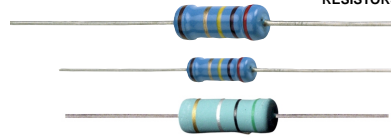


# METAL FILM RESISTORS

## GP SERIES - Standard GPS SERIES - Small Size FP/FPS SERIES - Flameproof



Term.W is  
RoHS  
compliant  
& 260°C  
compatible



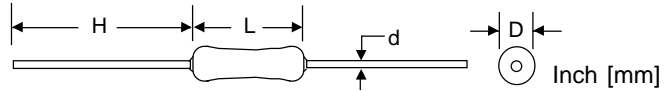
- Industry's widest range! 10 models, 1/8W to 2W, 1Ω to 22.1MΩ, 0.1% to 5%, 25ppm to 100ppm
- Miniature GPS Series enables significant space savings
- Flameproof FP & FPS version meet UL94V-0
- Wide selection available from stock

### OPTIONS

- Option P: Pulse tolerant design
- Option ER: 100-hour burn-in (full rated  $W_{25}^*$ )
- Option 48: Short-time overload screening
- Numerous design modifications are available - matched sets, TCR tracking, cut & formed leads, increased voltage and temperature ratings, non-magnetic construction, etc.

### Precision performance, industry's lowest price!

RCD's GP metal film resistors and FP flameproof version are designed to provide high performance and reliability at low costs. Improved performance over industry standard is achieved via the use of high grade materials combined with stringent process controls. Unlike other manufacturers that lock users into a limited range of "standard products", RCD offers the industry's widest choice of design options, including non-standard resistance values.



### SERIES GP & FP SPECIFICATIONS

| RCD Type   | Watt Rating (70°C) | Max Working Voltage <sup>1</sup> | TC ppm/°C       | Standard Resis. Range (custom avail.) |                                |                              | L ± .020 [5]* | D ± .016 [4]* | d ± .003 [08] | H (Min)** | Std. Reel Quantity |
|------------|--------------------|----------------------------------|-----------------|---------------------------------------|--------------------------------|------------------------------|---------------|---------------|---------------|-----------|--------------------|
|            |                    |                                  |                 | .1% & .25%                            | 0.5%                           | 1% -5%                       |               |               |               |           |                    |
| GP50, FP50 | .125W              | 200V                             | 25<br>50<br>100 | 100Ω-1M<br>30Ω-1M<br>20Ω-1M           | 50Ω-1M<br>10Ω-1M<br>10Ω-1M     | 40Ω-1M<br>10Ω-1M<br>5Ω-10M   | .134 [3.4]    | .067 [1.7]    | .018 [45]     | .98 [25]  | 5000               |
| GP55, FP55 | .25W               | 250V                             | 25<br>50<br>100 | 51.1Ω-1M<br>10Ω-1M<br>1Ω-5.1M         | 30Ω-1M<br>10Ω-1M<br>10Ω-1M     | 30Ω-1M<br>10Ω-1M<br>1Ω-22.1M | .248 [6.3]    | .090 [2.3]    | .024 [60]     | .98 [25]  | 5000               |
| GP60, FP60 | .50W               | 350V                             | 25<br>50<br>100 | 100Ω-1M<br>10Ω-1M<br>10Ω-1M           | 50Ω-1M<br>10Ω-2.2M<br>10Ω-2.2M | 40Ω-1M<br>10Ω-5M<br>10Ω-10M  | .353 [9.0]    | .138 [3.5]    | .026 [65]     | .98 [25]  | 2500               |
| GP65, FP65 | 1.0W               | 400V                             | 25<br>50<br>100 | 100Ω-1M<br>10Ω-1M<br>10Ω-1M           | 50Ω-1M<br>10Ω-3M<br>10Ω-3M     | 50Ω-1M<br>10Ω-3M<br>10Ω-3M   | .455 [11.5]*  | .177 [4.5]*   | .030 [75]     | 1.26 [32] | 2000               |
| GP70, FP70 | 2.0W               | 500V                             | 25<br>50<br>100 | 100Ω-1M<br>10Ω-1M<br>10Ω-1M           | 50Ω-1M<br>10Ω-5M<br>10Ω-5M     | 50Ω-1M<br>10Ω-5M<br>10Ω-5M   | .590 [15]*    | .195 [5.0]*   | .031 [8]      | 1.26 [32] | 1000               |

### SERIES GPS & FPS SPECIFICATIONS

| RCD Type     | Watt Rating (70°C) | Max Working Voltage <sup>1</sup> | TC ppm/°C       | Standard Resis. Range (custom avail.) |                                |                              | L ± .020 [5]* | D ± .016 [4]* | d ± .003 [08] | H (Min)** | Std. Reel Quantity |
|--------------|--------------------|----------------------------------|-----------------|---------------------------------------|--------------------------------|------------------------------|---------------|---------------|---------------|-----------|--------------------|
|              |                    |                                  |                 | .1% & .25%                            | 0.5%                           | 1% -5%                       |               |               |               |           |                    |
| GP50S, FP50S | .25W               | 200V                             | 25<br>50<br>100 | 100Ω-1M<br>30Ω-1M<br>20Ω-1M           | 50Ω-1M<br>10Ω-1M<br>10Ω-1M     | 40Ω-1M<br>10Ω-1M<br>5Ω-10M   | .134 [3.4]    | .067 [1.7]    | .018 [45]     | .98 [25]  | 5000               |
| GP52S, FP52S | .4W                | 200V                             | 25<br>50<br>100 | 100Ω-1M<br>30Ω-1M<br>20Ω-1M           | 50Ω-1M<br>10Ω-1M<br>10Ω-1M     | 40Ω-1M<br>10Ω-1M<br>10Ω-2.4M | .134 [3.4]    | .067 [1.7]    | .020 [5]      | .98 [25]  | 5000               |
| GP55S, FP55S | .5W                | 250V                             | 25<br>50<br>100 | 51.1Ω-1M<br>10Ω-1M<br>1Ω-5.1M         | 30Ω-1M<br>10Ω-1M<br>10Ω-1M     | 30Ω-1M<br>10Ω-1M<br>1Ω-22.1M | .248 [6.3]    | .090 [2.3]    | .024 [60]     | .98 [25]  | 5000               |
| GP56S, FP56S | .6W                | 250V                             | 25<br>50<br>100 | 51.1Ω-1M<br>10Ω-1M<br>1Ω-5.1M         | 30Ω-1M<br>10Ω-1M<br>10Ω-1M     | 30Ω-1M<br>10Ω-1M<br>1Ω-22.1M | .248 [6.3]    | .090 [2.3]    | .024 [60]     | .98 [25]  | 5000               |
| GP60S, FP60S | 1W                 | 350V                             | 25<br>50<br>100 | 100Ω-1M<br>10Ω-1M<br>10Ω-1M           | 50Ω-1M<br>10Ω-2.2M<br>10Ω-2.2M | 40Ω-1M<br>10Ω-5M<br>10Ω-10M  | .353 [9.0]    | .138 [3.5]*   | .028 [7]      | .98 [25]  | 2500               |

<sup>1</sup> Working voltage =  $(PR)^{1/2}$ , voltage level not to exceed the maximum value listed. Increased ratings available

\* Tolerance is ±.032 [8] on GP65, FP65, GP70, FP70 length, ±.024 [6] on GP65, FP65, GP70, FP70, GP60S, FP60S body diameter

\*\*Lead length dimensions are for bulk packaged parts, taped parts may be shorter (refer to taping spec)

### TYPICAL PERFORMANCE CHARACTERISTICS

| Environmental Test    | GP/FP (Standard)                      | GPS /FPS (Mini) |
|-----------------------|---------------------------------------|-----------------|
| Short Time Overload   | 0.25%                                 | 0.5%            |
| Resis. to Solder Heat | 0.05%                                 | 0.05%           |
| Moisture Resistance*  | 0.3% (FP=0.6%)                        | 0.3% (FPS=0.6%) |
| 1000 Hour Load Life   | 0.5%                                  | 1%              |
| Temperature Cycling   | 0.2%                                  | 0.2%            |
| Low Temp Operation    | 0.1%                                  | 0.1%            |
| Noise                 | 0.1uV/V                               |                 |
| Voltage Coefficient   | 5ppm/V                                |                 |
| Derating              | Derate W and V by 1.11%/°C above 70°C |                 |
| Operating Temperature | -55°C to +160°C                       |                 |
| Flame Retardancy      | GP&GPS = UL94V-1, FP&FPS = UL94V-0    |                 |
| Dielectric Strength   | 500V (GP & FP50/50S/52S=300V)         |                 |

\* To ensure utmost reliability, care should be taken to avoid potential sources of ionic contamination.

### P/N DESIGNATION:

**GP55S** - **1002** - **F** **T** **W**

Type: GP or FP (flameproof)

Option Codes: P, ER, 48 (leave blank if standard)

Resis.Code 2%-5%: 2 signif. figures & multiplier (1R0=1Ω, 100=10Ω, 101=100Ω, 102=1K, 103=10K, 104=100K, 105=1M, 106=10M)

Resis.Code 0.1%-1%: 3 sig. figures & multiplier, (1R00=1Ω, 10R0=10Ω, 1000=100Ω, 1001=1K, 1002=10K, 1003=100K, 1004=1M, 1005=10M)

Tolerance Code: J=5%, G=2%, F=1%, D=0.5%, C=0.25%, B=0.1% (1% is standard)

Packaging: B = Bulk, T = Tape & Reel

TC Options: 50=50ppm, 25=25ppm, leave blank for standard TC (100ppm 10Ω to 1M, 200ppm <10Ω or >1M)

Termination: W= Lead-free, Q= Tin/Lead (leave blank if either is acceptable, in which case RCD will select based on lowest price and quickest delivery)