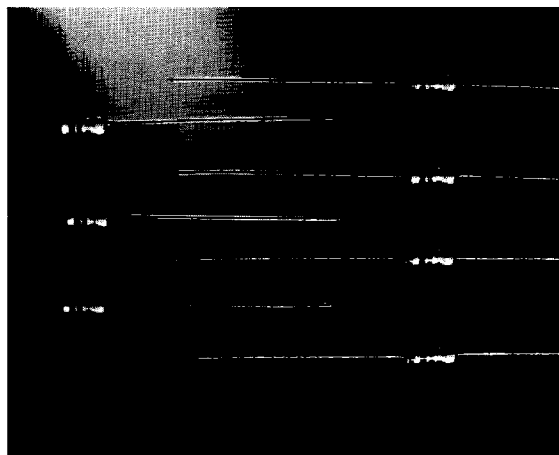


# CR SERIES

## Industrial/Consumer Conformal-Coated 5% Tolerance 1/4, and 1/2 Watts (70°C) Carbon Film Resistors



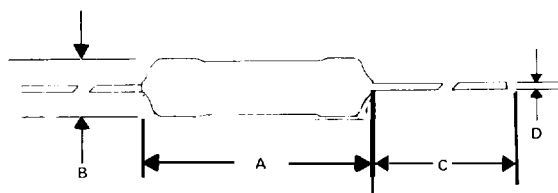
### DESCRIPTION

CR Series resistors are the highest-performance, highest-reliability low-cost carbon-film resistors available at the current state of the resistor art. They are particularly well suited to those applications that require significantly better performance than can be obtained with carbon-composition resistors, and offer a simultaneous reduction in cost as well. These resistors feature very low noise, excellent stability, and wide operating frequency range, in minimum size for their power ratings.

### DESIGN FEATURES

- Highest Carbon-Film Temperature and Time Stability, approaching those of industrial metal-film resistors.
- Low Voltage and Power Coefficients, approaching those of metal-film resistors of comparable size.
- Lowest Noise Index Ever Attained in Carbon-Film.
- Very Low Reactance—negligible series L, very low shunt C; reactance error is generally less than tolerance up to 10MHz, for most resistance values.
- Excellent Immunity to Environmental and Electrical Stress. Highest reliability, longest stable life of any design in this class.
- Most Compact Construction in this class.
- Very Durable Design. Especially well suited to automatic assembly, wave soldering, conveyORIZED handling. Easily withstands industrial solvents used in cleaning circuit assemblies

### DIMENSIONS



### SPECIFICATIONS & NOMENCLATURE

Philips Components P/N (Type)	Power Rating (70°C)	Resistance Range (Ohms)*	Resistance Tolerance	Max. Voltage (Volts)	Dimensions Inches (mm)—see diagram			
					A Max.**	B Max.	C	D
5043CX-J (CR25)	1/4W	1Ω-10 Meg	±5%	250	0.268 (6.8)	0.098 (2.5)	1.102±.079 (28±2)	0.024 (0.6)
5053CX-J (CR37)	1/2W	1Ω-10 Meg	±5%	350	0.393 (10)	0.145 (3.7)	1.102±.079 (28±2)	.024 (0.6)

\*Within the resistance ranges shown, the available resistance values are indicated in the MIL 10 to 100 decade table of values (see table page 525), and their decade multiples.

\*\*Maximum run off on lead is 1 MM max. (0.039") when both sides are added together.

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Fixed Resistors

# CR SERIES

## Industrial/Consumer Conformal-Coated Carbon Film Resistors

### PERFORMANCE CHARACTERISTICS

SPECIFICATIONS	1/4 W	1/2 W
Power rating $P_{nom}$ at 70°C	0.25W	0.5W
Maximum voltage AC or DC	250V	350V
Voltage (RMS) that may be applied for 1 sec. across insulated coat	500V	700V
Insulation resistance	$10^4 M\Omega$	$10^4 M\Omega$
ALL TYPES		
Ambient temperature	-55 to +155°C	
Temperature coefficient	see figure 2	
Noise voltage	see figure 1	

### Dielectric Withstanding Voltage

2x limiting voltage for 1 min. between terminals of resistor and metal foil . . . . . no breakdown or flashover

### MARKING

CR series resistors are marked using four color bands, per EIA specification RS-196A.

### PACKAGING

Available in Bulk (100 pieces per box) or Tape and Reel (5000 pieces per reel).

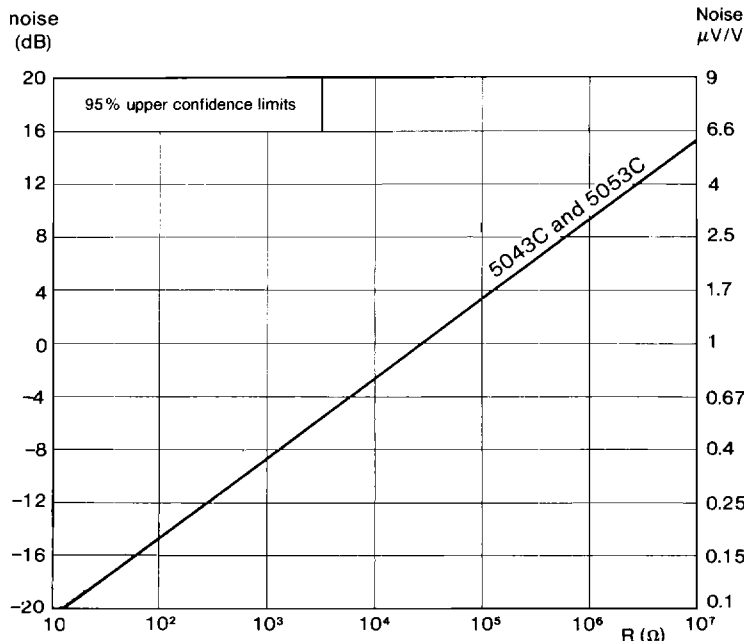
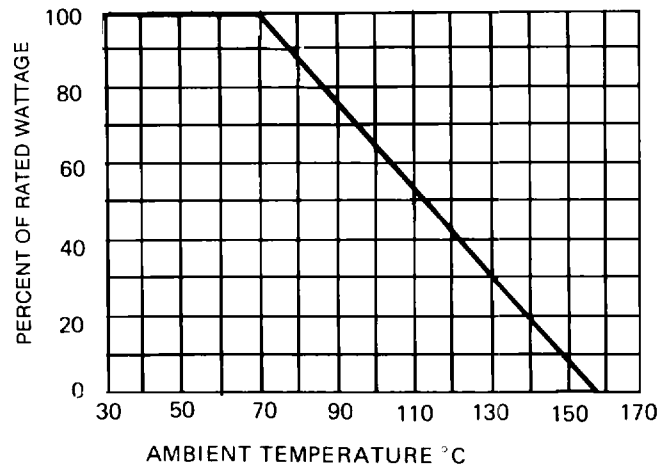


Figure 1. Noise as a function of the resistance value, applicable to all resistor wattages.

### DERATING CURVE



### HOW TO SPECIFY

CR SERIES Resistors can be completely specified using the following designation:

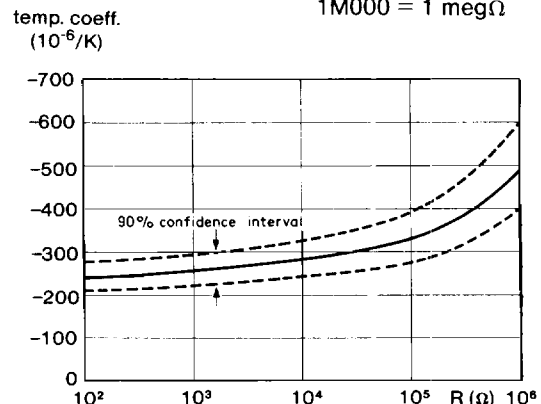
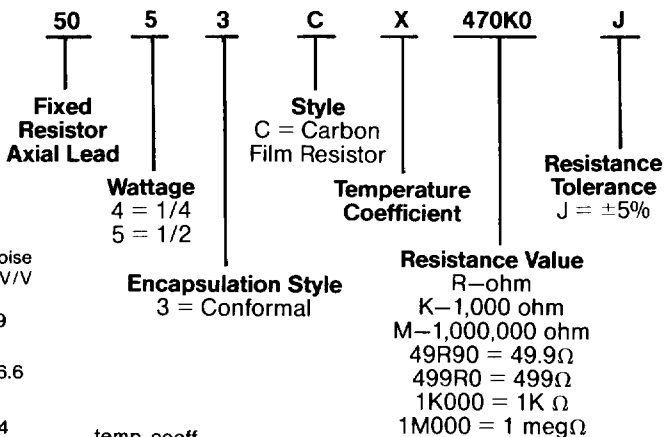


Figure 2. Temperature coefficient as a function of the resistance value, applicable to all resistor wattages. For values  $< 10 \Omega$  &  $> 1 \text{ Meg}$  the Temperature Coefficient is  $\leq +200 \times 10^{-6} / ^\circ \text{C}$

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Fixed Resistors