



Carbon Composition Resistors

CC Series

FEATURES

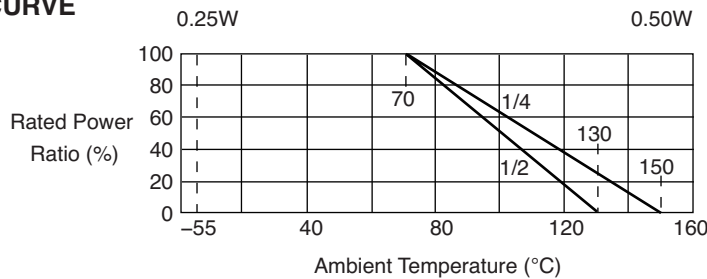
- Low inductance
- Low capacitance
- Compared with film-type resistors, carbon composition resistors have better pulse endurance characteristics



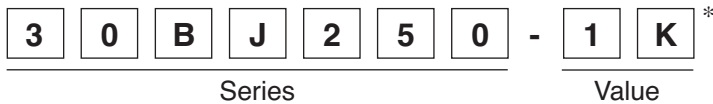
CHARACTERISTICS

| 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

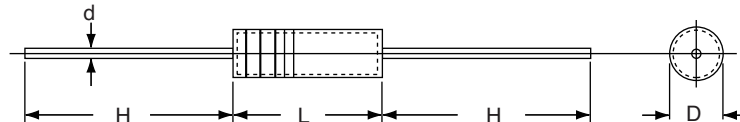


PART NUMBERING SYSTEM



* 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)

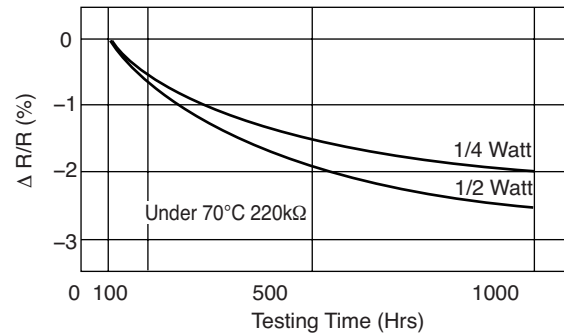
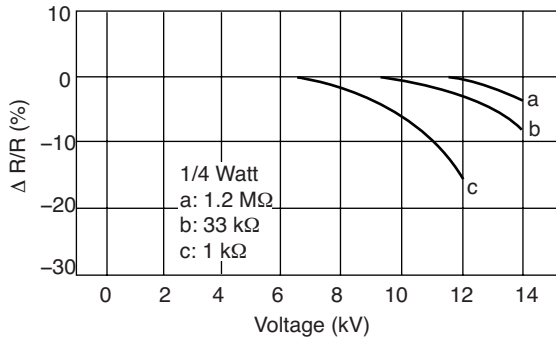
| | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|----|----|-----|-----|-----|-----|------|------|------|------|-----|-----|-----|------|------|------|------|------|------|
| 2.2 | 4.3 | 8.2 | 16 | 33 | 62 | 120 | 240 | 470 | 910 | 1.8K | 3.6K | 6.8K | 13K | 27K | 51K | 100K | 200K | 390K | 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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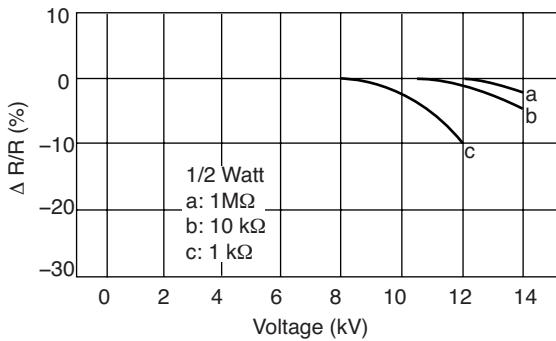


■ SURGE RESISTANCE CHARACTERISTICS

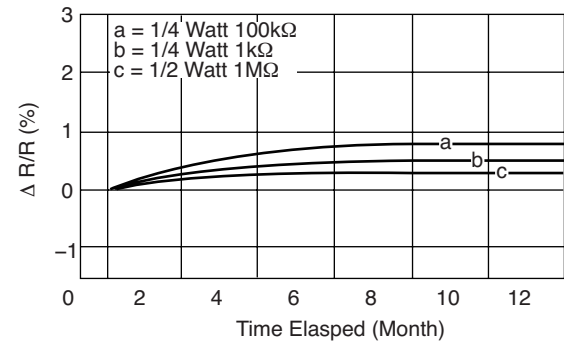
Charging and Discharging a 2,000 pF Condenser for 100 Cycles.



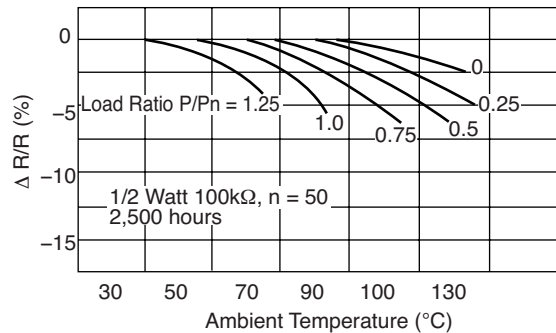
■ RELATIONSHIP BETWEEN LOAD RATIO AND AMBIENT TEMPERATURE



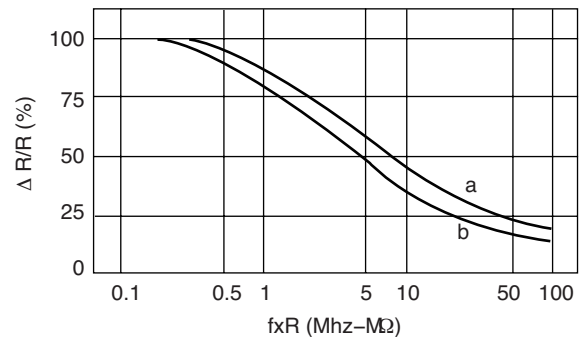
■ LOAD LIFE (RATED LOAD)



■ VARIATION WITH TIME



■ FREQUENCY CHARACTERISTICS



■ RELIABILITY TEST

Load Life in Moisture

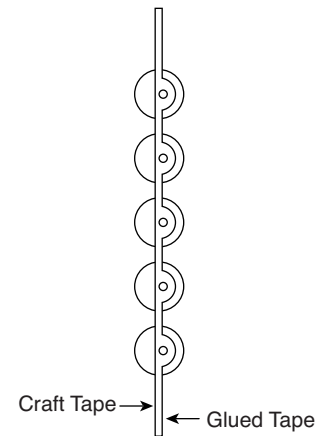
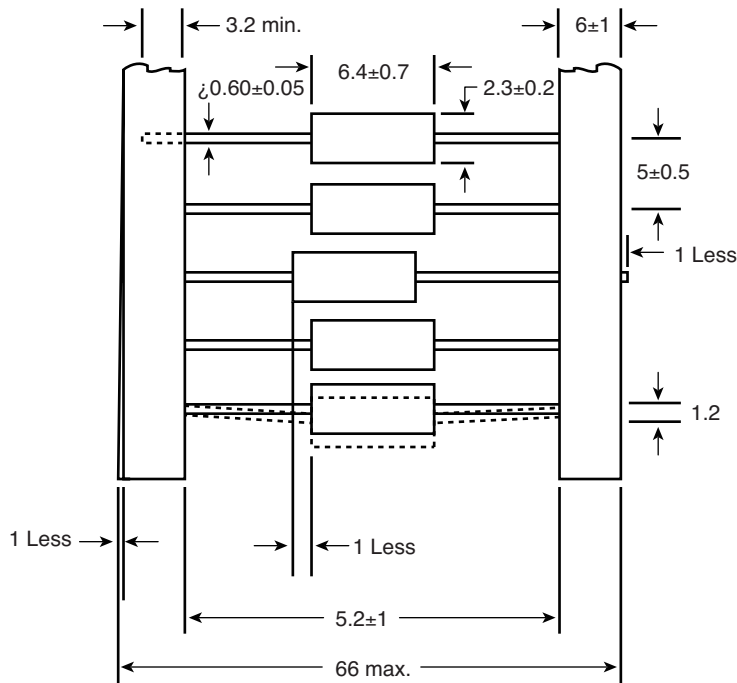
Samples: 1/4 Watt, 100Ω, 1kΩ, 10kΩ, 100kΩ, 150 pieces of each, 600 pieces in total.

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:

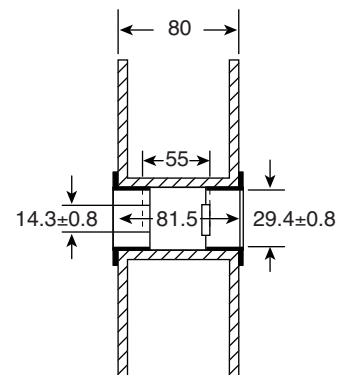
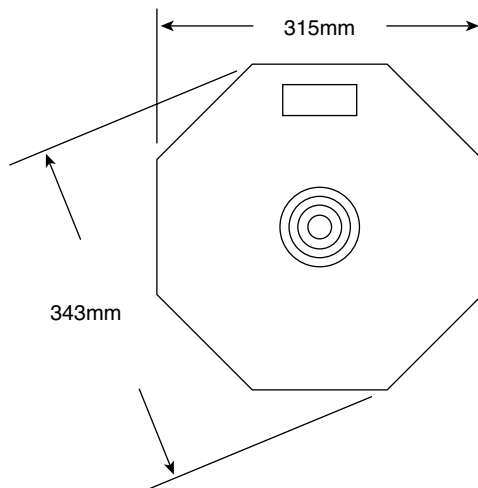
| Criterion (%) | Load Ratio P/Pn (%) | Total Testing Time T(Hrs) | Number of Failures r (pcs) | Failure Ratio | | Average Lifetime (60% reliability level) (Hrs) | |
|---------------|---------------------|---------------------------|----------------------------|---------------|----------------------|--|-------------------------|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

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LEAD TAPING



Dimensions: in.
(except where noted)



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