

## Radial Lead Type

Series: MG Type : A

- Features
  - Endurance: +85°C 2000 h
  - High Ripple (High Frequency)
  - Include Low Profile products

Japan  
Malaysia  
China



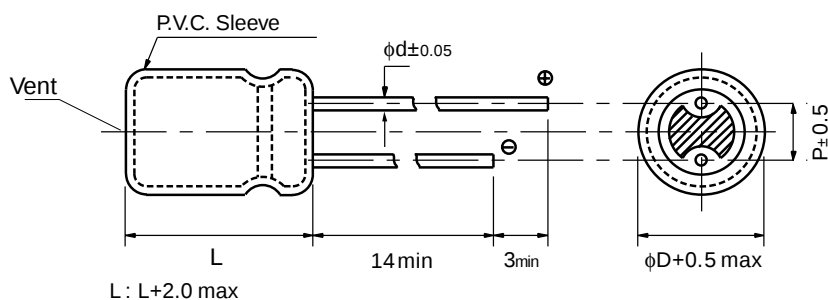
### ■ Specifications

|                                    |                                                                                                                                                                                          |     |                                    |     |     |     |     |  |
|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------------------------------|-----|-----|-----|-----|--|
| Category temp. range               | -25 to +85°C                                                                                                                                                                             |     |                                    |     |     |     |     |  |
| Rated W.V. Range                   | 160 to 450 V .DC                                                                                                                                                                         |     |                                    |     |     |     |     |  |
| Nominal Cap. Range                 | 2.2 to 470 μ F                                                                                                                                                                           |     |                                    |     |     |     |     |  |
| Capacitance Tolerance              | ±20 % (120Hz/+20°C)                                                                                                                                                                      |     |                                    |     |     |     |     |  |
| DC Leakage Current                 | I < 0.06 CV + 10(μ A) after 2 minutes application of rated working voltage at +20°C                                                                                                      |     |                                    |     |     |     |     |  |
| Dissipation Factor                 | Please see the attached standard products list.                                                                                                                                          |     |                                    |     |     |     |     |  |
| Characteristics at Low Temperature | W.V. (V)                                                                                                                                                                                 | 160 | 200                                | 250 | 350 | 400 | 450 |  |
|                                    | Z(-25°C)/Z(+20°C)                                                                                                                                                                        | 3   | 3                                  | 3   | 6   | 6   | 6   |  |
|                                    | (Impedance ratio at 120Hz)                                                                                                                                                               |     |                                    |     |     |     |     |  |
| Endurance                          | After 2000 hours application of DC voltage with specified ripple current ( < rated DC working voltage) at +85°C, The capacitor shall meet the following limits.                          |     |                                    |     |     |     |     |  |
|                                    | Capacitance change                                                                                                                                                                       |     | ± 20% of initial measured value    |     |     |     |     |  |
|                                    | D.F.                                                                                                                                                                                     |     | < 200 % of initial specified value |     |     |     |     |  |
|                                    | DC leakage current                                                                                                                                                                       |     | < initial specified value          |     |     |     |     |  |
| Shelf Life                         | After storage for 1000 hours at +85±2 °C with no voltage applied and then being stabilized at +20 °C, capacitors shall meet the limits specified in "Endurance".(With voltage treatment) |     |                                    |     |     |     |     |  |

### ■ Frequency correction factor for ripple current

| W.V.<br>(V.DC) | Frequency (Hz) |      |            |             |
|----------------|----------------|------|------------|-------------|
|                | 120            | 1k   | 10k to 30k | 30k to 100k |
| 160 to 250V    | 0.65           | 0.85 | 0.90       | 1.00        |
| 350 to 450V    | 0.55           | 0.80 | 0.90       | 1.00        |

### ■ Dimensions in mm (not to scale)



|              |     |      |     |     |
|--------------|-----|------|-----|-----|
| Body Dia. φD | 10  | 12.5 | 16  | 18  |
| Lead Dia. φd | 0.6 | 0.6  | 0.8 | 0.8 |
| Lead space P | 5   | 5    | 7.5 | 7.5 |

■ Standard Products

| W.V.<br>(V) | Cap.<br>(±20%)<br>(μF) | Case size    |                | Specification                                 |                            | Lead Length       |                                |                      | Part No.       | Min. Packaging Qty      |                 |
|-------------|------------------------|--------------|----------------|-----------------------------------------------|----------------------------|-------------------|--------------------------------|----------------------|----------------|-------------------------|-----------------|
|             |                        | Dia.<br>(mm) | Length<br>(mm) | Ripple current<br>(100kHz)<br>(+85°C)<br>(mA) | D.F.<br>(120Hz)<br>(+20°C) | Lead Dia.<br>(mm) | Lead Space<br>Straight<br>(mm) | Taping<br>*B<br>(mm) |                | Straight Leads<br>(pcs) | Taping<br>(pcs) |
| 160         | 10                     | 10           | 12.5           | 280                                           | 0.15                       | 0.6               | 5.0                            | 5.0                  | EEUMG2C100( )  | 200                     | 500             |
|             | 22                     | 10           | 16             | 350                                           | 0.15                       | 0.6               | 5.0                            | 5.0                  | EEUMG2C220( )  | 200                     | 500             |
|             | 33                     | 10           | 20             | 470                                           | 0.15                       | 0.6               | 5.0                            | 5.0                  | EEUMG2C330( )  | 200                     | 500             |
|             | 47                     | 12.5         | 20             | 600                                           | 0.15                       | 0.6               | 5.0                            | 5.0                  | EEUMG2C470( )  | 200                     | 500             |
|             | 68                     | 12.5         | 20             | 650                                           | 0.15                       | 0.6               | 5.0                            | 5.0                  | EEUMG2C680( )  | 200                     | 500             |
|             | 100                    | 16           | 20             | 750                                           | 0.15                       | 0.8               | 7.5                            | 7.5                  | EEUMG2C101S( ) | 100                     | 250             |
|             |                        | 12.5         | 25             | 750                                           | 0.15                       | 0.6               | 5.0                            | 5.0                  | EEUMG2C101( )  | 200                     | 500             |
|             | 150                    | 18           | 20             | 1060                                          | 0.15                       | 0.8               | 7.5                            | 7.5                  | EEUMG2C151S( ) | 100                     | 250             |
|             |                        | 16           | 25             | 1060                                          | 0.15                       | 0.8               | 7.5                            | 7.5                  | EEUMG2C151( )  | 100                     | 250             |
|             | 220                    | 18           | 25             | 1280                                          | 0.15                       | 0.8               | 7.5                            | 7.5                  | EEUMG2C221S( ) | 100                     | 250             |
|             |                        | 16           | 31.5           | 1280                                          | 0.15                       | 0.8               | 7.5                            |                      | EEUMG2C221     | 100                     |                 |
| 200         | 330                    | 18           | 31.5           | 1690                                          | 0.15                       | 0.8               | 7.5                            |                      | EEUMG2C331     | 50                      |                 |
|             | 470                    | 18           | 40             | 2300                                          | 0.15                       | 0.8               | 7.5                            |                      | EEUMG2C471     | 50                      |                 |
|             | 10                     | 10           | 12.5           | 280                                           | 0.15                       | 0.6               | 5.0                            | 5.0                  | EEUMG2D100( )  | 200                     | 500             |
|             | 22                     | 10           | 20             | 470                                           | 0.15                       | 0.6               | 5.0                            | 5.0                  | EEUMG2D220( )  | 200                     | 500             |
|             | 33                     | 10           | 20             | 470                                           | 0.15                       | 0.6               | 5.0                            | 5.0                  | EEUMG2D330( )  | 200                     | 500             |
|             | 47                     | 12.5         | 20             | 600                                           | 0.15                       | 0.6               | 5.0                            | 5.0                  | EEUMG2D470( )  | 200                     | 500             |
|             | 68                     | 16           | 20             | 750                                           | 0.15                       | 0.8               | 7.5                            | 7.5                  | EEUMG2D680S( ) | 100                     | 250             |
|             |                        | 12.5         | 25             | 750                                           | 0.15                       | 0.6               | 5.0                            | 5.0                  | EEUMG2D680( )  | 200                     | 500             |
|             | 100                    | 18           | 20             | 1060                                          | 0.15                       | 0.8               | 7.5                            | 7.5                  | EEUMG2D101S( ) | 100                     | 250             |
|             |                        | 16           | 25             | 1060                                          | 0.15                       | 0.8               | 7.5                            | 7.5                  | EEUMG2D101( )  | 100                     | 250             |
|             | 150                    | 18           | 25             | 1280                                          | 0.15                       | 0.8               | 7.5                            | 7.5                  | EEUMG2D151S( ) | 100                     | 250             |
|             |                        | 16           | 31.5           | 1280                                          | 0.15                       | 0.8               | 7.5                            |                      | EEUMG2D151     | 100                     |                 |
| 250         | 220                    | 18           | 31.5           | 1690                                          | 0.15                       | 0.8               | 7.5                            |                      | EEUMG2D221     | 50                      |                 |
|             | 330                    | 18           | 40             | 2300                                          | 0.15                       | 0.8               | 7.5                            |                      | EEUMG2D331     | 50                      |                 |
|             | 10                     | 10           | 16             | 310                                           | 0.15                       | 0.6               | 5.0                            | 5.0                  | EEUMG2E100( )  | 200                     | 500             |
|             | 22                     | 10           | 20             | 430                                           | 0.15                       | 0.6               | 5.0                            | 5.0                  | EEUMG2E220( )  | 200                     | 500             |
|             | 33                     | 12.5         | 20             | 560                                           | 0.15                       | 0.6               | 5.0                            | 5.0                  | EEUMG2E330( )  | 200                     | 500             |
|             | 47                     | 16           | 20             | 710                                           | 0.15                       | 0.8               | 7.5                            | 7.5                  | EEUMG2E470S( ) | 100                     | 250             |
|             |                        | 12.5         | 25             | 710                                           | 0.15                       | 0.6               | 5.0                            | 5.0                  | EEUMG2E470( )  | 200                     | 500             |
|             | 68                     | 18           | 20             | 990                                           | 0.15                       | 0.8               | 7.5                            | 7.5                  | EEUMG2E680S( ) | 100                     | 250             |
|             |                        | 16           | 25             | 990                                           | 0.15                       | 0.8               | 7.5                            | 7.5                  | EEUMG2E680( )  | 100                     | 250             |
|             | 100                    | 18           | 25             | 1200                                          | 0.15                       | 0.8               | 7.5                            | 7.5                  | EEUMG2E101S( ) | 100                     | 250             |
|             |                        | 16           | 31.5           | 1200                                          | 0.15                       | 0.8               | 7.5                            |                      | EEUMG2E101     | 100                     |                 |
|             | 150                    | 18           | 31.5           | 1470                                          | 0.15                       | 0.8               | 7.5                            |                      | EEUMG2E151     | 50                      |                 |
| 350         | 220                    | 18           | 40             | 2000                                          | 0.15                       | 0.8               | 7.5                            |                      | EEUMG2E221     | 50                      |                 |
|             | 4.7                    | 10           | 12.5           | 150                                           | 0.20                       | 0.6               | 5.0                            | 5.0                  | EEUMG2V4R7( )  | 200                     | 500             |
|             | 6.8                    | 10           | 16             | 190                                           | 0.20                       | 0.6               | 5.0                            | 5.0                  | EEUMG2V6R8( )  | 200                     | 500             |
|             | 10                     | 10           | 20             | 270                                           | 0.20                       | 0.6               | 5.0                            | 5.0                  | EEUMG2V100( )  | 200                     | 500             |
|             | 22                     | 12.5         | 20             | 350                                           | 0.20                       | 0.6               | 5.0                            | 5.0                  | EEUMG2V220( )  | 200                     | 500             |
|             | 33                     | 16           | 20             | 480                                           | 0.20                       | 0.8               | 7.5                            | 7.5                  | EEUMG2V330S( ) | 100                     | 250             |
|             | 47                     | 18           | 20             | 640                                           | 0.20                       | 0.8               | 7.5                            | 7.5                  | EEUMG2V470S( ) | 100                     | 250             |

When requesting taped product, please put the letter "B" between the "( )". Lead wire pitch B=5mm, 7.5mm.  
The taping dimensions are explained on p.25 of our Catalog. Please use it as a reference guide.  
Endurance : 85°C 2000h

Design, Specifications are subject to change without notice. Ask factory for technical specifications before purchase and/or use.  
Whenever a doubt about safety arises from this product, please inform us immediately for technical consultation without fail.

■ Standard Products

| W.V.<br><br>(V) | Cap.<br>(±20%)<br><br>(μF) | Case size |        | Specification                                 |                            | Lead Length |                  |              | Part No.       | Min. Packaging Qty |        |
|-----------------|----------------------------|-----------|--------|-----------------------------------------------|----------------------------|-------------|------------------|--------------|----------------|--------------------|--------|
|                 |                            | Dia.      | Length | Ripple current<br>(100kHz)<br>(+85°C)<br>(mA) | D.F.<br>(120Hz)<br>(+20°C) | Lead Dia.   | Lead Space       |              |                | Straight Leads     | Taping |
|                 |                            |           |        |                                               |                            |             | Straight<br>(mm) | Taping<br>*B |                |                    |        |
| 350             | 47                         | 16        | 25     | 640                                           | 0.20                       | 0.8         | 7.5              | 7.5          | EEUMG2V470( )  | 100                | 250    |
|                 | 68                         | 18        | 25     | 780                                           | 0.20                       | 0.8         | 7.5              | 7.5          | EEUMG2V680S( ) | 100                | 250    |
|                 |                            | 16        | 31.5   | 780                                           | 0.20                       | 0.8         | 7.5              |              | EEUMG2V680     | 100                |        |
|                 | 100                        | 18        | 31.5   | 970                                           | 0.20                       | 0.8         | 7.5              |              | EEUMG2V101     | 50                 |        |
| 400             | 3.3                        | 10        | 12.5   | 130                                           | 0.24                       | 0.6         | 5.0              | 5.0          | EEUMG2G3R3( )  | 200                | 500    |
|                 | 4.7                        | 10        | 16     | 170                                           | 0.24                       | 0.6         | 5.0              | 5.0          | EEUMG2G4R7( )  | 200                | 500    |
|                 | 6.8                        | 10        | 20     | 250                                           | 0.24                       | 0.6         | 5.0              | 5.0          | EEUMG2G6R8( )  | 200                | 500    |
|                 | 10                         | 10        | 20     | 250                                           | 0.24                       | 0.6         | 5.0              | 5.0          | EEUMG2G100( )  | 200                | 500    |
|                 | 22                         | 16        | 20     | 410                                           | 0.24                       | 0.8         | 7.5              | 7.5          | EEUMG2G220S( ) | 100                | 250    |
|                 |                            | 12.5      | 25     | 410                                           | 0.24                       | 0.6         | 5.0              | 5.0          | EEUMG2G220( )  | 200                | 500    |
|                 | 33                         | 18        | 20     | 600                                           | 0.24                       | 0.8         | 7.5              | 7.5          | EEUMG2G330S( ) | 100                | 250    |
|                 |                            | 16        | 25     | 600                                           | 0.24                       | 0.8         | 7.5              | 7.5          | EEUMG2G330( )  | 100                | 250    |
|                 | 47                         | 18        | 25     | 730                                           | 0.24                       | 0.8         | 7.5              | 7.5          | EEUMG2G470S( ) | 100                | 250    |
|                 |                            | 16        | 31.5   | 730                                           | 0.24                       | 0.8         | 7.5              |              | EEUMG2G470     | 100                |        |
|                 | 68                         | 18        | 31.5   | 910                                           | 0.24                       | 0.8         | 7.5              |              | EEUMG2G680     | 50                 |        |
|                 | 100                        | 18        | 40     | 1240                                          | 0.24                       | 0.8         | 7.5              |              | EEUMG2G101     | 50                 |        |
| 450             | 2.2                        | 10        | 12.5   | 120                                           | 0.24                       | 0.6         | 5.0              | 5.0          | EEUMG2W2R2( )  | 200                | 500    |
|                 | 3.3                        | 10        | 16     | 160                                           | 0.24                       | 0.6         | 5.0              | 5.0          | EEUMG2W3R3( )  | 200                | 500    |
|                 | 4.7                        | 10        | 20     | 230                                           | 0.24                       | 0.6         | 5.0              | 5.0          | EEUMG2W4R7( )  | 200                | 500    |
|                 | 6.8                        | 12.5      | 20     | 310                                           | 0.24                       | 0.6         | 5.0              | 5.0          | EEUMG2W6R8( )  | 200                | 500    |
|                 | 10                         | 12.5      | 20     | 310                                           | 0.24                       | 0.6         | 5.0              | 5.0          | EEUMG2W100( )  | 200                | 500    |
|                 | 22                         | 18        | 20     | 560                                           | 0.24                       | 0.8         | 7.5              | 7.5          | EEUMG2W220S( ) | 100                | 250    |
|                 |                            | 16        | 25     | 560                                           | 0.24                       | 0.8         | 7.5              | 7.5          | EEUMG2W220( )  | 100                | 250    |
|                 | 33                         | 18        | 25     | 680                                           | 0.24                       | 0.8         | 7.5              | 7.5          | EEUMG2W330S( ) | 100                | 250    |
|                 |                            | 16        | 31.5   | 680                                           | 0.24                       | 0.8         | 7.5              |              | EEUMG2W330     | 100                |        |
|                 | 47                         | 18        | 31.5   | 850                                           | 0.24                       | 0.8         | 7.5              |              | EEUMG2W470     | 50                 |        |
| 68              | 18                         | 40        | 1150   | 0.24                                          | 0.8                        | 7.5         |                  | EEUMG2W680   | 50             |                    |        |

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