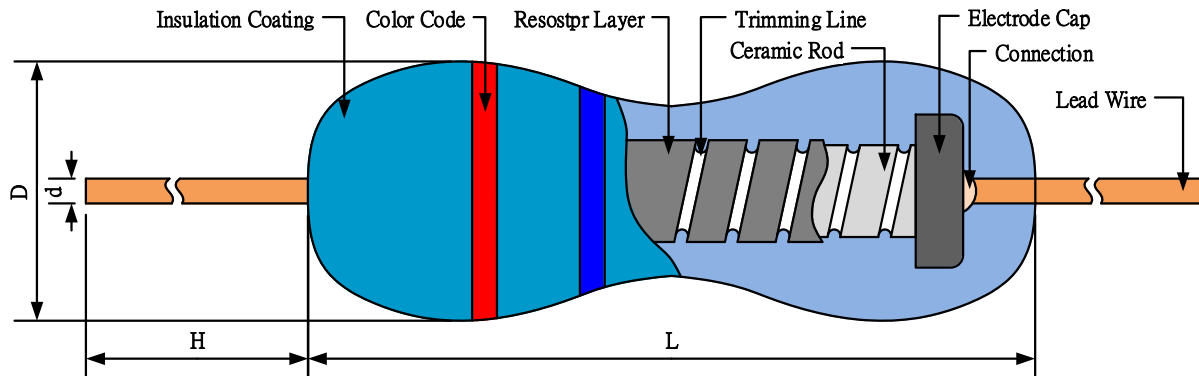


- COAT-INSULATED MEGOHM FIXED RESISTORS (METAL GLAZED)
 - ⊙ Higher working voltage
 - ⊙ High pulse loading capability
 - ⊙ Resistance to high Temp/humidity
 - ⊙ Highly stable performance and highly reliable
 - ⊙ Operating Temperature Range -55°C ~ +155°C (Epoxy Resin)
 - ⊙ Operating Temperature Range -55°C ~ +225°C (Silicone Resin)

● DIMENSIONS



| STYLE | | DIMENSION(mm) | | | | Resistance Range |
|-------|-------|---------------|---------|--------|-----------|------------------|
| | | L | D | H | d | |
| 1/4W | 1/2WS | 6.3±0.5 | 2.3±0.3 | 28±3.0 | 0.55±0.03 | 1K~10G |
| 1/2W | 1WS | 9.0±0.5 | 3.2±0.5 | 26±3.0 | 0.65±0.03 | |
| 1/2WH | 1WL | 9.0±0.5 | 4.0±0.5 | 26±3.0 | 0.65±0.03 | |
| 1WH | 2WL | 11.5±1.0 | 4.0±0.5 | 24±3.0 | 0.78±0.03 | |
| 1W | 2WS | 11.5±1.0 | 4.5±0.5 | 35±3.0 | 0.78±0.03 | |
| 2W | 3WS | 15.5±1.0 | 5.0±0.5 | 32±3.0 | 0.78±0.03 | |
| 2WH | 3WL | 15.5±1.0 | 5.5±0.5 | 32±3.0 | 0.78±0.03 | |
| 3W | 5WS | 17.5±1.0 | 6.0±0.5 | 35±3.0 | 0.78±0.03 | |

● RATING

| POWER RATING | MAX. Working VOL | MAX. Overload VOL | Dielectric Withstanding VOL. | | Resistance Tolerance | T.C.R | Measured |
|--------------|------------------|-------------------|------------------------------|-------------|-------------------------------|---|--|
| | | | Silicone Resin | Epoxy Resin | | | |
| 1/4W | DC1600V | DC2000V | 400V | 500V | R > 1G K (±10%) E12 | Standard: 1K ≤ R ≤ 10M ±200PPM/°C | DC 100 volts 1K ≤ R < 1M DC 1000 volts 1M ≤ R |
| | AC1150V | AC1500V | | | | | |
| 1/2WS | DC1700V | 2500V | 400V | 500V | R ≤ 1G K (±10%) E12 | ±500PPM/°C | |
| 1/2W · 1/2WH | DC3500V | 4000V | 500V | 700V | J (±5%) E24 | | |
| 1WS · 1WL | DC4000V | 4500V | 500V | 700V | F (±1%) E24 | Special : ±100PPM/°C ±50PPM/°C | |
| 1W · 1WH | DC4500V | 5000V | 500V | 1000V | 1M ≤ R ≤ 100 M (±0.5%) E24 | | |
| 2Ws · 2WL | DC5000V | 10000V | 500V | 1000V | | | |
| 2W · 2WH | DC7000V | 14000V | 700V | 1200V | | | |
| 3WS · 3WL | DC10000V | 14000V | 700V | 1200V | | | |
| 3W | DC12000V | 16000V | 1000V | 1200V | | | |
| 5WS | DC13000V | 18000V | 1000V | 1200V | | | |

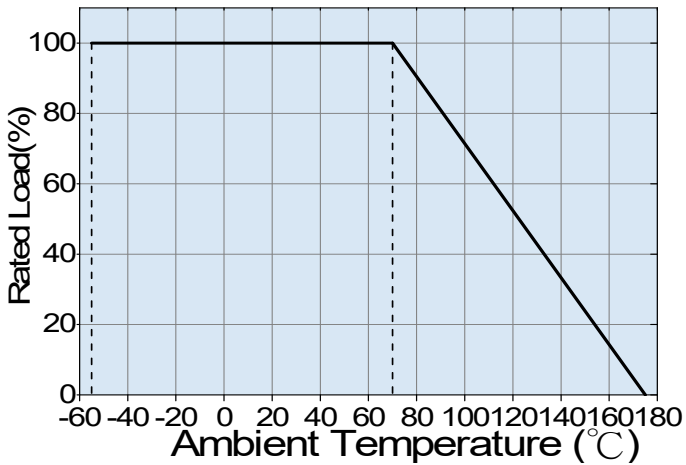
◇ Value Range for standard resistance , below or over this resistance on request. The maximum number can be produced to 10G

◇ Rated continuous Working Voltage (RCWV) = $\sqrt{POWER.RATING.*RESISTANCE.VALUE}$

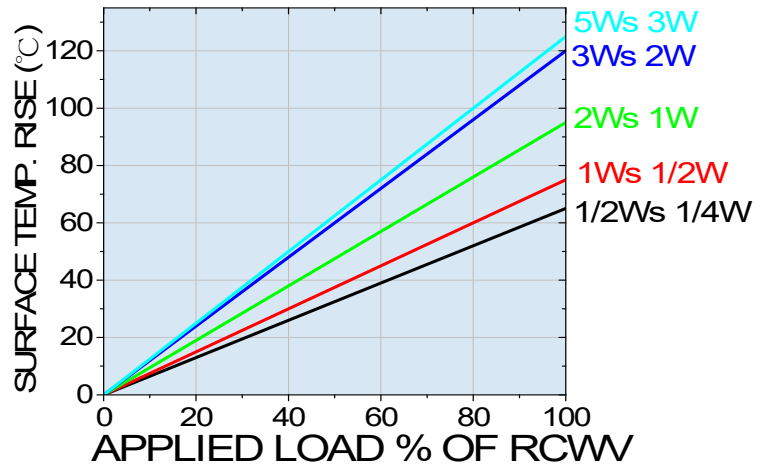
● PERFORMANCE SPECIFICATIONS

| TEST ITEMS | Test Methods | SPECIFICATIONS | | | | | | | | | | | | | | | |
|---------------------------------|--|--|---|------|------|---------|--------------------|-------|---------------|--------|--|--|-------|--------|--|--|-----|
| Temperature Coefficient(T.C.R.) | Resistance value at room (+25°C) Temperature and room Temperature(+125°C) | By Type | | | | | | | | | | | | | | | |
| Short time overload | Rated Voltage X 2.5 or Max. Overload Vol., whichever is lower, for 5sec. | ± (1.0% + 0.05Ω) | | | | | | | | | | | | | | | |
| Moisture resistance | 40°C±2°C, 90%~95%RH,1000h (For Epoxy Resin) 90 min 【ON】 30 min 【OFF】 | ± (5.0% + 0.05Ω) | | | | | | | | | | | | | | | |
| Load life | 1000hours at rated voltage, 70°C 90 min 【ON】 30 min 【OFF】 | ± (3.0% + 0.05Ω) | | | | | | | | | | | | | | | |
| Insulation resistance | 500±50V DC During 1 min V-Block method | ±10,000MΩ Over | | | | | | | | | | | | | | | |
| Dielectric withstanding voltage | In V-Block for 60 seconds | By Type | | | | | | | | | | | | | | | |
| Resistance to soldering heat | 260°C±5°C, 2s±1s | ± (1.0% + 0.05Ω) | | | | | | | | | | | | | | | |
| Resistance to Solvent | IPA for 5±0.5 Min. with ultrasonic | No abnormality in coatings and markings. | | | | | | | | | | | | | | | |
| Terminal strength | Direct load for 10 sec. In the direction off the terminal leads. | Tensile: ≥ 2.5kg | | | | | | | | | | | | | | | |
| Anti Surge characteristics | Discharge Test : 0.01uf capacitor Discharge Pulse 10 time. (1 pulse / 5sec. max) | ± (10% + 0.05 Ω) | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | Type | | <table border="1"> <tr> <td>1/4W</td> <td>1/2W</td> <td>1WH 2WL</td> <td>3W 5WS</td> </tr> <tr> <td>1/2Ws</td> <td>1WS</td> <td>1W 2WS</td> <td></td> </tr> <tr> <td></td> <td>1/2WH</td> <td>2W 3WS</td> <td></td> </tr> <tr> <td></td> <td>1WL</td> <td>2WH 3WL</td> <td></td> </tr> </table> | 1/4W | 1/2W | 1WH 2WL | 3W 5WS | 1/2Ws | 1WS | 1W 2WS | | | 1/2WH | 2W 3WS | | | 1WL |
| 1/4W | 1/2W | 1WH 2WL | 3W 5WS | | | | | | | | | | | | | | |
| 1/2Ws | 1WS | 1W 2WS | | | | | | | | | | | | | | | |
| | 1/2WH | 2W 3WS | | | | | | | | | | | | | | | |
| | 1WL | 2WH 3WL | | | | | | | | | | | | | | | |
| Voltage | <table border="1"> <tr> <td>3KV</td> <td>1K ≤ R < 10K:5KV</td> <td rowspan="3">10KV</td> <td rowspan="3">15KV</td> </tr> <tr> <td></td> <td>10K ≤ R < 100K:7KV</td> </tr> <tr> <td></td> <td>100K ≤ R:10KV</td> </tr> </table> | 3KV | 1K ≤ R < 10K:5KV | 10KV | 15KV | | 10K ≤ R < 100K:7KV | | 100K ≤ R:10KV | | | | | | | | |
| 3KV | 1K ≤ R < 10K:5KV | 10KV | 15KV | | | | | | | | | | | | | | |
| | 10K ≤ R < 100K:7KV | | | | | | | | | | | | | | | | |
| | 100K ≤ R:10KV | | | | | | | | | | | | | | | | |
| Intermittent overload | 4 times RCWV for10000cycles(1sec.on , 25secs.off) | ±(1%+0.05Ω) | | | | | | | | | | | | | | | |

●POWER GRAPH



●HOT-SPOT TEMPERATURE



● Resistor body color

◎ Epoxy Resin-----Light Blue

| MGR | 1/4W | 1M | F | | TB |
|--------------|-------------------------------------|--|---|---|---|
| Type | Power Rating | Resistance | Tolerance | T.C.R | Packaging |
| Metal Glazed | 1/4W 1/2WS 3W 5WS | 100K 100KΩ 1M 1MΩ 1G 1GΩ 10G 10GΩ | D ± 0.5% F ± 1% G ± 2% J ± 5% K ± 10% | B 200ppm C 100ppm E 50ppm Standard | TB Taping Box TR Taping Reel BU Bulk F F-TYPE M M-TYPE PANA PANA |