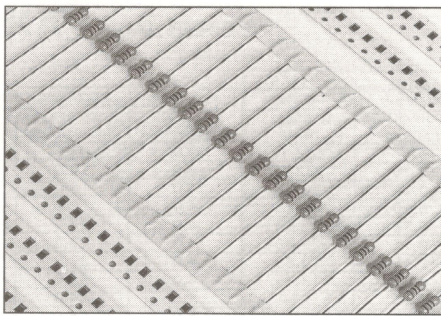


TANTALUM CAPACITORS
 CERAMIC CAPACITORS
 FILM CAPACITORS
 MICA CAPACITORS
 ELECTROLYTIC CAPACITORS
 RESISTORS
 VARISTORS
 VOLTAGE REGULATORS



SAHA RESISTORS

Ordering Information

Example = Carbon Film, 1/4 Watt, 220K Ohm, 5% Tolerance Tape & Reel Resistor.

(EXAMPLE) **C F 2 5 P 2 2 4 J T**

Series _____
 Series Code: CF25P

Resistance (1st, 2nd, 3rd Band) _____

Resistance Color Code

Color Code	1st Band	2nd Band	3rd Band Multiplier
Black	0	0	1
Brown	1	1	10
Red	2	2	100
Orange	3	3	1,000
Yellow	4	4	10,000
Green	5	5	100,000
Blue	6	6	1,000,000
Violet	7	7	10,000,000
Gray	8	8	100,000,000
White	9	9	1,000,000,000
Gold			0.1

Tolerance (4th Band) _____

Resistance Tolerance Code:

Resistance Tolerance	± 2%	± 5%
Tolerance Code	G	J
Color Code	Red	Gold

Packaging Spec Code _____

Code	Packaging Type
T	Tape and Reel
A	Ammo Pack

E 24 Series Resistance Decade Values

1.0	1.1	1.2	1.3	1.5	1.6	1.8	2.0	2.2	2.4	2.7	3.0
3.3	3.6	3.9	4.3	4.7	5.1	5.6	6.2	6.8	7.5	8.2	9.1

CF25P 1/4 WATT RESISTORS SERIES

INTRODUCTION

The CF25P series resistors are the most popular type of film resistors ideal for industrial and general purpose applications. High grade ceramic rods, welded cap construction and special coating techniques ensure high quality and reliability. Products meet and/or exceed EIA RS 196A, JIS- C- 6402 and IEC - 115

These resistors are supplied in individually boxed Tape and Reel packaging as per EIA standards.

FEATURES

- Excellent long term stability.
- Available in bulk, tape & reel or ammo pack.
- Available in 5% tolerance.
- Uniform body size ensures compatibility with High speed automatic handling machines.
- Epoxy coating and marking resistant to all generally used cleaning solvents.

SPECIFICATIONS

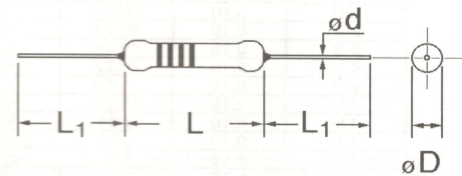
RESISTANCE RANGE: 1 Ohms to 10 M Ohms in E 24 Series. **RATED POWER:** 1/4 Watts at 70 °C with derating above 70 °C.
RATED VOLTAGE: $\sqrt{1/4 \times \text{Nominal Resistance}}$. **MAXIMUM VOLTAGE:** 250 V DC. **MAXIMUM OVERLOAD VOLTAGE:** 500 V DC
TEMPERATURE RANGE: -55°C to +155°C with derating above 70°C. **TOLERANCE:** ±5%.

LOAD LIFE:

The component will be subjected 1000 hours testing at rated voltage and 70° C, with duty cycles of 1.5 hours "on" and 0.5 hours "off". After the test the Resistance change will remain within ±3% of the initial value for values below 1.0 M Ohms and ±5% for values above 1.0 M ohms.

DAMP HEAT TEST:

The component will be subjected to 95% RH. at 40°C for 1000 Hours with duty cycles of 1.5 hours "on" and 0.5 hours "off". After the test the Resistance change will remain within ±3% of the initial value for values below 100 K Ohms and ±5% for values above 100 K Ohms.



DIMENSIONS

BODY				LEAD WIRE			
DIAMETER		LENGTH		DIAMETER		LENGTH	
Inch	mm	Inch	mm	Inch	mm	Inch	mm
0.098 max	2.5 max	0.265 max	6.7 max	0.024 ±0.001	0.6 ±0.03	1.10 ±0.04	28.0 ±1.0

Performance Characteristics

ELECTRICAL

1.1 RESISTANCE TEMPERATURE COEFFICIENT

This value calculated with the following relation shall remain within the values indicated.

$$\frac{R - R_0}{R_0 (t - t_0)} \times 10^6 \text{ (PPM/}^\circ\text{C)}$$

R₀ - Resistance value at reference temperature of 25°C
 R - Resistance value at test temperature of 105°C

Resistance Range in Ohms	upto 100	above 100 to +36K	above 36K to 510K	above 510K to 1M	above 1M to 4.7M
RTC value in PPM/°C	±350	0 to -350	0 to -650	0 to -850	0 to -1200

1.2 VOLTAGE COEFFICIENT

This value calculated with the following relation shall remain within ±50 PPM/ V max.

$$\frac{R - r}{0.9 r E} \times 10^6 \text{ (PPM/}^\circ\text{C)}$$

R - Resistance value at rated continuous working voltage
 r - Resistance value at 0.1 times rated continuous working voltage
 E - Rated continuous working voltage

1.3 DIELECTRIC WITHSTANDING VOLTAGE

Resistors shall withstand a AC rms potential of 500 V for one minute when clamped in a trough of 90° metallic V Block without any flash over or break down

1.4 INSULATION RESISTANCE

The components shall have an insulation resistance of 1000 M Ohms min. when clamped in the trough of 90° metallic V Block and measured at 100 V DC.

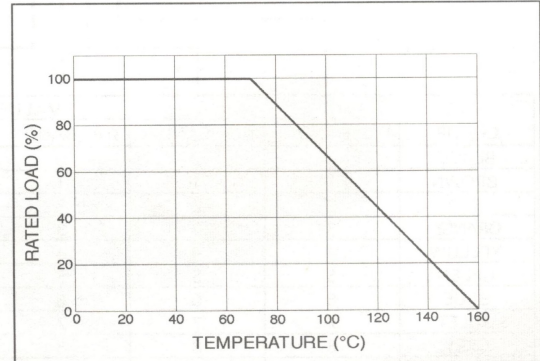
1.5 SHORT TERM OVERLOAD

Permanent resistance change after the application of a potential of 2.5 times rated continuous working voltage for 5±0.5 seconds shall be within ±(1%+0.05 Ohms) Max. without any arching or burning.

1.6 POWER DISSIPATION

The component has a power dissipation rating of 0.25 Watts at 25°C. For operations above 70°C the power dissipation capability has to be derated as shown in FIG. 1.6 at right.

FIGURE 1.6



POWER DISSIPATION DERATING CURVE

MECHANICAL

2.1 TERMINAL STRENGTH

The resistors shall withstand a 0.5 Kg load when held by one terminal and applied to the other terminal in the direction of the longitudinal axis, without any breakdown or mechanical damage.

2.2 TWIST TEST

When leads are bent through 90° at a point 6.35 mm from the body of resistor and rotate through 360° about the original axis of the bent leads in alternating direction for a total 5 rotations.

2.3 SOLDERABILITY

When tested as per MIL - STD - 202D method 208, at test temperature of 230 ±5°C and immersion time of 5 ±0.5 seconds a minimum coverage of 95 % will be achieved.

2.4 RESISTANCE TO SOLDERING HEAT

Resistance change when leads are immersed to 3.2 to 4.8 mm from resistor body in 350°C ±10°C solder bath for 3 ±0.5 seconds, to be within 1% +0.05 Ohms with no evidence of mechanical damage.

ENVIRONMENTAL

3.1 MOISTURE RESISTANCE

Resistance change after 1000 hours of operation at rated voltage, 40 ±2°C and 90 to 95% relative humidity for duty cycles of 1.5 hours "on" and "0.5" hours off will be ±3% for values below 100 K Ohms and ±5% for values above 100 K Ohms

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