

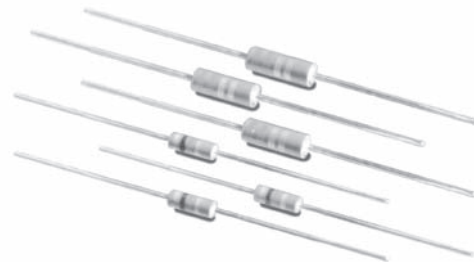


# Carbon Composition Resistors

## CC Series

### FEATURES

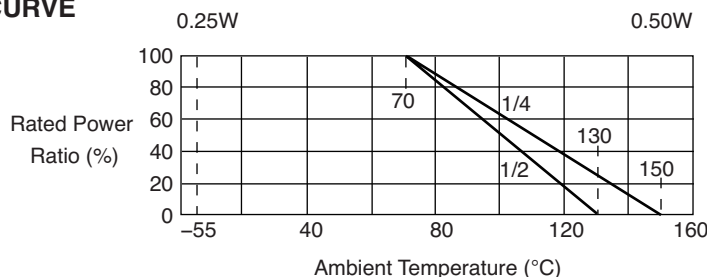
- Low inductance
- Low capacitance
- Compared with film-type resistors, carbon composition resistors have better pulse endurance characteristics



### CHARACTERISTICS

| Item                        | Characteristics |
|-----------------------------|-----------------|
| Operating Temperature Range | -55°C ~ +125°C  |
| Short Time Overload         | ±(2.5% +0.05Ω)  |
| Effect of Soldering         | ±(3% +0.05Ω)    |
| Temperature Cycling         | ±4%             |
| Insulation Resistance       | 10,000MΩ min.   |

### DERATING CURVE

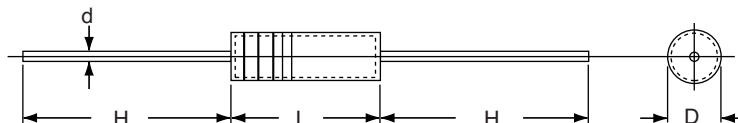


### PART NUMBERING SYSTEM



\* For Reel Part Number Add: /Reel to Part Number Above

### SERIES, WATTAGE, RANGE OF VALUES, TOLERANCE, VOLTAGE, AND DIMENSIONS



| Series  | Watts | Standard Range of Values (Ω) | Resistance Tolerance | Voltage (V) (max.) |          |       | Dimensions (mm) |     |        |      |
|---------|-------|------------------------------|----------------------|--------------------|----------|-------|-----------------|-----|--------|------|
|         |       |                              |                      | Working            | Overload | Pulse | L               | D   | H      | d    |
| 30BJ250 | 1/4   | 2.2~22M                      | ±5%                  | 250                | 400      | 500   | 6.4             | 2.3 | 27.0±3 | 0.6  |
| 30BJ500 | 1/2   | 2.2~22M                      | ±5%                  | 350                | 700      | 700   | 9.5             | 3.5 | 27.0±3 | 0.74 |

### STANDARD STOCKED VALUES (Ω)

|     |     |     |    |    |     |     |     |     |      |      |      |      |     |     |     |      |      |      |      |      |      |
|-----|-----|-----|----|----|-----|-----|-----|-----|------|------|------|------|-----|-----|-----|------|------|------|------|------|------|
| 2.2 | 4.3 | 8.2 | 16 | 33 | 62  | 120 | 240 | 470 | 910  | 1.8K | 3.6K | 6.8K | 13K | 27K | 51K | 100K | 200K | 390K | 750K | 2.2M | 6.8M |
| 2.4 | 4.7 | 9.1 | 18 | 36 | 68  | 130 | 270 | 510 | 1.0K | 2.0K | 3.9K | 7.5K | 15K | 30K | 56K | 110K | 220K | 430K | 820K | 2.4M | 8.2M |
| 2.7 | 5.1 | 10  | 20 | 39 | 75  | 150 | 300 | 560 | 1.1K | 2.2K | 4.3K | 8.2K | 16K | 33K | 62K | 120K | 240K | 470K | 910K | 2.7M |      |
| 3.0 | 5.6 | 11  | 22 | 43 | 82  | 160 | 330 | 620 | 1.2K | 2.4K | 4.7K | 9.1K | 18K | 36K | 68K | 130K | 270K | 510K | 1.0M | 3.3M |      |
| 3.3 | 6.2 | 12  | 24 | 47 | 91  | 180 | 360 | 680 | 1.3K | 2.7K | 5.1K | 10K  | 20K | 39K | 75K | 150K | 300K | 560K | 1.2M | 3.9M |      |
| 3.6 | 6.8 | 13  | 27 | 51 | 100 | 200 | 390 | 750 | 1.5K | 3.0K | 5.6K | 11K  | 22K | 43K | 82K | 160K | 330K | 620K | 1.5M | 4.7M |      |
| 3.9 | 7.5 | 15  | 30 | 56 | 110 | 220 | 430 | 820 | 1.6K | 3.3K | 6.2K | 12K  | 24K | 47K | 91K | 180K | 360K | 680K | 1.8M | 5.6M |      |

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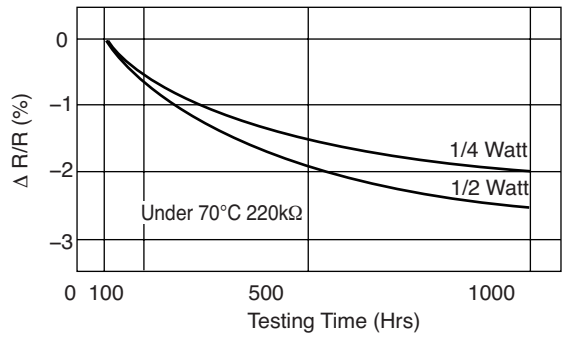
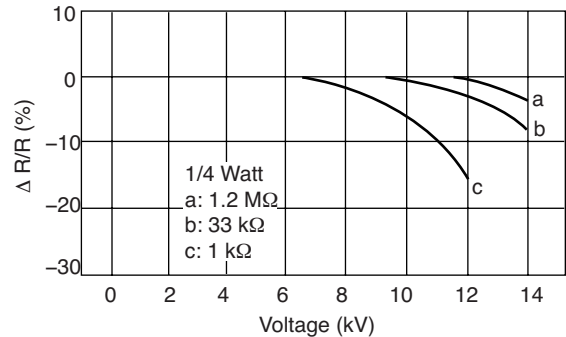


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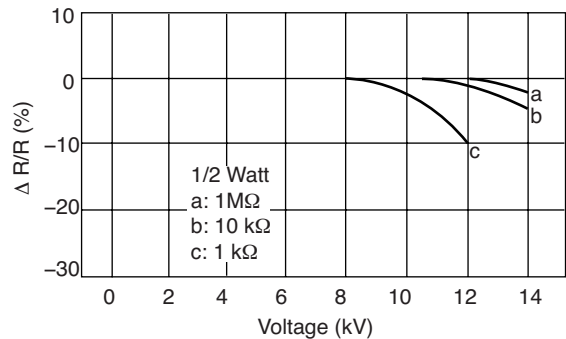
# CC Series

## ■ SURGE RESISTANCE CHARACTERISTICS

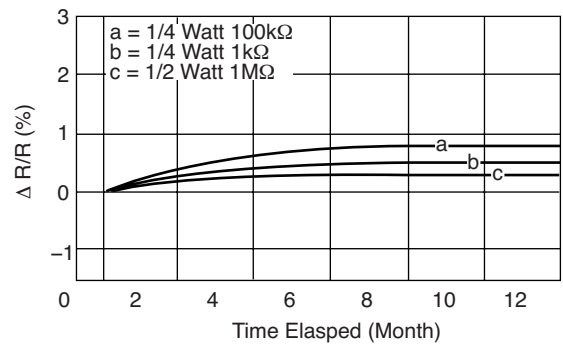
Charging and Discharging a 2,000 pF Condenser for 100 Cycles.



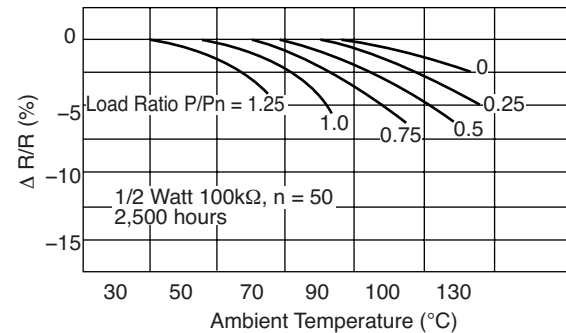
## ■ RELATIONSHIP BETWEEN LOAD RATIO AND AMBIENT TEMPERATURE



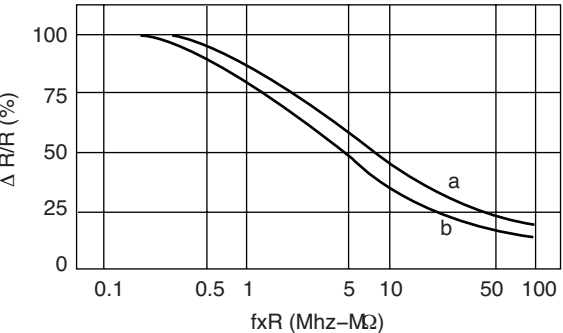
## ■ LOAD LIFE (RATED LOAD)



## ■ VARIATION WITH TIME



## ■ FREQUENCY CHARACTERISTICS



## ■ RELIABILITY TEST

Load Life in Moisture

Samples: 1/4 Watt, 100Ω, 1kΩ, 10kΩ, 100kΩ, 150 pieces of each, 600 pieces in total.

Conditions: 40°C in 95% RH 1% hours "ON" and 0.5 hours "OFF" cycling for 5,000 hours with DC voltage given by the following ratios:

| Criterion (%) |          | Load Ratio P/Pn (%) | Total Testing Time T(Hrs) | Number of Failures r (pcs) | Failure Ratio |                      | Average Lifetime (60% reliability level) (Hrs) |
|---------------|----------|---------------------|---------------------------|----------------------------|---------------|----------------------|------------------------------------------------|
|               |          |                     |                           |                            | $\lambda$     | $\lambda_{CL}$ (60%) |                                                |
| $\Delta R/R$  | $\pm 5$  | 0                   | $2.984 \times 10^6$       | 6                          | 0.201         | 0.244                | $4.098 \times 10^5$                            |
|               |          | 20                  | $2.990 \times 10^6$       | 4                          | 0.134         | 0.176                | $5.682 \times 10^5$                            |
|               |          | 60                  | $2.997 \times 10^6$       | 2                          | 0.067         | 0.104                | $9.615 \times 10^5$                            |
|               |          | 100                 | $2.992 \times 10^6$       | 3                          | 0.100         | 0.139                | $7.194 \times 10^5$                            |
|               |          | Total               | $1.196 \times 10^7$       | 15                         | 0.125         | 0.138                | $7.209 \times 10^5$                            |
|               | $\pm 10$ | Total               | $1.20 \times 10^7$        | 0                          | 0.0055        | 0.0077               | $1.299 \times 10^7$                            |

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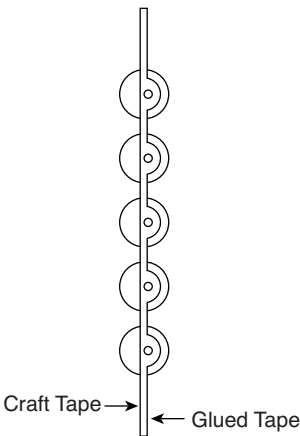
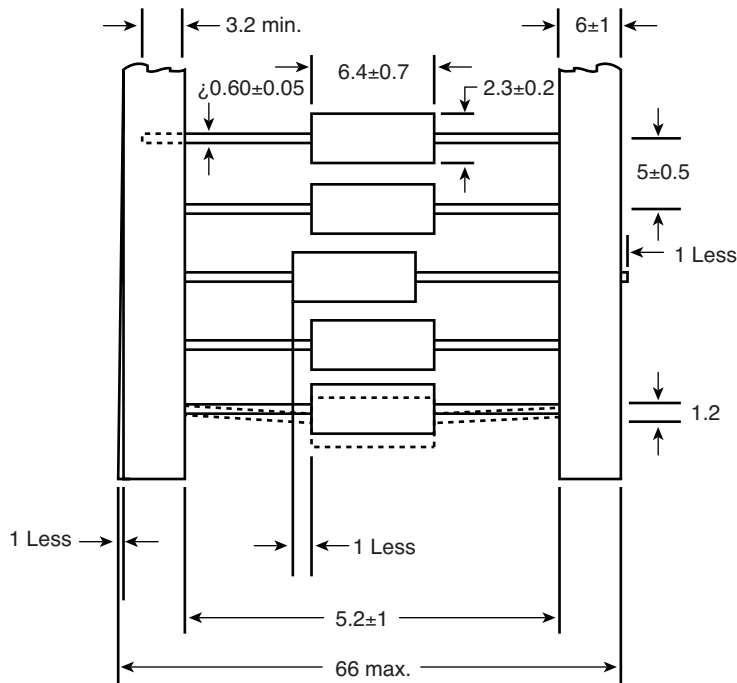




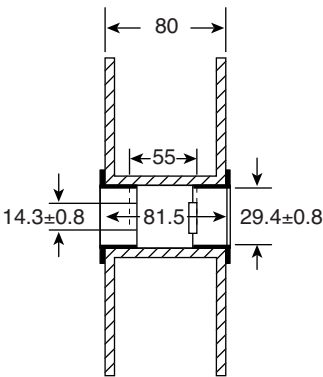
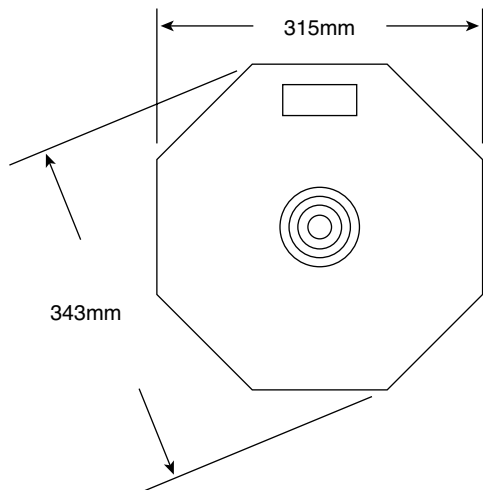
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## LEAD TAPING



Dimensions: in.  
(except where noted)



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