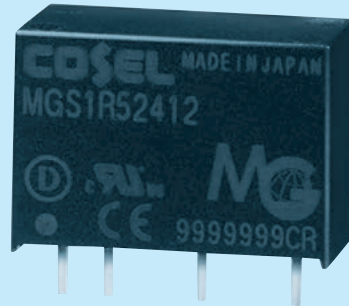


## MGS1R5

MG S 1R5 24 05 -□

① ② ③ ④ ⑤ ⑥



- ① Series name  
 ② Single output  
 ③ Output wattage  
 ④ Input voltage  
 ⑤ Output voltage  
 ⑥ Optional  
 Y2: Output voltage adjustable (+10%, -5%)

| MODEL                 | MGS1R5053R3 | MGS1R50505 | MGS1R50512 | MGS1R50515 | MGS1R5123R3 | MGS1R51205 | MGS1R51212 | MGS1R51215 |
|-----------------------|-------------|------------|------------|------------|-------------|------------|------------|------------|
| MAX OUTPUT WATTAGE[W] | 1.32        | 1.50       | 1.56       | 1.50       | 1.32        | 1.50       | 1.56       | 1.50       |
| DC OUTPUT             | VOLTAGE[V]  | 3.3        | 5          | 12         | 15          | 3.3        | 5          | 12         |
|                       | CURRENT[A]  | 0.4        | 0.3        | 0.13       | 0.1         | 0.4        | 0.3        | 0.1        |

## SPECIFICATIONS

|                    | MODEL                      | MGS1R5053R3                                          | MGS1R50505  | MGS1R50512    | MGS1R50515    | MGS1R5123R3                             | MGS1R51205  | MGS1R51212    | MGS1R51215    |
|--------------------|----------------------------|------------------------------------------------------|-------------|---------------|---------------|-----------------------------------------|-------------|---------------|---------------|
| INPUT              | VOLTAGE[V]                 | DC4.5 - 9 (Surge voltage 12.5V, 100ms max)           |             |               |               | DC9 - 18 (Surge voltage 25V, 100ms max) |             |               |               |
|                    | CURRENT[A]                 | *1 0.33typ                                           | 0.37typ     | 0.37typ       | 0.36typ       | 0.14typ                                 | 0.15typ     | 0.16typ       | 0.15typ       |
|                    | EFFICIENCY[%]              | *1 80typ                                             | 82typ       | 85typ         | 84typ         | 80typ                                   | 83typ       | 84typ         | 84typ         |
| OUTPUT             | VOLTAGE[V]                 | 3.3                                                  | 5           | 12            | 15            | 3.3                                     | 5           | 12            | 15            |
|                    | CURRENT[A]                 | 0.4                                                  | 0.3         | 0.13          | 0.1           | 0.4                                     | 0.3         | 0.13          | 0.1           |
|                    | LINE REGULATION[mV]        | 20max                                                | 20max       | 48max         | 60max         | 20max                                   | 20max       | 48max         | 60max         |
|                    | LOAD REGULATION[mV]        | 20max                                                | 20max       | 48max         | 60max         | 20max                                   | 20max       | 48max         | 60max         |
|                    | RIPPLE[mVp-p]              | *2 120max                                            | 120max      | 150max        | 150max        | 120max                                  | 120max      | 150max        | 150max        |
|                    | RIPPLE NOISE[mVp-p]        | *2 200max                                            | 200max      | 200max        | 200max        | 200max                                  | 200max      | 200max        | 200max        |
|                    | TEMPERATURE REGULATION[mV] | -20 to +85°C                                         | 50max       | 50max         | 150max        | 180max                                  | 50max       | 50max         | 150max        |
|                    |                            | -40 to +85°C                                         | 80max       | 80max         | 240max        | 290max                                  | 80max       | 80max         | 240max        |
|                    | DRIFT[mV]                  | *3 20max                                             | 20max       | 48max         | 60max         | 20max                                   | 20max       | 48max         | 60max         |
|                    | START-UP TIME[ms]          | 30max (Minimum input, Io=100%)                       |             |               |               |                                         |             |               |               |
| PROTECTION CIRCUIT | OUTPUT VOLTAGE SETTING[V]  | 3.21 - 3.42                                          | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 | 3.21 - 3.42                             | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 |
|                    | OVERCURRENT PROTECTION     | Works over 105% of rating and recovers automatically |             |               |               |                                         |             |               |               |

| MODEL                 | MGS1R5243R3 | MGS1R52405 | MGS1R52412 | MGS1R52415 | MGS1R5483R3 | MGS1R54805 | MGS1R54812 | MGS1R54815 |
|-----------------------|-------------|------------|------------|------------|-------------|------------|------------|------------|
| MAX OUTPUT WATTAGE[W] | 1.32        | 1.50       | 1.56       | 1.50       | 1.32        | 1.50       | 1.56       | 1.50       |
| DC OUTPUT             | VOLTAGE[V]  | 3.3        | 5          | 12         | 15          | 3.3        | 5          | 12         |
|                       | CURRENT[A]  | 0.4        | 0.3        | 0.13       | 0.1         | 0.4        | 0.3        | 0.1        |

## SPECIFICATIONS

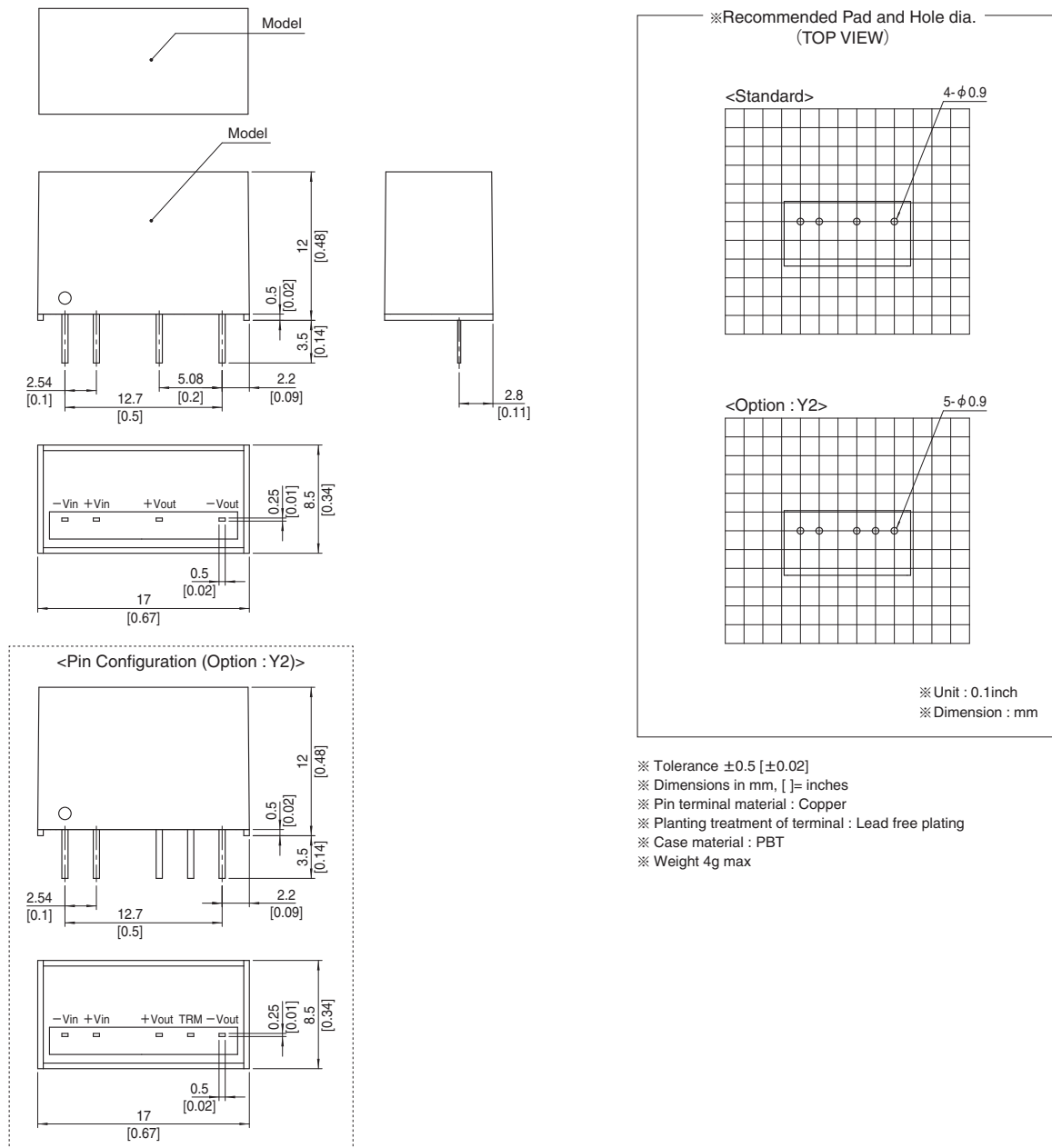
|                    | MODEL                      | MGS1R5243R3                                          | MGS1R52405  | MGS1R52412    | MGS1R52415    | MGS1R5483R3                               | MGS1R54805  | MGS1R54812    | MGS1R54815    |
|--------------------|----------------------------|------------------------------------------------------|-------------|---------------|---------------|-------------------------------------------|-------------|---------------|---------------|
| INPUT              | VOLTAGE[V]                 | DC18 - 36 (Surge voltage 50V, 100ms max)             |             |               |               | DC36 - 76 (Surge voltage 100V, 100ms max) |             |               |               |
|                    | CURRENT[A]                 | *1 0.071typ                                          | 0.079typ    | 0.080typ      | 0.077typ      | 0.036typ                                  | 0.040typ    | 0.040typ      | 0.039typ      |
|                    | EFFICIENCY[%]              | *1 78typ                                             | 80typ       | 82typ         | 82typ         | 77typ                                     | 80typ       | 82typ         | 82typ         |
| OUTPUT             | VOLTAGE[V]                 | 3.3                                                  | 5           | 12            | 15            | 3.3                                       | 5           | 12            | 15            |
|                    | CURRENT[A]                 | 0.4                                                  | 0.3         | 0.13          | 0.1           | 0.4                                       | 0.3         | 0.13          | 0.1           |
|                    | LINE REGULATION[mV]        | 20max                                                | 20max       | 48max         | 60max         | 20max                                     | 20max       | 48max         | 60max         |
|                    | LOAD REGULATION[mV]        | 20max                                                | 20max       | 48max         | 60max         | 20max                                     | 20max       | 48max         | 60max         |
|                    | RIPPLE[mVp-p]              | *2 120max                                            | 120max      | 150max        | 150max        | 120max                                    | 120max      | 150max        | 150max        |
|                    | RIPPLE NOISE[mVp-p]        | *2 200max                                            | 200max      | 200max        | 200max        | 200max                                    | 200max      | 200max        | 200max        |
|                    | TEMPERATURE REGULATION[mV] | -20 to +85°C                                         | 50max       | 50max         | 150max        | 180max                                    | 50max       | 50max         | 150max        |
|                    |                            | -40 to +85°C                                         | 80max       | 80max         | 240max        | 290max                                    | 80max       | 80max         | 240max        |
|                    | DRIFT[mV]                  | *3 20max                                             | 20max       | 48max         | 60max         | 20max                                     | 20max       | 48max         | 60max         |
|                    | START-UP TIME[ms]          | 30max (Minimum input, Io=100%)                       |             |               |               |                                           |             |               |               |
| PROTECTION CIRCUIT | OUTPUT VOLTAGE SETTING[V]  | 3.21 - 3.42                                          | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 | 3.21 - 3.42                               | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 |
|                    | OVERCURRENT PROTECTION     | Works over 105% of rating and recovers automatically |             |               |               |                                           |             |               |               |

## GENERAL SPECIFICATIONS

|             |                                      |                                                                                            |
|-------------|--------------------------------------|--------------------------------------------------------------------------------------------|
| ISOLATION   | INPUT-OUTPUT                         | DC1,500V or AC1,000V 1minute, Cutoff current=10mA, DC500V 1,000MΩ min (20±15°C)            |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE | -40 to +85°C, 20 to 95%RH (Non condensing) (Required derating), 5,000m (16,400feet) 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), 3minute 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                     | 17.0×12.0×8.5mm [0.67×0.48×0.34 inches] (W×H×D) / 4g max                                   |
|             | COOLING METHOD                       | Convection/Forced air                                                                      |

- \*1 Rated input 5V, 12V, 24V or 48V DC Io=100%
- \*2 Ripple and ripple noise is measured by using test board with ceramic capacitor 1μF at 50mm from output pins.
- \*3 Drift is the DC output accuracy for eight hours period after a half-hour warm-up at 25°C.
- \* Parallel operation with other model is not possible.
- \* MGW1R5xx12/MGW1R5xx15 is available as single output, +24V/+30V

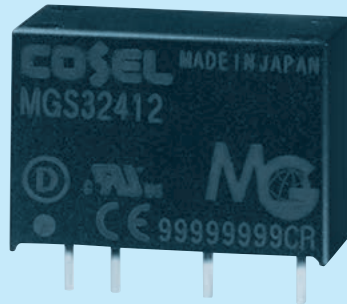
## External view



## MGS3

MG S 3 24 05 -□

① ② ③ ④ ⑤ ⑥



- ① Series name  
 ② Single output  
 ③ Output wattage  
 ④ Input voltage  
 ⑤ Output voltage  
 ⑥ Optional  
 Y2: Output voltage adjustable (+10%, -5%)

| MODEL                 | MGS3053R3  | MGS30505 | MGS30512 | MGS30515 | MGS3123R3 | MGS31205 | MGS31212 | MGS31215 |
|-----------------------|------------|----------|----------|----------|-----------|----------|----------|----------|
| MAX OUTPUT WATTAGE[W] | 2.64       | 3.0      | 3.0      | 3.0      | 2.64      | 3.0      | 3.0      | 3.0      |
| DC OUTPUT             | VOLTAGE[V] | 3.3      | 5        | 12       | 15        | 3.3      | 5        | 12       |
|                       | CURRENT[A] | 0.8      | 0.6      | 0.25     | 0.2       | 0.8      | 0.6      | 0.25     |

## SPECIFICATIONS

|                    | MODEL                     | MGS3053R3                                            | MGS30505    | MGS30512      | MGS30515      | MGS3123R3                               | MGS31205    | MGS31212      | MGS31215      |
|--------------------|---------------------------|------------------------------------------------------|-------------|---------------|---------------|-----------------------------------------|-------------|---------------|---------------|
| INPUT              | VOLTAGE[V]                | DC4.5 - 9 (Surge voltage 12.5V, 100ms max)           |             |               |               | DC9 - 18 (Surge voltage 25V, 100ms max) |             |               |               |
|                    | CURRENT[A]                | *1 0.67typ                                           | 0.73typ     | 0.71typ       | 0.71typ       | 0.28typ                                 | 0.30typ     | 0.29typ       | 0.30typ       |
|                    | EFFICIENCY[%]             | *1 79typ                                             | 82typ       | 85typ         | 85typ         | 80typ                                   | 83typ       | 86typ         | 85typ         |
| OUTPUT             | VOLTAGE[V]                | 3.3                                                  | 5           | 12            | 15            | 3.3                                     | 5           | 12            | 15            |
|                    | CURRENT[A]                | 0.8                                                  | 0.6         | 0.25          | 0.2           | 0.8                                     | 0.6         | 0.25          | 0.2           |
|                    | LINE REGULATION[mV]       | 20max                                                | 20max       | 48max         | 60max         | 20max                                   | 20max       | 48max         | 60max         |
|                    | LOAD REGULATION[mV]       | 20max                                                | 20max       | 48max         | 60max         | 20max                                   | 20max       | 48max         | 60max         |
|                    | RIPPLE[mVp-p]             | *2 120max                                            | 120max      | 150max        | 150max        | 120max                                  | 120max      | 150max        | 150max        |
|                    | RIPPLE NOISE[mVp-p]       | *2 200max                                            | 200max      | 200max        | 200max        | 200max                                  | 200max      | 200max        | 200max        |
|                    | TEMPERATURE               | -20 to +75°C                                         | 50max       | 50max         | 150max        | 180max                                  | 50max       | 50max         | 180max        |
|                    | REGULATION[mV]            | -40 to +75°C                                         | 80max       | 80max         | 240max        | 290max                                  | 80max       | 80max         | 240max        |
|                    | DRIFT[mV]                 | *3 20max                                             | 20max       | 48max         | 60max         | 20max                                   | 20max       | 48max         | 60max         |
|                    | START-UP TIME[ms]         | 30max (Minimum input, I <sub>o</sub> =100%)          |             |               |               |                                         |             |               |               |
| PROTECTION CIRCUIT | OUTPUT VOLTAGE SETTING[V] | 3.21 - 3.42                                          | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 | 3.21 - 3.42                             | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 |
|                    | OVERCURRENT PROTECTION    | Works over 105% of rating and recovers automatically |             |               |               |                                         |             |               |               |

| MODEL                 | MGS3243R3  | MGS32405 | MGS32412 | MGS32415 | MGS3483R3 | MGS34805 | MGS34812 | MGS34815 |
|-----------------------|------------|----------|----------|----------|-----------|----------|----------|----------|
| MAX OUTPUT WATTAGE[W] | 2.64       | 3.0      | 3.0      | 3.0      | 2.64      | 3.0      | 3.0      | 3.0      |
| DC OUTPUT             | VOLTAGE[V] | 3.3      | 5        | 12       | 15        | 3.3      | 5        | 12       |
|                       | CURRENT[A] | 0.8      | 0.6      | 0.25     | 0.2       | 0.8      | 0.6      | 0.25     |

## SPECIFICATIONS

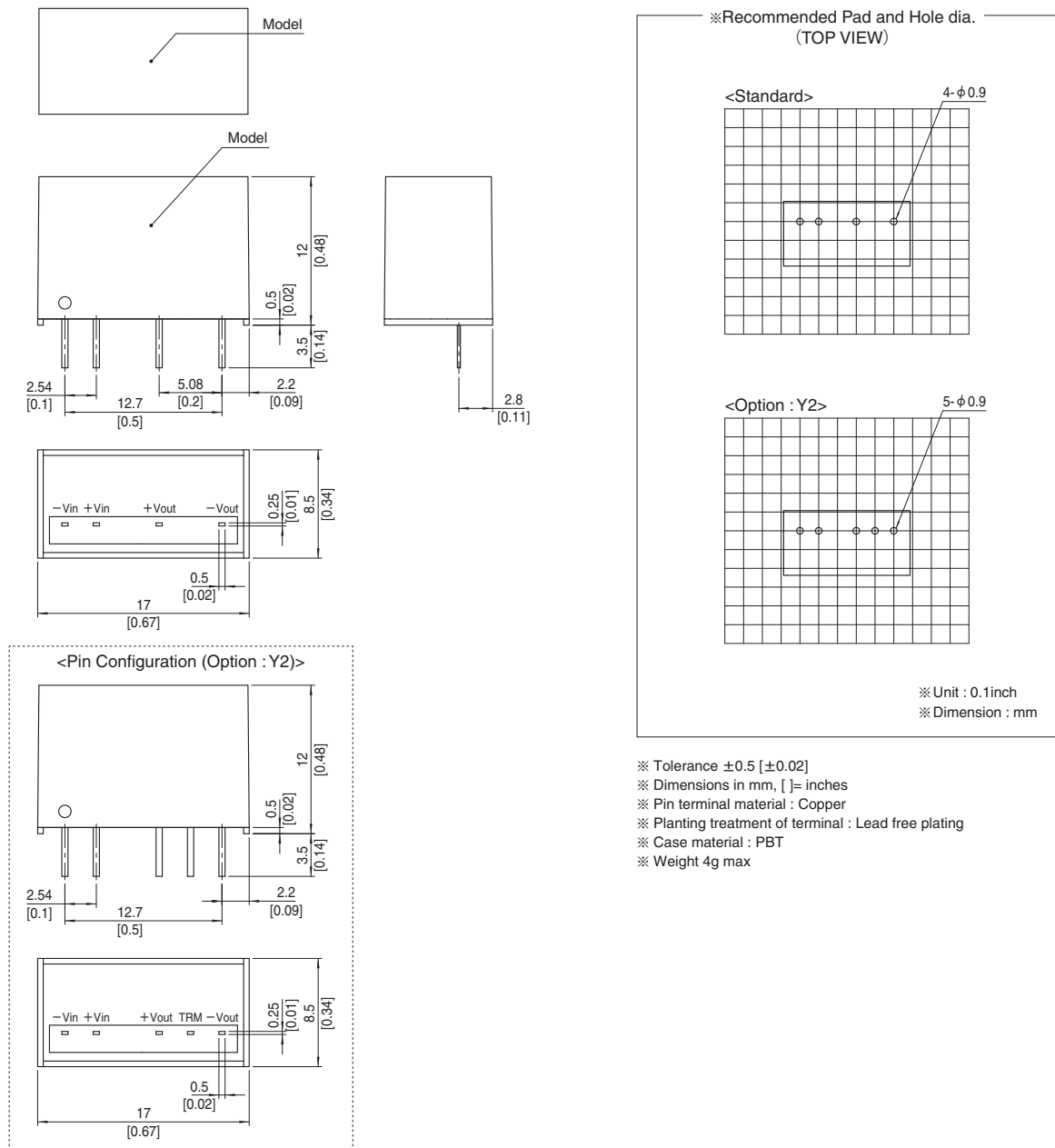
|                    | MODEL                     | MGS3243R3                                            | MGS32405    | MGS32412      | MGS32415      | MGS3483R3                                 | MGS34805    | MGS34812      | MGS34815      |
|--------------------|---------------------------|------------------------------------------------------|-------------|---------------|---------------|-------------------------------------------|-------------|---------------|---------------|
| INPUT              | VOLTAGE[V]                | DC18 - 36 (Surge voltage 50V, 100ms max)             |             |               |               | DC36 - 76 (Surge voltage 100V, 100ms max) |             |               |               |
|                    | CURRENT[A]                | *1 0.14typ                                           | 0.15typ     | 0.15typ       | 0.15typ       | 0.071typ                                  | 0.079typ    | 0.074typ      | 0.074typ      |
|                    | EFFICIENCY[%]             | *1 80typ                                             | 82typ       | 85typ         | 85typ         | 78typ                                     | 80typ       | 85typ         | 85typ         |
| OUTPUT             | VOLTAGE[V]                | 3.3                                                  | 5           | 12            | 15            | 3.3                                       | 5           | 12            | 15            |
|                    | CURRENT[A]                | 0.8                                                  | 0.6         | 0.25          | 0.2           | 0.8                                       | 0.6         | 0.25          | 0.2           |
|                    | LINE REGULATION[mV]       | 20max                                                | 20max       | 48max         | 60max         | 20max                                     | 20max       | 48max         | 60max         |
|                    | LOAD REGULATION[mV]       | 20max                                                | 20max       | 48max         | 60max         | 20max                                     | 20max       | 48max         | 60max         |
|                    | RIPPLE[mVp-p]             | *2 120max                                            | 120max      | 150max        | 150max        | 120max                                    | 120max      | 150max        | 150max        |
|                    | RIPPLE NOISE[mVp-p]       | *2 200max                                            | 200max      | 200max        | 200max        | 200max                                    | 200max      | 200max        | 200max        |
|                    | TEMPERATURE               | -20 to +75°C                                         | 50max       | 50max         | 150max        | 180max                                    | 50max       | 50max         | 180max        |
|                    | REGULATION[mV]            | -40 to +75°C                                         | 80max       | 80max         | 240max        | 290max                                    | 80max       | 80max         | 240max        |
|                    | DRIFT[mV]                 | *3 20max                                             | 20max       | 48max         | 60max         | 20max                                     | 20max       | 48max         | 60max         |
|                    | START-UP TIME[ms]         | 30max (Minimum input, I <sub>o</sub> =100%)          |             |               |               |                                           |             |               |               |
| PROTECTION CIRCUIT | OUTPUT VOLTAGE SETTING[V] | 3.21 - 3.42                                          | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 | 3.21 - 3.42                               | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 |
|                    | OVERCURRENT PROTECTION    | Works over 105% of rating and recovers automatically |             |               |               |                                           |             |               |               |

## GENERAL SPECIFICATIONS

|                    |                                             |                                                                                                                |
|--------------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>ISOLATION</b>   | <b>INPUT-OUTPUT</b>                         | DC1,500V or AC1,000V 1minute, Cutoff current=10mA, DC500V 1,000M $\Omega$ min (20 $\pm$ 15 $^{\circ}$ C)       |
| <b>ENVIRONMENT</b> | <b>OPERATING TEMP., HUMID. AND ALTITUDE</b> | -40 to +85 $^{\circ}$ C, 20 to 95%RH (Non condensing) (Required derating), 5,000m (16,400feet) max             |
|                    | <b>STORAGE TEMP., HUMID. AND ALTITUDE</b>   | -40 to +100 $^{\circ}$ C, 20 to 95%RH (Non condensing), 9,000m (30,000feet) max                                |
|                    | <b>VIBRATION</b>                            | 10 - 55Hz 98.0m/s $^2$ (10G), 3minute period, 60minutes each along X, Y and Z axis                             |
|                    | <b>IMPACT</b>                               | 490.3m/s $^2$ (50G) 11ms, once each along X, Y and Z axis                                                      |
| <b>SAFETY</b>      | <b>AGENCY APPROVALS</b>                     | UL60950-1, C-UL, EN60950-1                                                                                     |
| <b>OTHERS</b>      | <b>CASE SIZE/WEIGHT</b>                     | 17.0 $\times$ 12.0 $\times$ 8.5mm [0.67 $\times$ 0.48 $\times$ 0.34 inches] (W $\times$ H $\times$ D) / 4g max |
|                    | <b>COOLING METHOD</b>                       | Convection/Forced air                                                                                          |

- \*1 Rated input 5V, 12V, 24V or 48V DC Io=100%
- \*2 Ripple and ripple noise is measured by using test board with ceramic capacitor 1 $\mu$ F at 50mm from output pins.
- \*3 Drift is the DC output accuracy for eight hours period after a half-hour warm-up at 25 $^{\circ}$ C.
- \* Parallel operation with other model is not possible.
- \* MGW3xx12/MGW3xx15 is available as single output, +24V/+30V

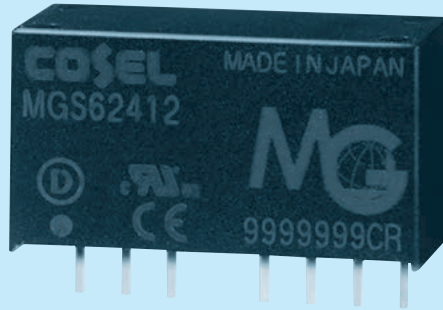
### External view



# MGS6

MG S 6 24 05 -□

① ② ③ ④ ⑤ ⑥



- ① Series name
- ② Single output
- ③ Output wattage
- ④ Input voltage
- ⑤ Output voltage
- ⑥ Optional
- Y2: Output voltage adjustable (+10%, -5%)

| MODEL                 | MGS6053R3  | MGS60505 | MGS60512 | MGS60515 | MGS6123R3 | MGS61205 | MGS61212 | MGS61215 |
|-----------------------|------------|----------|----------|----------|-----------|----------|----------|----------|
| MAX OUTPUT WATTAGE[W] | 5.28       | 6.0      | 6.0      | 6.0      | 5.28      | 6.0      | 6.0      | 6.0      |
| DC OUTPUT             | VOLTAGE[V] | 3.3      | 5        | 12       | 15        | 3.3      | 5        | 12       |
|                       | CURRENT[A] | 1.6      | 1.2      | 0.5      | 0.4       | 1.6      | 1.2      | 0.5      |

## SPECIFICATIONS

|                               | MODEL                      | MGS6053R3                                            | MGS60505    | MGS60512      | MGS60515      | MGS6123R3                               | MGS61205    | MGS61212      | MGS61215      |
|-------------------------------|----------------------------|------------------------------------------------------|-------------|---------------|---------------|-----------------------------------------|-------------|---------------|---------------|
| INPUT                         | VOLTAGE[V]                 | DC4.5 - 9 (Surge voltage 12.5V, 100ms max)           |             |               |               | DC9 - 18 (Surge voltage 25V, 100ms max) |             |               |               |
|                               | CURRENT[A]                 | *1 1.31typ                                           | 1.42typ     | 1.37typ       | 1.37typ       | 0.54typ                                 | 0.59typ     | 0.57typ       | 0.57typ       |
|                               | EFFICIENCY[%]              | *1 81typ                                             | 85typ       | 88typ         | 88typ         | 82typ                                   | 85typ       | 89typ         | 89typ         |
| OUTPUT                        | VOLTAGE[V]                 | 3.3                                                  | 5           | 12            | 15            | 3.3                                     | 5           | 12            | 15            |
|                               | CURRENT[A]                 | 1.6                                                  | 1.2         | 0.5           | 0.4           | 1.6                                     | 1.2         | 0.5           | 0.4           |
|                               | LINE REGULATION[mV]        | 20max                                                | 20max       | 48max         | 60max         | 20max                                   | 20max       | 48max         | 60max         |
|                               | LOAD REGULATION[mV]        | 20max                                                | 20max       | 48max         | 60max         | 20max                                   | 20max       | 48max         | 60max         |
|                               | RIPPLE[mVp-p]              | *2 lo=30% - 75max                                    |             | 75max         | 100max        | 100max                                  | 75max       | 75max         | 100max        |
|                               | RIPPLE NOISE[mVp-p]        | lo=0 - 30% 225max                                    |             | 225max        | 300max        | 300max                                  | 225max      | 225max        | 300max        |
|                               |                            | lo=30% - 120max                                      |             | 120max        | 150max        | 120max                                  | 120max      | 150max        | 150max        |
|                               | TEMPERATURE REGULATION[mV] | *2 lo=0 - 30% 300max                                 |             | 300max        | 400max        | 400max                                  | 300max      | 300max        | 400max        |
|                               |                            | -20 to +70°C 50max                                   |             | 50max         | 180max        | 50max                                   | 50max       | 150max        | 180max        |
|                               | DRIFT[mV]                  | -40 to +70°C 80max                                   |             | 80max         | 240max        | 80max                                   | 80max       | 240max        | 290max        |
| PROTECTION CIRCUIT AND OTHERS | OVERCURRENT PROTECTION     | Works over 105% of rating and recovers automatically |             |               |               |                                         |             |               |               |
|                               | REMOTE ON/OFF              | Provided (Negative logic L : ON, H : OFF)            |             |               |               |                                         |             |               |               |
|                               | START-UP TIME[ms]          | 30max (Minimum input, lo=100%)                       |             |               |               |                                         |             |               |               |
|                               | OUTPUT VOLTAGE SETTING[V]  | 3.21 - 3.42                                          | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 | 3.21 - 3.42                             | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 |

| MODEL                 | MGS6243R3  | MGS62405 | MGS62412 | MGS62415 | MGS6483R3 | MGS64805 | MGS64812 | MGS64815 |
|-----------------------|------------|----------|----------|----------|-----------|----------|----------|----------|
| MAX OUTPUT WATTAGE[W] | 5.28       | 6.0      | 6.0      | 6.0      | 5.28      | 6.0      | 6.0      | 6.0      |
| DC OUTPUT             | VOLTAGE[V] | 3.3      | 5        | 12       | 15        | 3.3      | 5        | 12       |
|                       | CURRENT[A] | 1.6      | 1.2      | 0.5      | 0.4       | 1.6      | 1.2      | 0.5      |

## SPECIFICATIONS

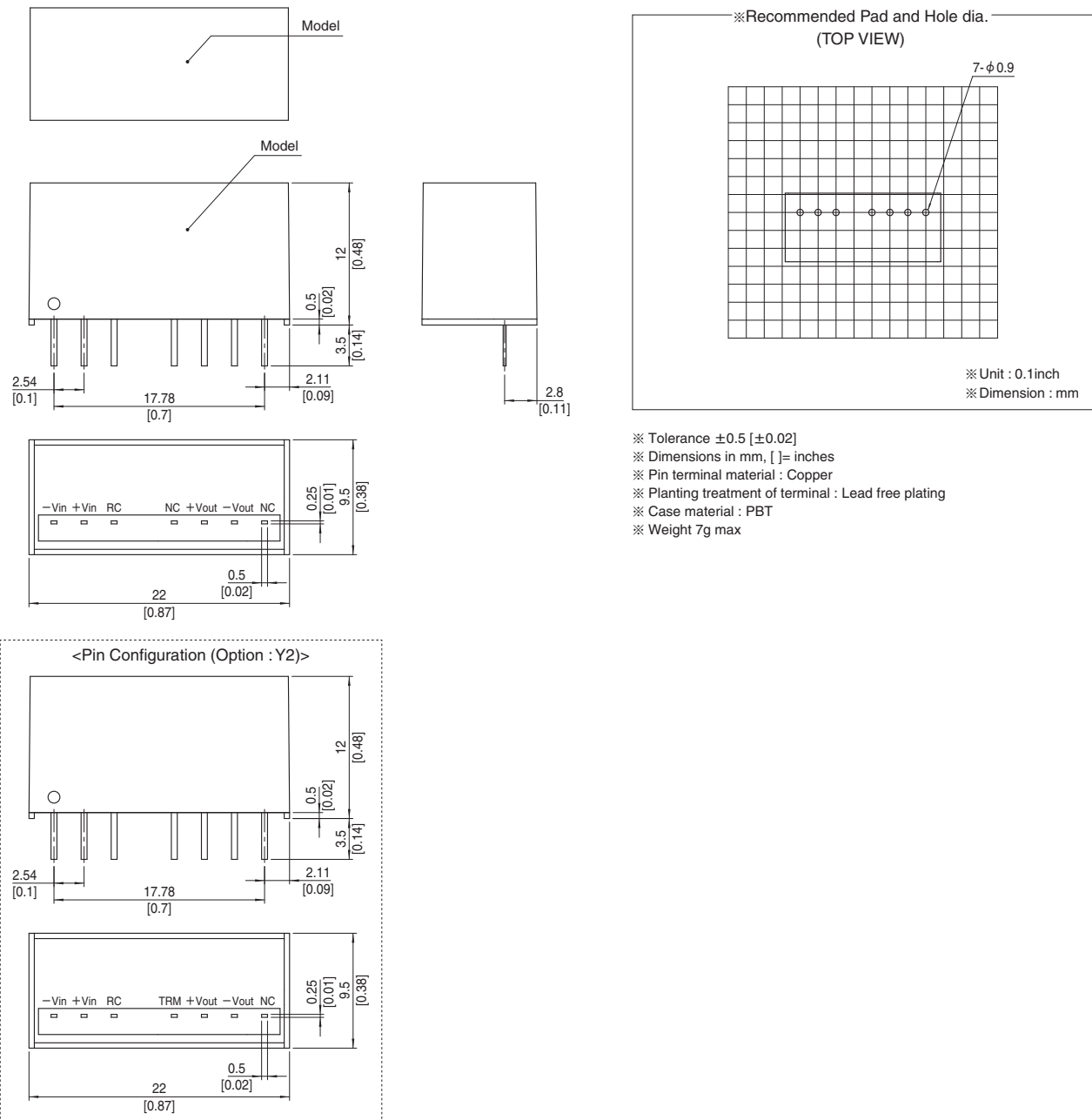
|                               | MODEL                      | MGS6243R3                                            | MGS62405    | MGS62412      | MGS62415      | MGS6483R3                                 | MGS64805    | MGS64812      | MGS64815      |
|-------------------------------|----------------------------|------------------------------------------------------|-------------|---------------|---------------|-------------------------------------------|-------------|---------------|---------------|
| INPUT                         | VOLTAGE[V]                 | DC18 - 36 (Surge voltage 50V, 100ms max)             |             |               |               | DC36 - 76 (Surge voltage 100V, 100ms max) |             |               |               |
|                               | CURRENT[A]                 | *1 0.27typ                                           | 0.30typ     | 0.29typ       | 0.29typ       | 0.14typ                                   | 0.15typ     | 0.15typ       | 0.15typ       |
|                               | EFFICIENCY[%]              | *1 82typ                                             | 85typ       | 89typ         | 89typ         | 81typ                                     | 85typ       | 89typ         | 89typ         |
| OUTPUT                        | VOLTAGE[V]                 | 3.3                                                  | 5           | 12            | 15            | 3.3                                       | 5           | 12            | 15            |
|                               | CURRENT[A]                 | 1.6                                                  | 1.2         | 0.5           | 0.4           | 1.6                                       | 1.2         | 0.5           | 0.4           |
|                               | LINE REGULATION[mV]        | 20max                                                | 20max       | 48max         | 60max         | 20max                                     | 20max       | 48max         | 60max         |
|                               | LOAD REGULATION[mV]        | 20max                                                | 20max       | 48max         | 60max         | 20max                                     | 20max       | 48max         | 60max         |
|                               | RIPPLE[mVp-p]              | *2 lo=30% - 75max                                    |             | 75max         | 100max        | 100max                                    | 75max       | 75max         | 100max        |
|                               | RIPPLE NOISE[mVp-p]        | lo=0 - 30% 225max                                    |             | 225max        | 300max        | 300max                                    | 225max      | 225max        | 300max        |
|                               |                            | lo=30% - 120max                                      |             | 120max        | 150max        | 120max                                    | 120max      | 150max        | 150max        |
|                               | TEMPERATURE REGULATION[mV] | *2 lo=0 - 30% 300max                                 |             | 300max        | 400max        | 400max                                    | 300max      | 300max        | 400max        |
|                               |                            | -20 to +70°C 50max                                   |             | 50max         | 180max        | 50max                                     | 50max       | 150max        | 180max        |
|                               | DRIFT[mV]                  | -40 to +70°C 80max                                   |             | 80max         | 240max        | 80max                                     | 80max       | 240max        | 290max        |
| PROTECTION CIRCUIT AND OTHERS | OVERCURRENT PROTECTION     | Works over 105% of rating and recovers automatically |             |               |               |                                           |             |               |               |
|                               | REMOTE ON/OFF              | Provided (Negative logic L : ON, H : OFF)            |             |               |               |                                           |             |               |               |
|                               | START-UP TIME[ms]          | 30max (Minimum input, lo=100%)                       |             |               |               |                                           |             |               |               |
|                               | OUTPUT VOLTAGE SETTING[V]  | 3.21 - 3.42                                          | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 | 3.21 - 3.42                               | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 |

## GENERAL SPECIFICATIONS

|             |                                      |                                                                                                                |
|-------------|--------------------------------------|----------------------------------------------------------------------------------------------------------------|
| ISOLATION   | INPUT-OUTPUT                         | DC1,500V or AC1,000V 1minute, Cutoff current=10mA, DC500V 1,000M $\Omega$ min (20 $\pm$ 15°C)                  |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE | -40 to +85°C, 20 to 95%RH (Non condensing) (Required derating), 5,000m (16,400feet) 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), 3minute 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                     | 22.0 $\times$ 12.0 $\times$ 9.5mm [0.87 $\times$ 0.48 $\times$ 0.38 inches] (W $\times$ H $\times$ D) / 7g max |
|             | COOLING METHOD                       | Convection/Forced air                                                                                          |

- \*1 Rated input 5V, 12V, 24V or 48V DC Io=100%
- \*2 Ripple and ripple noise is measured by using test board with ceramic capacitor 1 $\mu$ F at 50mm from output pins.
- \*3 Drift is the DC output accuracy for eight hours period after a half-hour warm-up at 25°C.
- \* Parallel operation with other model is not possible.
- \* MGW6xx12/MGW6xx15 is available as single output, +24V/+30V

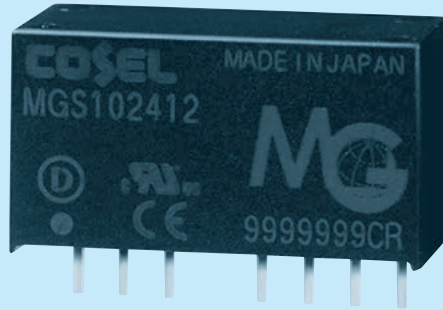
## External view



## MGS10

MG S 10 24 05 -□

① ② ③ ④ ⑤ ⑥



- ① Series name  
 ② Single output  
 ③ Output wattage  
 ④ Input voltage  
 ⑤ Output voltage  
 ⑥ Optional  
 Y2: Output voltage adjustable (+10%, -5%)

| MODEL                 | MGS10053R3 | MGS100505 | MGS100512 | MGS100515 | MGS10123R3 | MGS101205 | MGS101212 | MGS101215 |
|-----------------------|------------|-----------|-----------|-----------|------------|-----------|-----------|-----------|
| MAX OUTPUT WATTAGE[W] | 8.58       | 10.0      | 10.8      | 10.5      | 8.58       | 10.0      | 10.8      | 10.5      |
| DC OUTPUT             | VOLTAGE[V] | 3.3       | 5         | 12        | 15         | 3.3       | 5         | 12        |
|                       | CURRENT[A] | 2.6       | 2.0       | 0.9       | 0.7        | 2.6       | 2.0       | 0.9       |

## SPECIFICATIONS

|                               | MODEL                      | MGS10053R3                                           | MGS100505   | MGS100512     | MGS100515     | MGS10123R3                              | MGS101205   | MGS101212     | MGS101215     |
|-------------------------------|----------------------------|------------------------------------------------------|-------------|---------------|---------------|-----------------------------------------|-------------|---------------|---------------|
| INPUT                         | VOLTAGE[V]                 | DC4.5 - 9 (Surge voltage 12.5V, 100ms max)           |             |               |               | DC9 - 18 (Surge voltage 25V, 100ms max) |             |               |               |
|                               | CURRENT[A]                 | *1 2.02typ                                           | 2.30typ     | 2.46typ       | 2.39typ       | 0.83typ                                 | 0.94typ     | 1.02typ       | 0.99typ       |
|                               | EFFICIENCY[%]              | *1 85typ                                             | 87typ       | 88typ         | 88typ         | 87typ                                   | 89typ       | 89typ         | 89typ         |
| OUTPUT                        | VOLTAGE[V]                 | 3.3                                                  | 5           | 12            | 15            | 3.3                                     | 5           | 12            | 15            |
|                               | CURRENT[A]                 | 2.6                                                  | 2.0         | 0.9           | 0.7           | 2.6                                     | 2.0         | 0.9           | 0.7           |
|                               | LINE REGULATION[mV]        | 20max                                                | 20max       | 48max         | 60max         | 20max                                   | 20max       | 48max         | 60max         |
|                               | LOAD REGULATION[mV]        | 20max                                                | 20max       | 48max         | 60max         | 20max                                   | 20max       | 48max         | 60max         |
|                               | RIPPLE[mVp-p]              | lo=30% -                                             | 75max       | 75max         | 100max        | 100max                                  | 75max       | 75max         | 100max        |
|                               |                            | lo=0 - 30%                                           | 225max      | 225max        | 300max        | 300max                                  | 225max      | 300max        | 300max        |
|                               | RIPPLE NOISE[mVp-p]        | lo=30% -                                             | 120max      | 120max        | 150max        | 150max                                  | 120max      | 120max        | 150max        |
|                               |                            | lo=0 - 30%                                           | 300max      | 300max        | 400max        | 400max                                  | 300max      | 300max        | 400max        |
|                               | TEMPERATURE REGULATION[mV] | -20 to +50°C                                         | 50max       | 50max         | 150max        | 180max                                  | 50max       | 50max         | 150max        |
|                               |                            | -40 to +50°C                                         | 80max       | 80max         | 240max        | 290max                                  | 80max       | 80max         | 240max        |
| PROTECTION CIRCUIT AND OTHERS | DRIFT[mV]                  | *3 20max                                             | 20max       | 48max         | 60max         | 20max                                   | 20max       | 48max         | 60max         |
|                               | START-UP TIME[ms]          | 30max (Minimum input, lo=100%)                       |             |               |               |                                         |             |               |               |
|                               | OUTPUT VOLTAGE SETTING[V]  | 3.21 - 3.42                                          | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 | 3.21 - 3.42                             | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 |
|                               | OVERCURRENT PROTECTION     | Works over 105% of rating and recovers automatically |             |               |               |                                         |             |               |               |
| PROTECTION CIRCUIT AND OTHERS | REMOTE ON/OFF              | Provided (Negative logic L : ON, H : OFF)            |             |               |               |                                         |             |               |               |

| MODEL                 | MGS10243R3 | MGS102405 | MGS102412 | MGS102415 | MGS10483R3 | MGS104805 | MGS104812 | MGS104815 |
|-----------------------|------------|-----------|-----------|-----------|------------|-----------|-----------|-----------|
| MAX OUTPUT WATTAGE[W] | 8.58       | 10.0      | 10.8      | 10.5      | 8.58       | 10.0      | 10.8      | 10.5      |
| DC OUTPUT             | VOLTAGE[V] | *1 3.3    | 5         | 12        | 15         | 3.3       | 5         | 12        |
|                       | CURRENT[A] | 2.6       | 2.0       | 0.9       | 0.7        | 2.6       | 2.0       | 0.9       |

## SPECIFICATIONS

|                               | MODEL                      | MGS10243R3                                           | MGS102405   | MGS102412     | MGS102415     | MGS10483R3                                | MGS104805   | MGS104812     | MGS104815     |
|-------------------------------|----------------------------|------------------------------------------------------|-------------|---------------|---------------|-------------------------------------------|-------------|---------------|---------------|
| INPUT                         | VOLTAGE[V]                 | DC18 - 36 (Surge voltage 50V, 100ms max)             |             |               |               | DC36 - 76 (Surge voltage 100V, 100ms max) |             |               |               |
|                               | CURRENT[A]                 | *1 0.42typ                                           | 0.47typ     | 0.50typ       | 0.49typ       | 0.21typ                                   | 0.24typ     | 0.25typ       | 0.25typ       |
|                               | EFFICIENCY[%]              | *1 87typ                                             | 89typ       | 90typ         | 90typ         | 87typ                                     | 89typ       | 90typ         | 90typ         |
| OUTPUT                        | VOLTAGE[V]                 | 3.3                                                  | 5           | 12            | 15            | 3.3                                       | 5           | 12            | 15            |
|                               | CURRENT[A]                 | 2.6                                                  | 2.0         | 0.9           | 0.7           | 2.6                                       | 2.0         | 0.9           | 0.7           |
|                               | LINE REGULATION[mV]        | 20max                                                | 20max       | 48max         | 60max         | 20max                                     | 20max       | 48max         | 60max         |
|                               | LOAD REGULATION[mV]        | 20max                                                | 20max       | 48max         | 60max         | 20max                                     | 20max       | 48max         | 60max         |
|                               | RIPPLE[mVp-p]              | lo=30% -                                             | 75max       | 75max         | 100max        | 100max                                    | 75max       | 75max         | 100max        |
|                               |                            | lo=0 - 30%                                           | 225max      | 225max        | 300max        | 300max                                    | 225max      | 300max        | 300max        |
|                               | RIPPLE NOISE[mVp-p]        | lo=30% -                                             | 120max      | 120max        | 150max        | 150max                                    | 120max      | 120max        | 150max        |
|                               |                            | lo=0 - 30%                                           | 300max      | 300max        | 400max        | 400max                                    | 300max      | 300max        | 400max        |
|                               | TEMPERATURE REGULATION[mV] | -20 to +50°C                                         | 50max       | 50max         | 150max        | 180max                                    | 50max       | 50max         | 150max        |
|                               |                            | -40 to +50°C                                         | 80max       | 80max         | 240max        | 290max                                    | 80max       | 80max         | 240max        |
| PROTECTION CIRCUIT AND OTHERS | DRIFT[mV]                  | *3 20max                                             | 20max       | 48max         | 60max         | 20max                                     | 20max       | 48max         | 60max         |
|                               | START-UP TIME[ms]          | 30max (Minimum input, lo=100%)                       |             |               |               |                                           |             |               |               |
|                               | OUTPUT VOLTAGE SETTING[V]  | 3.21 - 3.42                                          | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 | 3.21 - 3.42                               | 4.90 - 5.21 | 11.64 - 12.36 | 14.55 - 15.45 |
|                               | OVERCURRENT PROTECTION     | Works over 105% of rating and recovers automatically |             |               |               |                                           |             |               |               |
| PROTECTION CIRCUIT AND OTHERS | REMOTE ON/OFF              | Provided (Negative logic L : ON, H : OFF)            |             |               |               |                                           |             |               |               |

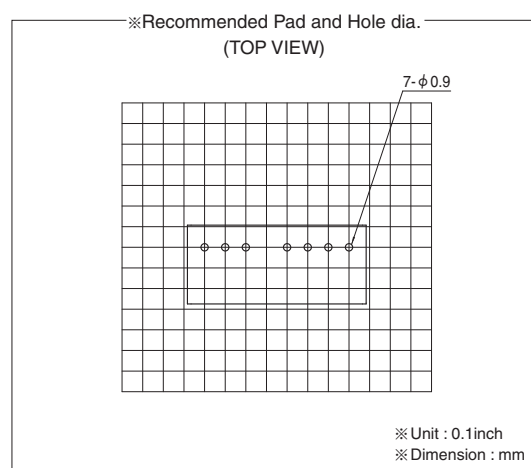
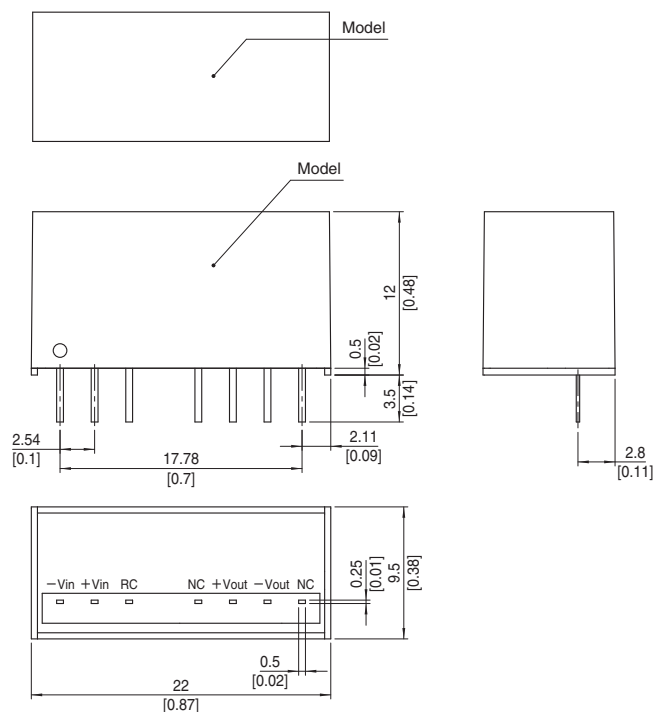


## GENERAL SPECIFICATIONS

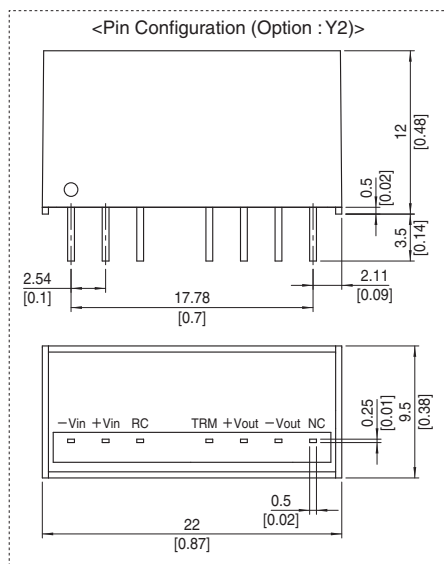
|             |                                      |                                                                                                                |
|-------------|--------------------------------------|----------------------------------------------------------------------------------------------------------------|
| ISOLATION   | INPUT-OUTPUT                         | DC1,500V or AC1,000V 1minute, Cutoff current=10mA, DC500V 1,000M $\Omega$ min (20 $\pm$ 15°C)                  |
| ENVIRONMENT | OPERATING TEMP., HUMID. AND ALTITUDE | -40 to +85°C, 20 to 95%RH (Non condensing) (Required derating), 5,000m (16,400feet) 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), 3minute 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                     | 22.0 $\times$ 12.0 $\times$ 9.5mm [0.87 $\times$ 0.48 $\times$ 0.38 inches] (W $\times$ H $\times$ D) / 7g max |
|             | COOLING METHOD                       | Convection/Forced air                                                                                          |

- \*1 Rated input 5V, 12V, 24V or 48V DC Io=100%
- \*2 Ripple and ripple noise is measured by using test board with ceramic capacitor 1 $\mu$ F at 50mm from output pins.
- \*3 Drift is the DC output accuracy for eight hours period after a half-hour warm-up at 25°C.
- \* Parallel operation with other model is not possible.
- \* MGW10xx12/MGW10xx15 is available as single output, +24V/+30V

## External view



- ※ Tolerance  $\pm 0.5$  [ $\pm 0.02$ ]
- ※ Dimensions in mm, [ ] = inches
- ※ Pin terminal material : Copper
- ※ Planting treatment of terminal : Lead free plating
- ※ Case material : PBT
- ※ Weight 7g max

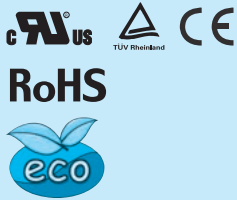




## MGS15

MG S 15 24 05 -□

① ② ③ ④ ⑤ ⑥



- 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        | 120max          | 120max          |
|                                     | RIPPLE NOISE[mVp-p] *3          | -20 to +60°C                                                                | 75max         | 75max           | 100max          | 100max        | 75max         | 100max          | 100max          |
|                                     |                                 | -40 to -20°C                                                                | 150max        | 150max          | 150max          | 150max        | 150max        | 150max          | 150max          |
|                                     | TEMPERATURE REGULATION[mV]      | -20 to +60°C                                                                | 50max         | 50max           | 150max          | 180max        | 50max         | 50max           | 150max          |
|                                     |                                 | -40 to +60°C                                                                | 80max         | 80max           | 240max          | 290max        | 80max         | 80max           | 240max          |
|                                     | DRIFT[mV] *4                    | 20max                                                                       | 20max         | 48max           | 60max           | 20max         | 20max         | 48max           | 60max           |
| PROTECTION<br>CIRCUIT AND<br>OTHERS | START-UP TIME[ms]               | 30max (Minimum input, Io=100%)                                              |               |                 |                 |               |               |                 |                 |
|                                     | OUTPUT VOLTAGE ADJUSTMENT RANGE | 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          | 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

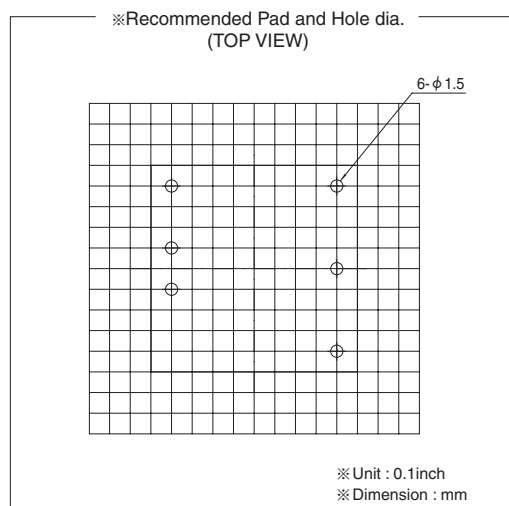
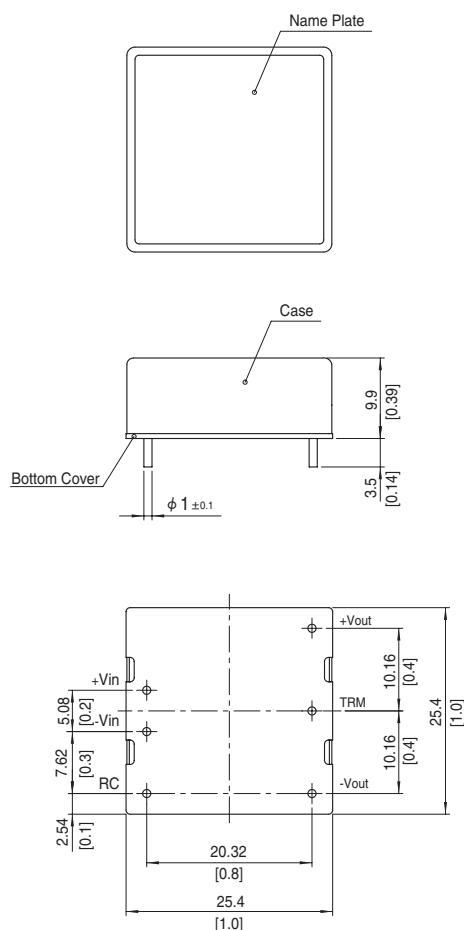
|                                     | MODEL                           | MGS15483R3                                           | MGS154805     | MGS154812       | MGS154815       |
|-------------------------------------|---------------------------------|------------------------------------------------------|---------------|-----------------|-----------------|
| 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                                         | 75max         | 75max           | 100max          |
|                                     |                                 | -40 to -20°C                                         | 150max        | 150max          | 150max          |
|                                     | TEMPERATURE REGULATION[mV]      | -20 to +60°C                                         | 50max         | 50max           | 150max          |
|                                     |                                 | -40 to +60°C                                         | 80max         | 80max           | 240max          |
|                                     | DRIFT[mV] *4                    | 20max                                                | 20max         | 48max           | 60max           |
| PROTECTION<br>CIRCUIT AND<br>OTHERS | START-UP TIME[ms]               | 30max (Minimum input, Io=100%)                       |               |                 |                 |
|                                     | OUTPUT VOLTAGE ADJUSTMENT RANGE | 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          | 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 1,000MΩ 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 X 9.9 X 25.4mm [1 X 0.39 X 1 inches] (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<sub>o</sub>=100%
- \*3 Ripple and Ripple Noise is measured by using test board with ceramic capacitor 22μF at 50mm from output pins. (20MHz Oscilloscope)
- \*4 Drift is the DC output accuracy for eight hours period after a half-hour warm-up at 25℃.
- \*5 Rated input voltage (DC12V, DC24V, DC48V), rated output wattage, ambient temperature at 25℃.
- \* Parallel operation with other model is not possible.

## External view

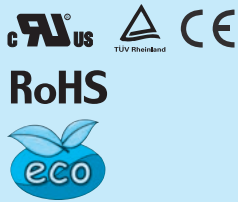


- ※ Tolerance ±0.5 [±0.02]
- ※ Dimensions in mm, [ ]=inches
- ※ Pin terminal material : Copper
- ※ Plating treatment of terminal : Lead free plating
- ※ Case material : Brass
- ※ Plating treatment of case : Nickel plating
- ※ Bottom Cover : FR4 (t=0.6) [t=0.024]
- ※ Please keep enough creepage distance with the pattern on PCB and other components.
- ※ Weight 20g max

# MGS30

MG S 30 24 05 - ☐

① ② ③ ④ ⑤ ⑥



- 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                   | 2.45typ                                              | 2.75typ       | 2.78typ         | 2.78typ         | 1.21typ       | 1.36typ       | 1.36typ         | 1.36typ         |
|                               | EFFICIENCY[%] *2                | 90typ                                                | 91typ         | 90typ           | 90typ           | 91typ         | 92typ         | 92typ           | 92typ           |
| 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                                         | 75max         | 75max           | 100max          | 100max        | 75max         | 75max           | 100max          |
|                               |                                 | -40 to -20°C                                         | 150max        | 150max          | 150max          | 150max        | 150max        | 150max          | 150max          |
|                               | TEMPERATURE REGULATION[mV]      | -20 to +60°C                                         | 50max         | 50max           | 150max          | 180max        | 50max         | 50max           | 150max          |
|                               |                                 | -40 to +60°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 | 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          | 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

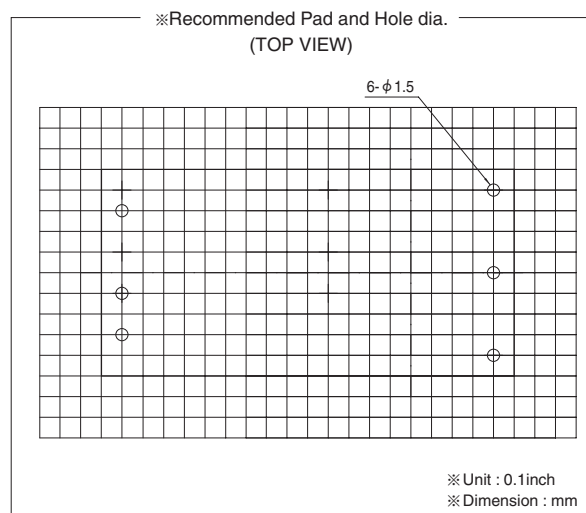
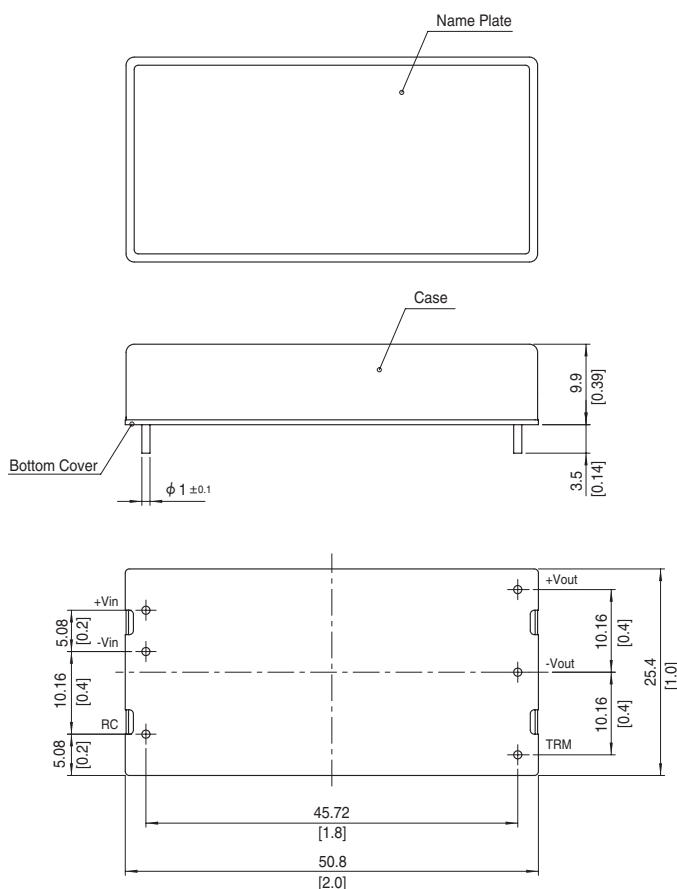
|                               | MODEL                           | MGS30483R3                                           | MGS304805     | MGS304812       | MGS304815       |
|-------------------------------|---------------------------------|------------------------------------------------------|---------------|-----------------|-----------------|
| INPUT                         | VOLTAGE[V]                      | DC36 - 76                                            |               |                 |                 |
|                               | CURRENT[A] *2                   | 0.61typ                                              | 0.68typ       | 0.68typ         | 0.68typ         |
|                               | EFFICIENCY[%] *2                | 91typ                                                | 92typ         | 92typ           | 92typ           |
| 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                                         | 75max         | 75max           | 100max          |
|                               |                                 | -40 to -20°C                                         | 150max        | 150max          | 150max          |
|                               | TEMPERATURE REGULATION[mV]      | -20 to +60°C                                         | 50max         | 50max           | 150max          |
|                               |                                 | -40 to +60°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 | 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          | 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 1,000MΩ 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 X 9.9 X 50.8mm [1 X 0.39 X 2 inches] (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<sub>o</sub>=100%
- \*3 Ripple and Ripple Noise is measured by using test board with ceramic capacitor 22μF at 50mm from output pins. (20MHz Oscilloscope)
- \*4 Drift is the DC output accuracy for eight hours period after a half-hour warm-up at 25℃.
- \*5 Rated input voltage (DC12V, DC24V, DC48V), rated output wattage, ambient temperature at 25℃.
- \* Parallel operation with other model is not possible.

## External view



- ※ Tolerance ±0.5 [±0.02]
- ※ Dimensions in mm, [ ]=inches
- ※ Pin terminal material : Copper
- ※ Plating treatment of terminal : Lead free plating
- ※ Case material : Brass
- ※ Plating treatment of case : Nickel plating
- ※ Bottom Cover : FR4 (t=0.6) [t=0.024]
- ※ Please keep enough creepage distance with the pattern on PCB and other components.
- ※ Weight 40g max