

# CARBON FILM FIXED RESISTORS

## 碳膜電阻器

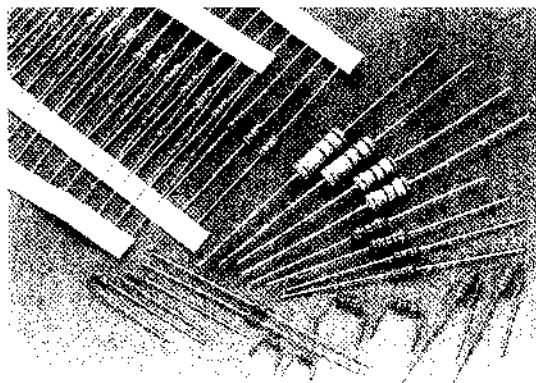
### Series **CR**

#### TYPE

1/8W; 1/6W 1/4W 1/2W 1W 2W

CR-12, CR-25

CR-50, CR-100, CR-200



#### INTRODUCTION

Billions of products are already in use worldwide in all types of applications—from process control instrumentation to telephone receivers and FM radio to color television.

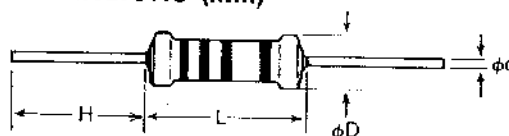
The secret is in a proprietary production system and baking by a uniquely designed and automated production technique. Years of experience in making raw materials and production machinery prove the unique quality and high reliability of these products. They meet—or far exceed—such specifications as EIA RS196A, JIS-C-6402 and IEC-115.

#### FEATURES

- Industry's lowest cost
- Delivery from stock in bulk, taped, and strip pack
- Exceptional long-term stability
- Exceeds carbon comp MIL-R-11 performance
- Standard tolerances:  $\pm 2\%$ ,  $\pm 5\%$  ( $\pm 1\%$  is available on request)
- Variety of packaging—bulk, strip pack, 26mm and 52mm tape and reel, cut and formed, or radial Panasert/Avisert

#### DIMENSIONS & SPECIFICATIONS

DIMENSIONS (mm)



TYPE	DIMENSION (mm)				POWER RATING	MAXIMUM WORKING VOLTAGE	MAXIMUM OVERLOAD VOLTAGE	RESISTANCE RANGE	
	L	D	H	d				$\pm 2\%$ (G)	$\pm 5\%$ (J)
CR-12	$3.3 \pm 0.4$	$1.8 \pm 0.3$	$28 \pm 2$	$0.45 \pm 0.05$	1/6W	200	400	10 $\Omega$ - 470K	1 $\Omega$ - 4.7M
CR-25	$6.3 \pm 0.5$	$2.3 \pm 0.3$	$28 \pm 2$	$0.55 \pm 0.05$	1/4W	250	500	1 $\Omega$ - 10M	1 $\Omega$ - 10M
CR-50	$9.0 \pm 0.5$	$3.2 \pm 0.5$	$26 \pm 2$	$0.60 \pm 0.05$	1/2W	350	700	1 $\Omega$ - 10M	1 $\Omega$ - 10M
CR-100	$11.5 \pm 1.0$	$4.5 \pm 0.5$	$35 \pm 3$	$0.80 \pm 0.05$	1W	500	1000	1 $\Omega$ - 10M	1 $\Omega$ - 10M
CR-200	$15.5 \pm 1.0$	$5.0 \pm 0.5$	$35 \pm 3$	$0.80 \pm 0.05$	2W	500	1000	1 $\Omega$ - 10M	1 $\Omega$ - 10M

\* Miniature series are available.

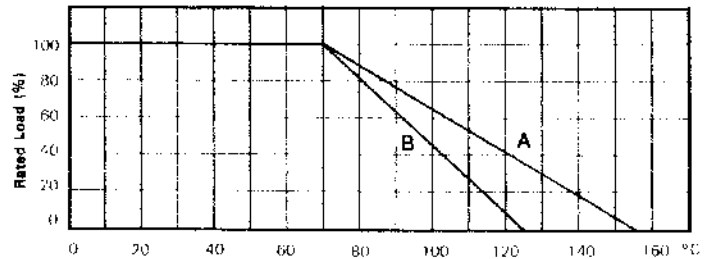
# CARBON FILM FIXED RESISTORS

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### CHARACTERISTICS

<b>Terminal Strength</b>	no damage. Rmax $\pm 0.3\%$ or $0.5\Omega$
<b>Soldering</b>	good tining no damage, Rmax $\pm 0.5\%$ or $0.5\Omega$
<b>Temperature Cycling</b>	Rmax $\pm 0.5\%$
<b>Vibration</b>	no damage. Rmax $\pm 0.5\%$ or $0.5\Omega$
<b>Moisture Resistance</b>	Rmax $\pm 3\%$ See Fig-1
<b>Load Life</b>	Rmax $\pm 2.5\%$ See Fig-2
<b>Temperature Coefficient</b>	See Fig-4
<b>Dielectric Strength</b>	2x Work. Volt no breakdown Rmax $\pm 0.5\%$
<b>Noise</b>	See Fig. 5
<b>Insulation Resistance</b>	min $10^{10}\Omega$
<b>Short-time Overload</b>	Rmax $\pm 0.5\%$
<b>Resistance to Solvents</b>	no damage.

FIG. 3 Derating Curve



The curve B is for CR-12, CR-25, CR-50  
The curve A is for CR-100, CR-200

FIG. 4 Temperature Coefficient

Characteristics	Maximum value of temperature coefficient ppm/°C		
	Under 100 kΩ	100 k to 1 MΩ excl.	1MΩ and over
A	+350 -500	+350 -500	+350 -1000
B	+350 500	+350 -700	+350 -1000

FIG. 1 Moisture Resistance (Typical Curve for Reference)

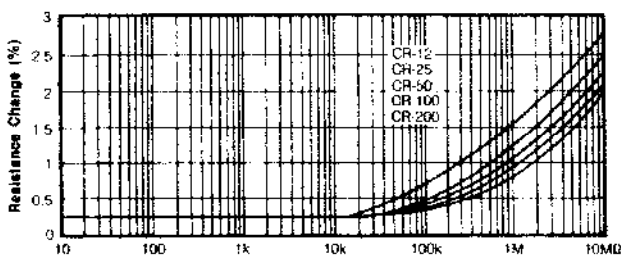


FIG. 5 Current Noise

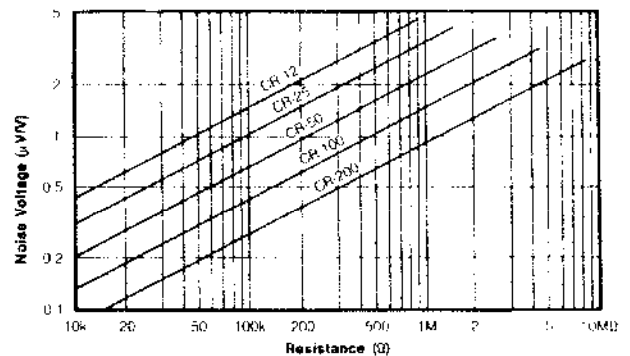


FIG. 2 Load Life (Typical Curve for Reference)

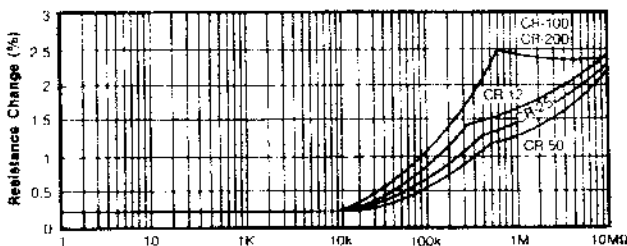


FIG. 6 High Frequency Characteristic

