

# MGFS15

MGF 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                 | 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]                                       | -20 to +60°C   | 75max           | 75max           | 100max     | 100max |
|                                 |   | *3 -40 to -20°C                                      | 100max          | 100max          | 120max     | 120max |
|                                 | RIPPLE NOISE[mVp-p]                                 | -20 to +60°C   | 75max           | 75max           | 100max     | 100max |
|                                 |   | *3 -40 to -20°C                                      | 150max          | 150max          | 150max     | 150max |
|                                 | TEMPERATURE REGULATION[mV]                          | -20 to +60°C   | 50max           | 50max           | 150max     | 180max |
|                                 |   | -40 to +60°C   | 80max           | 80max           | 240max     | 290max |
| 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 |            |        |
| PROTECTION CIRCUIT AND OTHERS   | OVERCURRENT PROTECTION                              | 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]                                       | -20 to +60°C   | 75max           | 75max           | 100max     | 100max |
|                                 |   | *3 -40 to -20°C                                      | 100max          | 100max          | 120max     | 120max |
|                                 | RIPPLE NOISE[mVp-p]                                 | -20 to +60°C   | 75max           | 75max           | 100max     | 100max |
|                                 |   | *3 -40 to -20°C                                      | 150max          | 150max          | 150max     | 150max |
|                                 | TEMPERATURE REGULATION[mV]                          | -20 to +60°C   | 50max           | 50max           | 150max     | 180max |
|                                 |   | -40 to +60°C   | 80max           | 80max           | 240max     | 290max |
| 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 |            |        |
| PROTECTION CIRCUIT AND OTHERS   | OVERCURRENT PROTECTION                              | Works over 105% of rating and recovers automatically |                 |                 |            |        |
|                                 | REMOTE ON/OFF                                       | Provided (Negative logic L:ON, H:OFF)                |                 |                 |            |        |

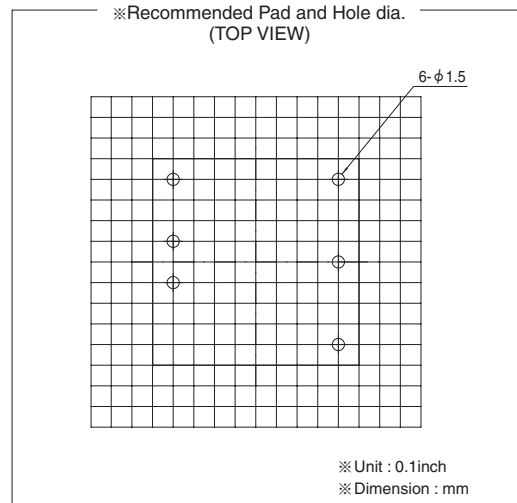
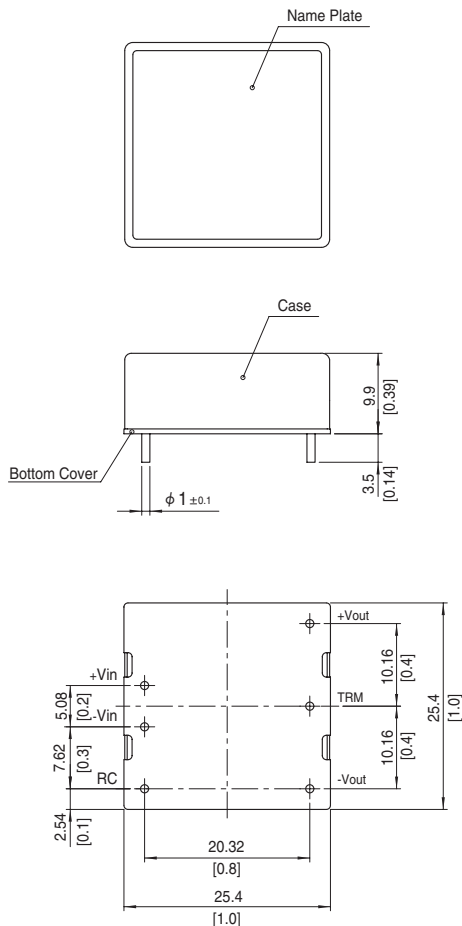
## GENERAL SPECIFICATIONS

|             |                                      |  |
|-------------|--------------------------------------|--|
| ISOLATION   | INPUT-OUTPUT                         | DC1,500V 1minute, Cutoff current = 10mA, DC500V 1,000MΩ min (20±15°C)                        |
|             | 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)                        |
| ENVIRONMENT | 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 |
|             | 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 MGFW15xx05/MGFW15xx12/MGFW15xx15 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°C.
- \*5 Rated input voltage (DC24V, DC48V), rated output wattage, ambient temperature at 25°C.
- \* Parallel operation with other model is not possible.

### External view

MG

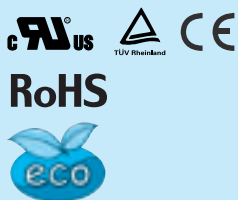


- ※ Tolerance ±0.5 [±0.02]
- ※ Dimensions in mm, [ ]=inches
- ※ Pin terminal material : Copper
- ※ Plating treatment of terminal : Lead free plating
- ※ Case material : Brass
- ※ Plating treatment of case : Nickel plating
- ※ Bottom Cover : FR4 (t=0.6) [t=0.024]
- ※ Please keep enough creepage distance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

# MGFS30

MGF 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                 | 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                                       | 1.16typ  | 1.39typ         | 1.40typ         | 1.40typ    |        |
|                                 | EFFICIENCY[%] *2                                    | 89typ  | 90typ           | 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     | 100max |
|                                 |   | -40 to -20°C   | 100max          | 100max          | 120max     | 120max |
|                                 | RIPPLE NOISE[mVp-p] *3                              | -20 to +60°C   | 75max           | 75max           | 100max     | 100max |
|                                 |   | -40 to -20°C   | 150max          | 150max          | 150max     | 150max |
|                                 | TEMPERATURE REGULATION[mV]                          | -20 to +60°C   | 50max           | 50max           | 150max     | 180max |
|                                 |   | -40 to +60°C   | 80max           | 80max           | 240max     | 290max |
|                                 | 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 |            |        |
| PROTECTION CIRCUIT AND OTHERS   | OVERCURRENT PROTECTION                              | Works over 105% of rating and recovers automatically |                 |                 |            |        |
|                                 | 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

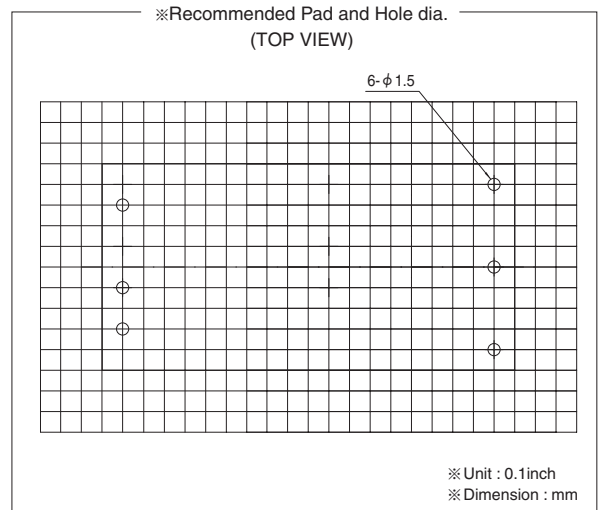
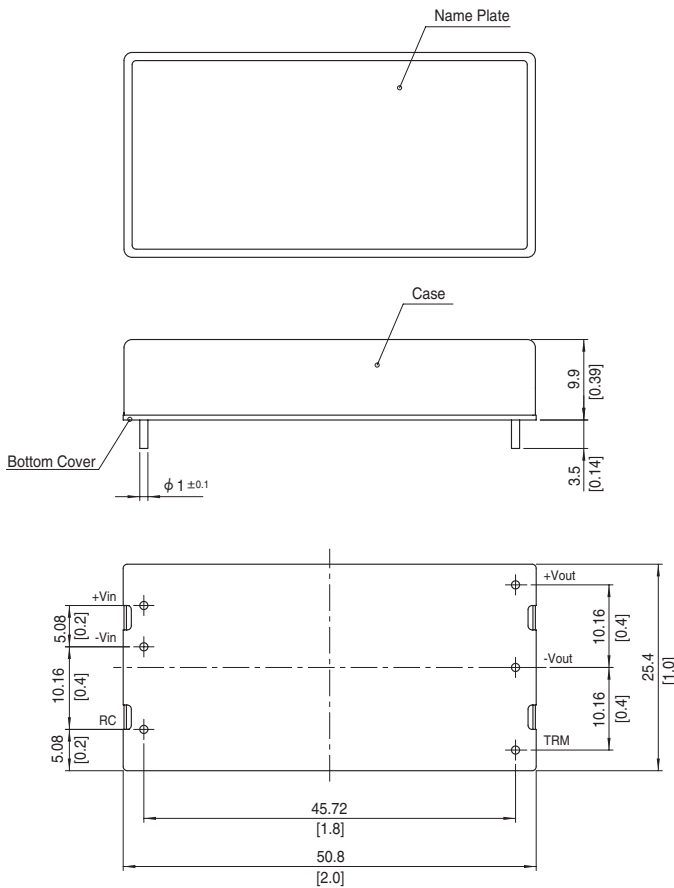
|                                 | MODEL   | MGFS30483R3  | MGFS304805      | MGFS304812      | MGFS304815 |        |
|---------------------------------|---|--|-----------------|-----------------|------------|--------|
| INPUT                           | VOLTAGE[V]  | DC18 - 76  |                 |                 |            |        |
|                                 | CURRENT[A] *2                                       | 0.58typ  | 0.70typ         | 0.70typ         | 0.70typ    |        |
|                                 | EFFICIENCY[%] *2                                    | 89typ  | 90typ           | 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     | 100max |
|                                 |   | -40 to -20°C   | 100max          | 100max          | 120max     | 120max |
|                                 | RIPPLE NOISE[mVp-p] *3                              | -20 to +60°C   | 75max           | 75max           | 100max     | 100max |
|                                 |   | -40 to -20°C   | 150max          | 150max          | 150max     | 150max |
|                                 | TEMPERATURE REGULATION[mV]                          | -20 to +60°C   | 50max           | 50max           | 150max     | 180max |
|                                 |   | -40 to +60°C   | 80max           | 80max           | 240max     | 290max |
|                                 | 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 |            |        |
| PROTECTION CIRCUIT AND OTHERS   | OVERCURRENT PROTECTION                              | Works over 105% of rating and recovers automatically |                 |                 |            |        |
|                                 | 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°C)                        |
|             | 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)                        |
| ENVIRONMENT | 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 |
|             | 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 MGF30xx05/MGF30xx12/MGF30xx15 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°C.
- \*5 Rated input voltage (DC24V, DC48V), rated output wattage, ambient temperature at 25°C.
- \* 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