

# MINIATURE POWER FILM RESISTORS



RESISTORS • CAPACITORS • COILS • DELAY LINES

## MG SERIES - 1/2W & 1W FS SERIES - 1W, 2W, 3W



Term.W is RoHS compliant & 260°C compatible



### FEATURES

- Miniature sizes enable significant space savings
- Replaces wirewound types at reduced cost
- 0.1Ω to 1 Meg, standard tolerances: ±1%, ±2%, ±5% (Series MG available to 0.1%)
- All sizes available on horizontal or vertical tape

### OPTIONS

- Options include increased voltages, custom marking, cut & formed leads, high pulse (Opt. P), molded version (Opt. 49), TC's to 25ppm, Sn-Pb terminations, Military screening, etc.



### Industry's smallest power film resistors!

Increased power is achieved by a special film process and high grade alumina cores. The unique structure of these materials also achieves increased working voltages and superior pulse capability compared to typical film resistors. The low inductance inherent in film construction enables use at high frequencies thereby fulfilling a wider range of applications compared to wirewound resistors. Series MG are designed for precision and semi-precision applications, with tolerances available to 0.1% and TC's available to 25ppm. Series FS are designed for semi-precision and general purpose 1% to 5% applications (1% to 5% tolerance with typical TC stability of 100ppm). Series FS resistors also feature a flameproof coating as standard (optional on MG series). Marking is stamped or color banded.

### SPECIFICATIONS

| RCD Type | Wattage     | Resistance Range | Max Voltage Rating* | Dielectric Strength | L ± .025 [.8] | D ± .025 [.6] | d ± .003 [.08] | H (Min.)**  |
|----------|-------------|------------------|---------------------|---------------------|---------------|---------------|----------------|-------------|
| MG1/2    | 1/2W @ 25°C | 1Ω to 1M         | 200V                | 250V                | .150 [3.81]   | .066 [1.68]   | .018 [.45]     | .945 [24]   |
| MG1      | 1W @ 25°C   | 0.1Ω to 1M       | 250V                | 500V                | .250 [6.35]   | .090 [2.3]    | .024 [.6]      | .945 [24]   |
| F1S      | 1W @ 70°C   | 0.1Ω to 1M       | 350V                | 350V                | .250 [6.35]   | .090 [2.3]    | .024 [.6]      | .945 [24]   |
| F2S      | 2W @ 70°C   | 0.1Ω to 1M       | 400V                | 500V                | .420 [10.67]  | .159 [4.0]    | .031 [.8]      | 1.25 [31.7] |
| F3S      | 3W @ 70°C   | 0.1Ω to 1M       | 500V                | 500V                | .580 [14.7]   | .200 [5.08]   | .031 [.8]      | 1.25 [31.7] |

\* Working voltage determined by  $E = (PR)^{1/2}$ , E not to exceed Max Voltage Rating. Consult factory for short time overload or surge voltage capability.

\*\* Lead length dimension is for bulk packaged parts, consult Taping specifications for parts supplied on Tape&Reel

### TYPICAL PERFORMANCE

| Specifications (1Ω-100K) | MG Series                        | FS Series       |
|--------------------------|----------------------------------|-----------------|
| Temperature Coefficient  | ±100ppm/°C typ., 25&50ppm avail. | ±100ppm/°C typ. |
| Insulation Resis. (min.) | 10,000 MΩ                        | 10,000 MΩ       |
| Load Life (1000 hours)   | ±1%                              | ±5%             |
| Short-time Overload      | ±0.5%                            | ±0.5%           |
| Temperature Cycling      | ±0.5%                            | ±1%             |
| Moisture Resistance      | ±1%                              | ±2%             |
| Shock and Vibration      | ±0.2%                            | ±0.2%           |
| Effect of Soldering      | ±0.5%                            | ±0.5%           |
| Voltage Coefficient      | < .001%/V                        | < .001%/V       |
| Operating Temp. Range    | -55°C to +175C                   | -55°C to +200°C |

### DERATING



### P/N DESIGNATION:

**RCD Type** \_\_\_\_\_ **F1S** □ - **102** - **J** **T** □ **W**

**Option Codes:** Q, P, etc. (leave blank if std)

**Resis.Code 0.1% - 1%:** 3 signif. digits & multiplier (R100=0.1Ω, 1R00=1Ω, 10R0=10Ω, 1000=100Ω, 1001=1K, 1002=10K, 1003=100K, 1004=1M)

**Resis.Code 2%-5%:** 2 signif. figures & multiplier (R10=0.1Ω, 1R0=1Ω, 100=10Ω, 101=100Ω, 102=1K, 105=1M)

**Tolerance Code:** J=5%, G=2%, F=1%. In addition, tolerances of 0.5%(D), 0.25%(C), and 0.1%(B) are available on MG Series

**Packaging:** B = Bulk, T = Tape & Reel

**Optional Temp. Coefficient:** 25=25ppm, 50=50ppm, 101=100ppm, 201=200ppm (leave blank for standard)

**Termination:** W= Lead-free, Q= Tin/Lead (leave blank if either is acceptable)