV]                | 13.2max                                              | 20max         | 48max           | 60max           |
|                               | RIPPLE[mVp-p] *3                   | -20 to +60°C                                         | 75max         | 75max           | 100max          |
|                               |                                    | -40 to -20°C                                         | 100max        | 100max          | 120max          |
|                               | RIPPLE NOISE[mVp-p] *3             | -20 to +60°C                                         | 100max        | 100max          | 120max          |
|                               |                                    | -40 to -20°C                                         | 200max        | 200max          | 200max          |
|                               | TEMPERATURE REGULATION[mV]         | -20 to +60°C                                         | 50max         | 50max           | 150max          |
|                               |                                    | -40 to -20°C                                         | 80max         | 80max           | 240max          |
|                               | DRIFT[mV] *4                       | 20max                                                | 20max         | 48max           | 60max           |
|                               | START-UP TIME[ms]                  | 30max (Minimum input, I <sub>o</sub> =100%)          |               |                 |                 |
| PROTECTION CIRCUIT AND OTHERS | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Fixed (TRM pin open) ±10% adjustable by external VR  |               |                 |                 |
|                               | OUTPUT VOLTAGE SETTING[V] *5       | 3.296 - 3.404                                        | 4.975 - 5.137 | 11.857 - 12.243 | 14.839 - 15.321 |
|                               | OVERCURRENT PROTECTION[V]          | Works over 105% of rating and recovers automatically |               |                 |                 |
|                               | REMOTE ON/OFF                      | Provided (Negative logic L:ON, H:OFF)                |               |                 |                 |

## GENERAL SPECIFICATIONS

|             |                                      |                                                                                                    |
|-------------|--------------------------------------|----------------------------------------------------------------------------------------------------|
| ISOLATION   | INPUT-OUTPUT                         | DC1,500V 1minute, Cutoff current = 10mA, DC500V 1,000M $\Omega$ min (20 $\pm$ 15 $^{\circ}$ C)     |
|             | INPUT-CASE                           | DC1,000V 1minute, Cutoff current = 10mA, DC500V 1,000M $\Omega$ min (20 $\pm$ 15 $^{\circ}$ C)     |
|             | OUTPUT-CASE                          | DC1,000V 1minute, Cutoff current = 10mA, DC500V 1,000M $\Omega$ min (20 $\pm$ 15 $^{\circ}$ C)     |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE | -40 to +85 $^{\circ}$ C, 20 to 95%RH (Non condensing) (Required Derating), 3,000m (10,000feet) max |
|             | STORAGE TEMP., HUMID. AND ALTITUDE   | -40 to +100 $^{\circ}$ C, 20 to 95%RH (Non condensing), 9,000m (30,000feet) max                    |
|             | VIBRATION                            | 10 - 55Hz, 98.0m/s <sup>2</sup> (10G), 3minutes period, 60minutes each along X, Y and Z axis       |
| SAFETY      | IMPACT                               | 490.3m/s <sup>2</sup> (50G), 11ms, once each along X, Y and Z axis                                 |
|             | AGENCY APPROVALS                     | UL60950-1, C-UL, EN60950-1                                                                         |
| OTHERS      | CASE SIZE/WEIGHT                     | 25.4 X 9.9 X 25.4mm (W X H X D) / 20g max                                                          |
|             | COOLING METHOD                       | Convection/Forced air                                                                              |

- \*1 MGF15xx05/MGF15xx12/MGF15xx15 is available as single output, +10V/+24V/+30V
- \*2 Rated input 12V, 24V or 48V DC  $I_o=100\%$
- \*3 Ripple and Ripple Noise is measured by using test board with in 50mm from output pin terminals.
- \*4 Drift is the DC output accuracy for eight hours period after a half-hour warm-up at 25 $^{\circ}$ C.
- \*5 Rated input voltage (DC24V, DC48V), rated output wattage, ambient temperature at 25 $^{\circ}$ C.
- \* Parallel operation with other model is not possible.

## External view



- ※ Tolerance  $\pm 0.5$
- ※ Dimensions in mm
- ※ Pin terminal material : Copper
- ※ Plating treatment of terminal : Lead free plating
- ※ Case material : Brass
- ※ Plating treatment of case : Nickel plating
- ※ Please keep enough creepage distance with the pattern on PCB and other components.
- ※ Mass 20g or less



\* Link to [www.cosel.co.jp/en](http://www.cosel.co.jp/en) for the latest product information.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Input voltage
- ⑤ Output voltage
- ⑥ Optional
  - G: Capacitor between Input and Output is removed.
  - R: with Remote ON/OFF (Positive logic control)

| MODEL                 | MGFS30243R3   | MGFS302405 | MGFS302412 | MGFS302415 |
|-----------------------|---------------|------------|------------|------------|
| MAX OUTPUT WATTAGE[W] | 24.75         | 30         | 30         | 30         |
| DC OUTPUT             | VOLTAGE[V] *1 | 3.3        | 5          | 12         |
|                       | CURRENT[A]    | 7.5        | 6          | 2.5        |

## SPECIFICATIONS

|                               | MODEL                              | MGFS30243R3                                          | MGFS302405    | MGFS302412      | MGFS302415      |
|-------------------------------|------------------------------------|------------------------------------------------------|---------------|-----------------|-----------------|
| INPUT                         | VOLTAGE[V]                         | DC9 - 36                                             |               |                 |                 |
|                               | CURRENT[A] *2                      | 1.17typ                                              | 1.40typ       | 1.40typ         | 1.40typ         |
|                               | EFFICIENCY[%] *2                   | 88typ                                                | 89typ         | 89typ           | 89typ           |
| OUTPUT                        | VOLTAGE[V]                         | 3.3                                                  | 5             | 12              | 15              |
|                               | CURRENT[A]                         | 7.5                                                  | 6             | 2.5             | 2               |
|                               | LINE REGULATION[mV]                | 13.2max                                              | 20max         | 48max           | 60max           |
|                               | LOAD REGULATION[mV]                | 13.2max                                              | 20max         | 48max           | 60max           |
|                               | RIPPLE[mVp-p] *3                   | -20 to +60°C                                         | 75max         | 75max           | 100max          |
|                               |                                    | -40 to -20°C                                         | 100max        | 100max          | 120max          |
|                               | RIPPLE NOISE[mVp-p] *3             | -20 to +60°C                                         | 100max        | 100max          | 120max          |
|                               |                                    | -40 to -20°C                                         | 200max        | 200max          | 200max          |
|                               | TEMPERATURE REGULATION[mV]         | -20 to +60°C                                         | 50max         | 50max           | 150max          |
|                               |                                    | -40 to -20°C                                         | 80max         | 80max           | 240max          |
| PROTECTION CIRCUIT AND OTHERS | DRIFT[mV] *4                       | 20max                                                | 20max         | 48max           | 60max           |
|                               | START-UP TIME[ms]                  | 30max (Minimum input, Io=100%)                       |               |                 |                 |
|                               | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Fixed (TRM pin open) ±10% adjustable by external VR  |               |                 |                 |
|                               | OUTPUT VOLTAGE SETTING[V] *5       | 3.296 - 3.404                                        | 4.975 - 5.137 | 11.857 - 12.243 | 14.839 - 15.321 |
|                               | OVERCURRENT PROTECTION[V]          | Works over 105% of rating and recovers automatically |               |                 |                 |
| PROTECTION CIRCUIT AND OTHERS | OVERVOLTAGE PROTECTION[V]          | Works over 120 to 160% of rating                     |               |                 |                 |
|                               | REMOTE ON/OFF                      | Provided (Negative logic L:ON, H:OFF)                |               |                 |                 |

| MODEL                 | MGFS30483R3   | MGFS304805 | MGFS304812 | MGFS304815 |
|-----------------------|---------------|------------|------------|------------|
| MAX OUTPUT WATTAGE[W] | 24.75         | 30         | 30         | 30         |
| DC OUTPUT             | VOLTAGE[V] *1 | 3.3        | 5          | 12         |
|                       | CURRENT[A]    | 7.5        | 6          | 2.5        |

## SPECIFICATIONS

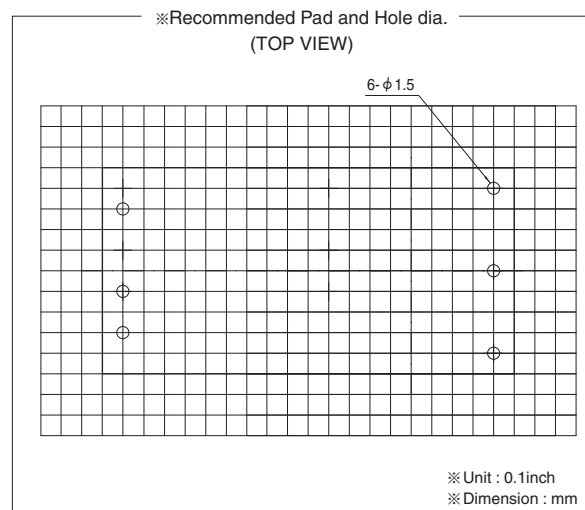
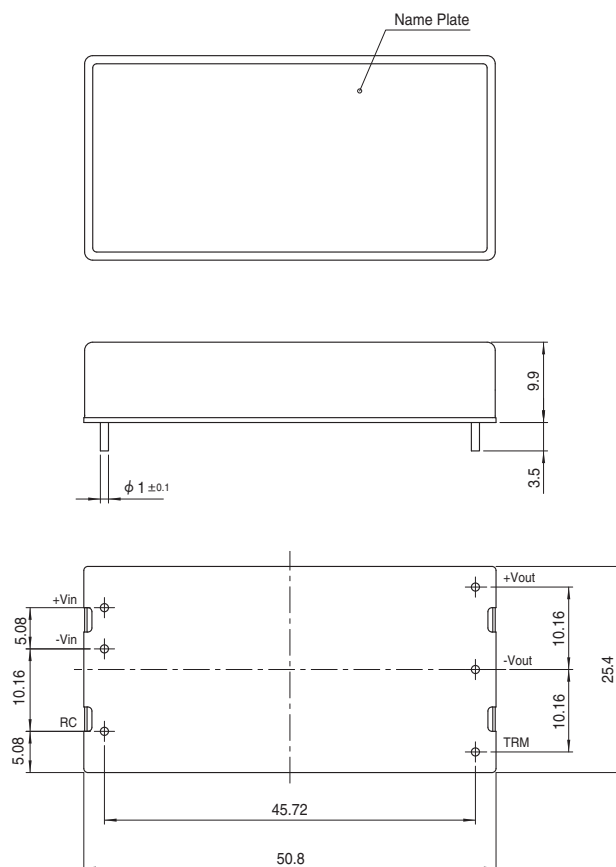
|                               | MODEL                              | MGFS30483R3                                          | MGFS304805    | MGFS304812      | MGFS304815      |
|-------------------------------|------------------------------------|------------------------------------------------------|---------------|-----------------|-----------------|
| INPUT                         | VOLTAGE[V]                         | DC18 - 76                                            |               |                 |                 |
|                               | CURRENT[A] *2                      | 0.59typ                                              | 0.70typ       | 0.70typ         | 0.70typ         |
|                               | EFFICIENCY[%] *2                   | 88typ                                                | 89typ         | 89typ           | 89typ           |
| OUTPUT                        | VOLTAGE[V]                         | 3.3                                                  | 5             | 12              | 15              |
|                               | CURRENT[A]                         | 7.5                                                  | 6             | 2.5             | 2               |
|                               | LINE REGULATION[mV]                | 13.2max                                              | 20max         | 48max           | 60max           |
|                               | LOAD REGULATION[mV]                | 13.2max                                              | 20max         | 48max           | 60max           |
|                               | RIPPLE[mVp-p] *3                   | -20 to +60°C                                         | 75max         | 75max           | 100max          |
|                               |                                    | -40 to -20°C                                         | 100max        | 100max          | 120max          |
|                               | RIPPLE NOISE[mVp-p] *3             | -20 to +60°C                                         | 100max        | 100max          | 120max          |
|                               |                                    | -40 to -20°C                                         | 200max        | 200max          | 200max          |
|                               | TEMPERATURE REGULATION[mV]         | -20 to +60°C                                         | 50max         | 50max           | 150max          |
|                               |                                    | -40 to -20°C                                         | 80max         | 80max           | 240max          |
| PROTECTION CIRCUIT AND OTHERS | DRIFT[mV] *4                       | 20max                                                | 20max         | 48max           | 60max           |
|                               | START-UP TIME[ms]                  | 30max (Minimum input, Io=100%)                       |               |                 |                 |
|                               | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | Fixed (TRM pin open) ±10% adjustable by external VR  |               |                 |                 |
|                               | OUTPUT VOLTAGE SETTING[V] *5       | 3.296 - 3.404                                        | 4.975 - 5.137 | 11.857 - 12.243 | 14.839 - 15.321 |
|                               | OVERCURRENT PROTECTION[V]          | Works over 105% of rating and recovers automatically |               |                 |                 |
| PROTECTION CIRCUIT AND OTHERS | OVERVOLTAGE PROTECTION[V]          | Works over 120 to 160% of rating                     |               |                 |                 |
|                               | REMOTE ON/OFF                      | Provided (Negative logic L:ON, H:OFF)                |               |                 |                 |

## GENERAL SPECIFICATIONS

|             |                                      |                                                                                                    |
|-------------|--------------------------------------|----------------------------------------------------------------------------------------------------|
| ISOLATION   | INPUT-OUTPUT                         | DC1,500V 1minute, Cutoff current = 10mA, DC500V 1,000M $\Omega$ min (20 $\pm$ 15 $^{\circ}$ C)     |
|             | INPUT-CASE                           | DC1,000V 1minute, Cutoff current = 10mA, DC500V 1,000M $\Omega$ min (20 $\pm$ 15 $^{\circ}$ C)     |
|             | OUTPUT-CASE                          | DC1,000V 1minute, Cutoff current = 10mA, DC500V 1,000M $\Omega$ min (20 $\pm$ 15 $^{\circ}$ C)     |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE | -40 to +85 $^{\circ}$ C, 20 to 95%RH (Non condensing) (Required Derating), 3,000m (10,000feet) max |
|             | STORAGE TEMP., HUMID. AND ALTITUDE   | -40 to +100 $^{\circ}$ C, 20 to 95%RH (Non condensing), 9,000m (30,000feet) max                    |
|             | VIBRATION                            | 10 - 55Hz, 98.0m/s <sup>2</sup> (10G), 3minutes period, 60minutes each along X, Y and Z axis       |
|             | IMPACT                               | 490.3m/s <sup>2</sup> (50G), 11ms, once each along X, Y and Z axis                                 |
| SAFETY      | AGENCY APPROVALS                     | UL60950-1, C-UL, EN60950-1                                                                         |
| OTHERS      | CASE SIZE/WEIGHT                     | 25.4 X 9.9 X 50.8mm (W X H X D) / 40g max                                                          |
|             | COOLING METHOD                       | Convection/Forced air                                                                              |

- \*1 MGFW30xx05/MGFW30xx12/MGFW30xx15 is available as single output, +10V/+24V/+30V
- \*2 Rated input 12V, 24V or 48V DC  $I_o=100\%$
- \*3 Ripple and Ripple Noise is measured by using test board with in 50mm from output pin terminals.
- \*4 Drift is the DC output accuracy for eight hours period after a half-hour warm-up at 25 $^{\circ}$ C.
- \*5 Rated input voltage (DC24V, DC48V), rated output wattage, ambient temperature at 25 $^{\circ}$ C.
- \* Parallel operation with other model is not possible.

## External view



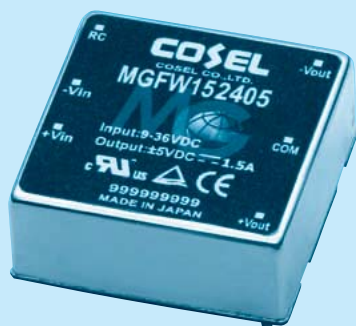
- ※ Tolerance  $\pm 0.5$
- ※ Dimensions in mm
- ※ Pin terminal material : Copper
- ※ Plating treatment of terminal : Lead free plating
- ※ Case material : Brass
- ※ Plating treatment of case : Nickel plating
- ※ Please keep enough creepage distance with the pattern on PCB and other components.
- ※ Mass 40g or less



RoHS

\* Link to [www.cosel.co.jp/en](http://www.cosel.co.jp/en) for the latest product information.

- ① Series name  
 ② Single output  
 ③ Output wattage  
 ④ Input voltage  
 ⑤ Output voltage  
 ⑥ Optional  
 G: Capacitor between Input and Output is removed.  
 R: with Remote ON/OFF (Positive logic control)



| MODEL                 | MGFW152405    | MGFW152412 | MGFW152415 | MGFW154805 | MGFW154812 | MGFW154815 |
|-----------------------|---------------|------------|------------|------------|------------|------------|
| MAX OUTPUT WATTAGE[W] | 15            | 15.6       | 15         | 15         | 15.6       | 15         |
| DC OUTPUT             | VOLTAGE[V] *1 | ±5 or +10  | ±12 or +24 | ±15 or +30 | ±5 or +10  | ±12 or +24 |
|                       | CURRENT[A]    | 1.5        | 0.65       | 0.5        | 1.5        | 0.65       |

## SPECIFICATIONS

|                               | MODEL                                | MGFW152405                                                                                   | MGFW152412      | MGFW152415      | MGFW154805    | MGFW154812      | MGFW154815      |
|-------------------------------|--------------------------------------|----------------------------------------------------------------------------------------------|-----------------|-----------------|---------------|-----------------|-----------------|
| INPUT                         | VOLTAGE[V]                           | DC9 - 36                                                                                     |                 |                 | DC18 - 76     |                 |                 |
|                               | CURRENT[A] *2                        | 0.74typ                                                                                      | 0.74typ         | 0.70typ         | 0.37typ       | 0.37typ         | 0.36typ         |
|                               | EFFICIENCY[%] *2                     | 84typ                                                                                        | 88typ           | 89typ           | 84typ         | 87typ           | 88typ           |
| OUTPUT                        | VOLTAGE[V]                           | ±5(+10)                                                                                      | ±12(+24)        | ±15(+30)        | ±5(+10)       | ±12(+24)        | ±15(+30)        |
|                               | CURRENT[A]                           | 1.5                                                                                          | 0.65            | 0.5             | 1.5           | 0.65            | 0.5             |
|                               | LINE REGULATION[mV]                  | 40max                                                                                        | 60max           | 75max           | 40max         | 60max           | 75max           |
|                               | CROSS REGULATION[mV]                 | *3 500max *5                                                                                 | 600max          | 750max          | 500max *5     | 600max          | 750max          |
|                               |                                      | *4 250max                                                                                    | 480max          | 600max          | 250max        | 480max          | 600max          |
|                               | RIPPLE[mVp-p] *6                     | -20 to +60℃ 100max                                                                           | 100max          | 100max          | 100max        | 100max          | 100max          |
|                               |                                      | -40 to -20℃ 120max                                                                           | 120max          | 120max          | 120max        | 120max          | 120max          |
|                               | RIPPLE NOISE[mVp-p] *6               | -20 to +60℃ 120max                                                                           | 120max          | 120max          | 120max        | 120max          | 120max          |
|                               |                                      | -40 to -20℃ 200max                                                                           | 200max          | 200max          | 200max        | 200max          | 200max          |
|                               | TEMPERATURE REGULATION[mV]           | -20 to +60℃ 50max                                                                            | 150max          | 180max          | 50max         | 150max          | 180max          |
|                               |                                      | -40 to -20℃ 80max                                                                            | 240max          | 290max          | 80max         | 240max          | 290max          |
| PROTECTION CIRCUIT AND OTHERS | DRIFT[mV] *7                         | 50max                                                                                        | 50max           | 60max           | 50max         | 50max           | 60max           |
|                               | START-UP TIME[ms]                    | 30max (Minimum input, Io=100%)                                                               |                 |                 |               |                 |                 |
|                               | OUTPUT VOLTAGE SETTING[V] *8         | 4.935 - 5.240                                                                                | 11.765 - 12.492 | 14.602 - 15.505 | 4.935 - 5.240 | 11.765 - 12.492 | 14.602 - 15.505 |
|                               | OVERCURRENT PROTECTION[V]            | Works over 105% of rating and recovers automatically                                         |                 |                 |               |                 |                 |
|                               | REMOTE ON/OFF                        | Provided (Negative logic L:ON, H:OFF)                                                        |                 |                 |               |                 |                 |
| ISOLATION                     | INPUT-OUTPUT                         | DC1,500V 1minute, Cutoff current = 10mA, DC500V 1,000MΩ min (20±15℃)                         |                 |                 |               |                 |                 |
|                               | INPUT-CASE                           | DC1,000V 1minute, Cutoff current = 10mA, DC500V 1,000MΩ min (20±15℃)                         |                 |                 |               |                 |                 |
|                               | OUTPUT-CASE                          | DC1,000V 1minute, Cutoff current = 10mA, DC500V 1,000MΩ min (20±15℃)                         |                 |                 |               |                 |                 |
| ENVIRONMENT                   | OPERATING TEMP., HUMID. AND ALTITUDE | -40 to +85℃, 20 to 95%RH (Non condensing) (Required Derating), 3,000m (10,000feet) max       |                 |                 |               |                 |                 |
|                               | STORAGE TEMP., HUMID. AND ALTITUDE   | -40 to +100℃, 20 to 95%RH (Non condensing), 9,000m (30,000feet) max                          |                 |                 |               |                 |                 |
|                               | VIBRATION                            | 10 - 55Hz, 98.0m/s <sup>2</sup> (10G), 3minutes period, 60minutes each along X, Y and Z axis |                 |                 |               |                 |                 |
|                               | IMPACT                               | 490.3m/s <sup>2</sup> (50G), 11ms, once each along X, Y and Z axis                           |                 |                 |               |                 |                 |
| SAFETY                        | AGENCY APPROVALS                     | UL60950-1, C-UL, EN60950-1                                                                   |                 |                 |               |                 |                 |
| OTHERS                        | CASE SIZE/WEIGHT                     | 25.4×9.9×25.4mm (W×H×D) / 20g max                                                            |                 |                 |               |                 |                 |
|                               | COOLING METHOD                       | Convection/Forced air                                                                        |                 |                 |               |                 |                 |

\*1 Single output +10V, +24V, +30V with no use of COM.

\*2 Rated input 12V, 24V or 48V DC Io=100%

\*3 Symmetrical loading from 5% to 100%.

\*4 Symmetrical loading from 20% to 100%.

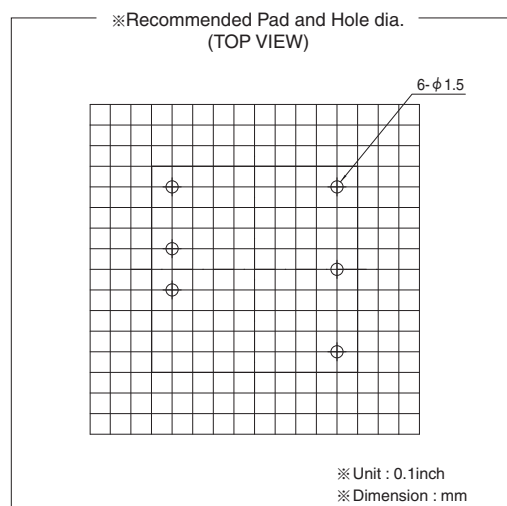
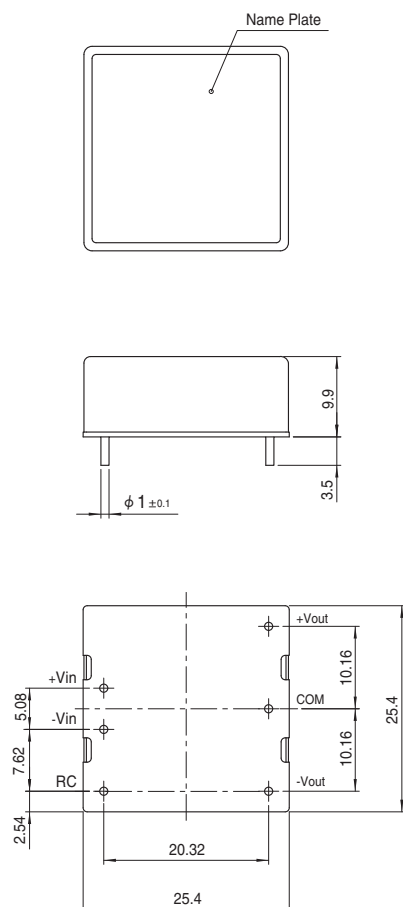
\*5 Refer to the instruction manual 11.

\*6 Ripple and Ripple Noise is measured by using test board with in 50mm from output pin terminals.

\*7 Drift is the DC output accuracy for eight hours period after a half-hour warm-up at 25℃.

\*8 Rated input voltage (DC24V, DC48V), rated output wattage, ambient temperature at 25℃. Parallel operation with other model is not possible.

## External view



- ※ Tolerance  $\pm 0.5$
- ※ Dimensions in mm
- ※ Pin terminal material : Copper
- ※ Plating treatment of terminal : Lead free plating
- ※ Case material : Brass
- ※ Plating treatment of case : Nickel plating
- ※ Please keep enough creepage distance with the pattern on PCB and other components.
- ※ Mass 20g or less



RoHS



\* Link to [www.cosel.co.jp/en](http://www.cosel.co.jp/en) for the latest product information.

- ① Series name  
 ② Single output  
 ③ Output wattage  
 ④ Input voltage  
 ⑤ Output voltage  
 ⑥ Optional  
 G: Capacitor between Input and Output is removed.  
 R: with Remote ON/OFF (Positive logic control)

| MODEL                 | MGFW302405    | MGFW302412 | MGFW302415 | MGFW304805 | MGFW304812 | MGFW304815 |
|-----------------------|---------------|------------|------------|------------|------------|------------|
| MAX OUTPUT WATTAGE[W] | 20            | 30         | 30         | 20         | 30         | 30         |
| DC OUTPUT             | VOLTAGE[V] *1 | ±5 or +10  | ±12 or +24 | ±15 or +30 | ±5 or +10  | ±12 or +24 |
|                       | CURRENT[A]    | 2          | 1.25       | 1          | 2          | 1.25       |

## SPECIFICATIONS

|                               | MODEL                                | MGFW302405                                                                                   | MGFW302412      | MGFW302415      | MGFW304805    | MGFW304812      | MGFW304815      |
|-------------------------------|--------------------------------------|----------------------------------------------------------------------------------------------|-----------------|-----------------|---------------|-----------------|-----------------|
| INPUT                         | VOLTAGE[V]                           | DC9 - 36                                                                                     |                 |                 | DC18 - 76     |                 |                 |
|                               | CURRENT[A] *2                        | 0.98typ                                                                                      | 1.44typ         | 1.44typ         | 0.49typ       | 0.72typ         | 0.72typ         |
|                               | EFFICIENCY[%] *2                     | 85typ                                                                                        | 87typ           | 87typ           | 85typ         | 87typ           | 87typ           |
| OUTPUT                        | VOLTAGE[V]                           | ±5(+10)                                                                                      | ±12(+24)        | ±15(+30)        | ±5(+10)       | ±12(+24)        | ±15(+30)        |
|                               | CURRENT[A]                           | 2                                                                                            | 1.25            | 1               | 2             | 1.25            | 1               |
|                               | LINE REGULATION[mV]                  | 40max                                                                                        | 60max           | 75max           | 40max         | 60max           | 75max           |
|                               | CROSS REGULATION[mV]                 | *3 500max *5                                                                                 | 600max          | 750max          | 500max *5     | 600max          | 750max          |
|                               |                                      | *4 250max                                                                                    | 480max          | 600max          | 250max        | 480max          | 600max          |
|                               | RIPPLE[mVp-p]                        | -20 to +60°C                                                                                 | 100max          | 100max          | 100max        | 100max          | 100max          |
|                               |                                      | -40 to -20°C                                                                                 | 120max          | 120max          | 120max        | 120max          | 120max          |
|                               | RIPPLE NOISE[mVp-p]                  | -20 to +60°C                                                                                 | 120max          | 120max          | 120max        | 120max          | 120max          |
|                               |                                      | -40 to -20°C                                                                                 | 200max          | 200max          | 200max        | 200max          | 200max          |
|                               | TEMPERATURE REGULATION[mV]           | -20 to +60°C                                                                                 | 50max           | 150max          | 50max         | 150max          | 180max          |
|                               |                                      | -40 to -20°C                                                                                 | 80max           | 240max          | 80max         | 240max          | 290max          |
|                               | DRIFT[mV] *7                         | 50max                                                                                        | 50max           | 60max           | 50max         | 50max           | 60max           |
| PROTECTION CIRCUIT AND OTHERS | START-UP TIME[ms]                    | 30max (Minimum input, Io=100%)                                                               |                 |                 |               |                 |                 |
|                               | OUTPUT VOLTAGE SETTING[V] *8         | 4.935 - 5.240                                                                                | 11.765 - 12.492 | 14.602 - 15.505 | 4.935 - 5.240 | 11.765 - 12.492 | 14.602 - 15.505 |
|                               | OVERCURRENT PROTECTION[V]            | Works over 105% of rating and recovers automatically                                         |                 |                 |               |                 |                 |
| ISOLATION                     | OVERVOLTAGE PROTECTION[V]            | Works over 120 to 160% of rating                                                             |                 |                 |               |                 |                 |
|                               | REMOTE ON/OFF                        | Provided (Negative logic L:ON, H:OFF)                                                        |                 |                 |               |                 |                 |
|                               | INPUT-OUTPUT                         | DC1,500V 1minute, Cutoff current = 10mA, DC500V 1,000MΩ min (20±15°C)                        |                 |                 |               |                 |                 |
| ENVIRONMENT                   | INPUT-CASE                           | DC1,000V 1minute, Cutoff current = 10mA, DC500V 1,000MΩ min (20±15°C)                        |                 |                 |               |                 |                 |
|                               | OUTPUT-CASE                          | DC1,000V 1minute, Cutoff current = 10mA, DC500V 1,000MΩ min (20±15°C)                        |                 |                 |               |                 |                 |
|                               | OPERATING TEMP., HUMID. AND ALTITUDE | -40 to +85°C, 20 to 95%RH (Non condensing) (Required Derating), 3,000m (10,000feet) max      |                 |                 |               |                 |                 |
| SAFETY                        | STORAGE TEMP., HUMID. AND ALTITUDE   | -40 to +100°C, 20 to 95%RH (Non condensing), 9,000m (30,000feet) max                         |                 |                 |               |                 |                 |
|                               | VIBRATION                            | 10 - 55Hz, 98.0m/s <sup>2</sup> (10G), 3minutes period, 60minutes each along X, Y and Z axis |                 |                 |               |                 |                 |
|                               | IMPACT                               | 490.3m/s <sup>2</sup> (50G), 11ms, once each along X, Y and Z axis                           |                 |                 |               |                 |                 |
| OTHERS                        | AGENCY APPROVALS                     | UL60950-1, C-UL, EN60950-1                                                                   |                 |                 |               |                 |                 |
|                               | CASE SIZE/WEIGHT                     | 25.4 X 9.9 X 50.8mm (W X H X D) / 40g max                                                    |                 |                 |               |                 |                 |
|                               | COOLING METHOD                       | Convection/Forced air                                                                        |                 |                 |               |                 |                 |

\*1 Single output +10V, +24V, +30V with no use of COM.

\*2 Rated input 12V, 24V or 48V DC Io=100%

\*3 Symmetrical loading from 5% to 100%.

\*4 Symmetrical loading from 20% to 100%.

\*5 Refer to the instruction manual 11.

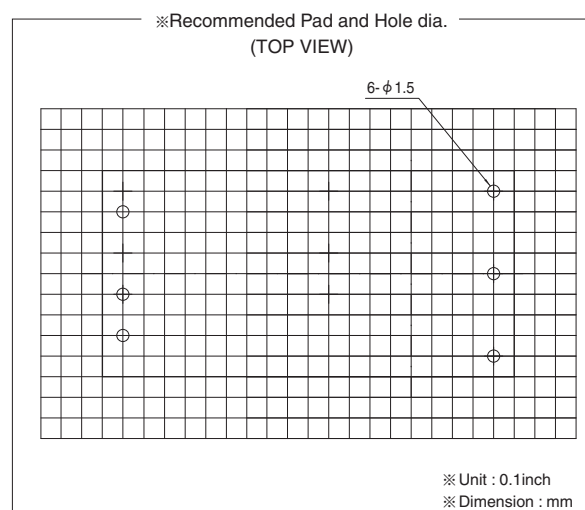
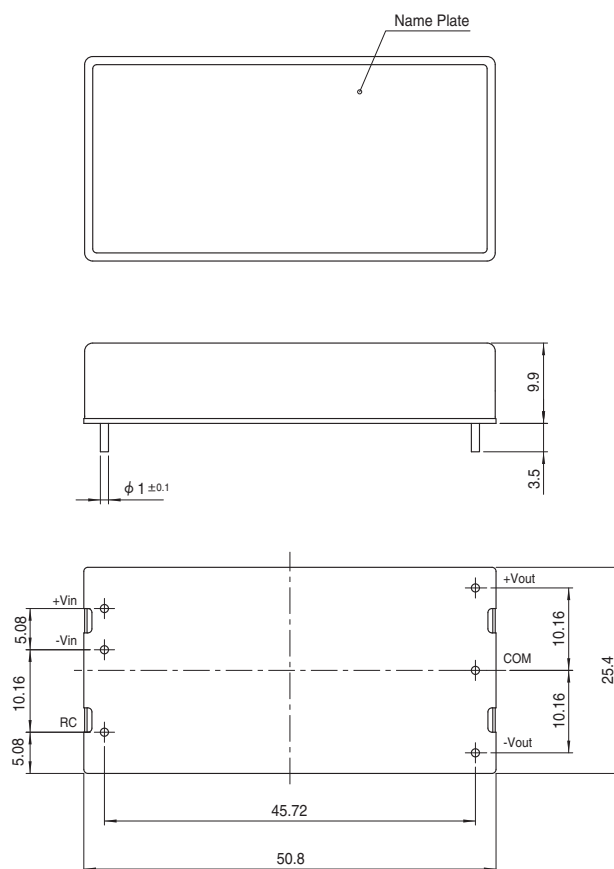
\*6 Ripple and Ripple Noise is measured by using test board with in 50mm from output pin terminals.

\*7 Drift is the DC output accuracy for eight hours period after a half-hour warm-up at 25°C.

\*8 Rated input voltage (DC24V, DC48V), rated output wattage, ambient temperature at 25°C.

\* Parallel operation with other model is not possible.

## External view



- ※ Tolerance  $\pm 0.5$
- ※ Dimensions in mm
- ※ Pin terminal material : Copper
- ※ Plating treatment of terminal : Lead free plating
- ※ Case material : Brass
- ※ Plating treatment of case : Nickel plating
- ※ Please keep enough creepage distance with the pattern on PCB and other components.
- ※ Mass 40g or less

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Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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