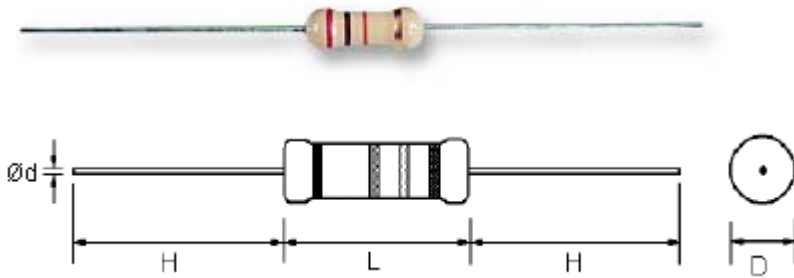


# Carbon Film Resistors

## MCF 1W Series

### Features:

- Automatically insertable
- High quality performance
- Non-flame type available
- Cost effective and commonly used
- Too low or too high values can be supplied on a case to case basis



### Performance Specifications:

Temperature Coefficient	: $\pm 350$ PPM / °C for $\leq 10 \Omega$ $\pm 450$ PPM / °C for $11 \Omega - 99 \text{ K}\Omega$ $0$ to $-700$ PPM / °C for $100 \text{ K}\Omega$ to $1 \text{ M}\Omega$ $0$ to $-1,500$ PPM / °C for $1.1 \text{ M}\Omega$ to $10 \text{ M}\Omega$
Short-Time Overload	: $\Delta R / R \leq \pm(1\% + 0.05 \Omega)$ , with no evidence of mechanical damage
Minimum Insulation Resistance	: $10,000 \text{ M}\Omega$
Dielectric Withstanding Voltage	: No evidence of flashover, mechanical damage, arcing or insulation breakdown
Terminal Strength	: No evidence of mechanical damage
Resistance to Soldering Heat	: $\Delta R / R \leq \pm(1\% + 0.05 \Omega)$ , with no evidence of mechanical damage
Minimum Solderability	: 95% coverage
Resistance to Solvent	: No deterioration of protective coating and markings
Temperature Cycling	: $\Delta R / R \leq \pm(1\% + 0.05 \Omega)$ , with no evidence of mechanical damage
Load Life in Humidity	: Normal type : $\Delta R / R \pm 3\%$ for $< 100 \text{ K}\Omega$ , $\pm 5\%$ for $\geq 100 \text{ K}\Omega$ Non-flame type : $\Delta R / R \pm 5\%$ for $< 100 \text{ K}\Omega$ , $\pm 10\%$ for $\geq 100 \text{ K}\Omega$
Load Life	: Normal type : $\Delta R / R \pm 2\%$ for $< 56 \text{ K}\Omega$ , $\pm 3\%$ for $\geq 56 \text{ K}\Omega$ Non-flame type : $\Delta R / R \pm 5\%$ for $< 100 \text{ K}\Omega$ , $\pm 10\%$ for $\geq 100 \text{ K}\Omega$
Operating Temperature	: $-55^\circ\text{C}$ to $+155^\circ\text{C}$

### Specification Table

Series	Power Rating at 70°C (W)	Dimension				Maximum Working Voltage (V)	Maximum Overload Voltage (V)	Dielectric Withstanding Voltage (V)	Resistance Range
		Maximum Diameter (D)	Maximum Length (L)	Height (H $\pm 3$ )	Lead Diameter (d $\pm 0.05$ )				
MCF 1W	1	5	12	28	0.7	500	1,000	1,000	1 $\Omega$ to 10 $\text{M}\Omega$

Note : Standard E-24 series values in  $\pm 5\%$  tolerance

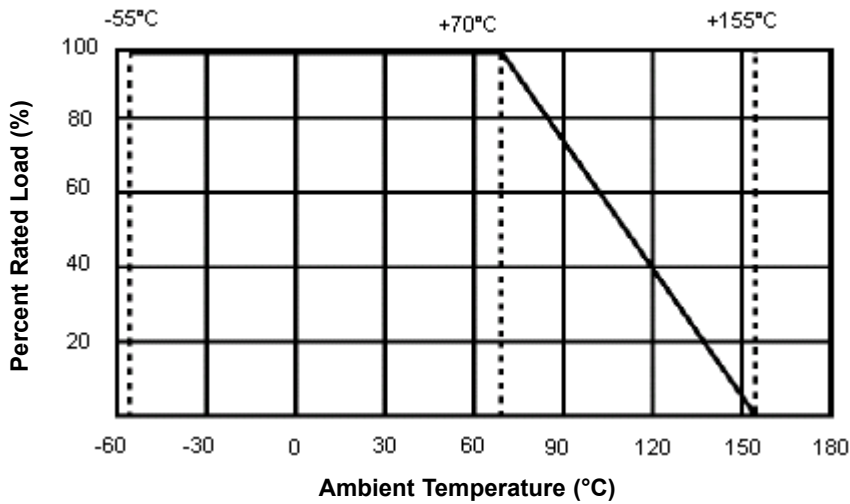
Dimensions : Millimetres

# Carbon Film Resistors

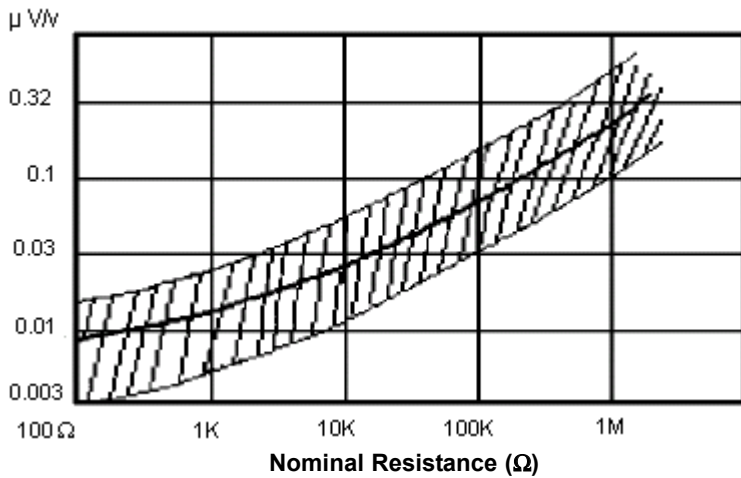
## MCF 1W Series



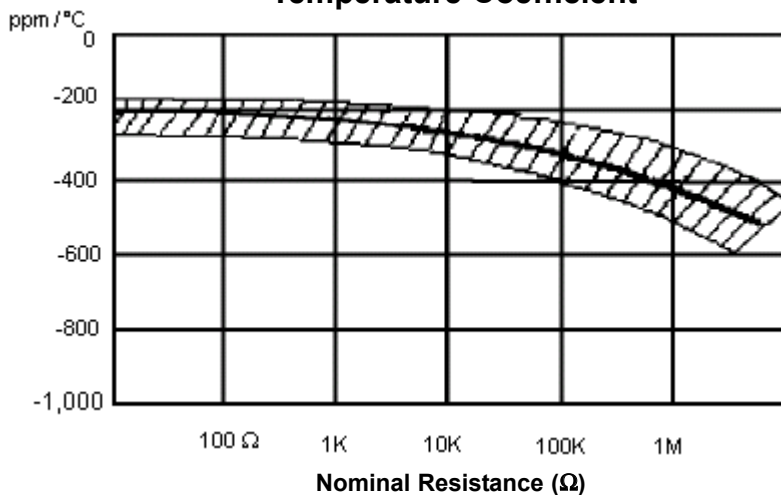
### Derating Curve



### Current Noise



### Temperature Coefficient



# Carbon Film Resistors



## MCF 1W Series

### Resistance Preferred Value Range

E6	E12	E24	E96	E6	E12	E24	E96	E6	E12	E24	E96
10	10	10	10				21.5				46.4
			10.2	22	22	22	22.1	47	47	47	47.5
			10.5				22.6				48.7
			10.7				23.2				49.9
		11	11				23.7			51	51.1
			11.3			24	24.3				52.3
			11.5				24.9				53.6
			11.8				25.5				54.9
	12	12	12.1				26.1	56	56	56	56.2
			12.4				27.7				57.6
			12.7	27	27	27	27.4				59
		13	13				28				60.4
			13.3				28.7			62	61.9
			13.7				29.4				63.4
			14			30	30.1				64.9
			14.3				30.9				66.5
			14.7				31.6	68	68	68	68.1
15	15	15	15				32.4				69.8
			15.4	33	33	33	33.2				71.5
			15.8				34				73.2
		16	16.2				34.8			75	75
			16.5				35.7				76.8
			16.9			36	36.5				78.7
			17.4				37.4				80.6
			17.8				38.3	82	82	82	82.5
	18	18	18.2	39	39	39	39.2				84.5
			18.7				40.2				86.6
			19.1				41.2				88.7
			19.6				42.2			91	90.9
		20	20			43	43.2				93.1
			20.5				44.2				95.3
			21				45.3				97.6

Above values in accordance with IEC Publication 63 (1963) and BS2488

### Part Number Explanation:

**MCF**

**1W**

**10R**

Power Rating

Ohmic Value

**Ohmic Value**

: Where R = Ohms =  $\Omega$

K = Kiloohms =  $K\Omega$

M = Megohms =  $M\Omega$

And replaces the decimal point

eg : 1R5 = 1.5, 4K7 = 4.7 K, 6M8 = 6.8 M

### Stocked Values

Tolerance	Wattage (W)	Preferred Value Range	Range Value
5%	1	E24	1R - 10M

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