

## Cement Resistors

# AXIAL LEAD TYPE

Standard Type[SQP Series], Non-Inductive Type[NSP Series]



## INTRODUCTION

- The materials used and the construction techniques ensure excellent flame resistance, arc resistance and moisture resistances as well as self-extinguishing capabilities. They will withstand the most rigorous loading test
- As resistors in radio and television receivers, the hazardous conditions of smoking and redheat can be completely prevented by the proper choice of power resistors

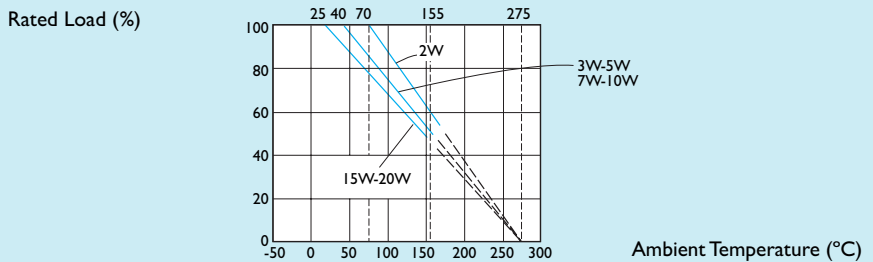
## FEATURES

Exceptionally Small and Sturdy; Mechanically Safe. Excellent Electrical Characteristics

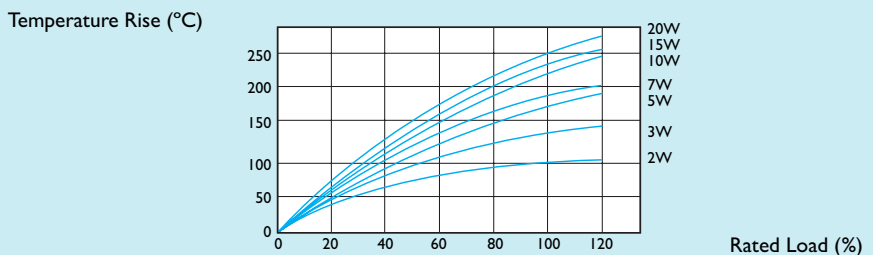
Resistance Tolerance:  $\pm 5\%$

Applicable Specifications: EIA RS-344 and EIA RC-649

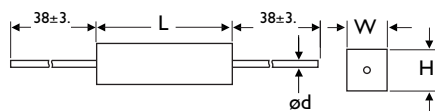
## DERATING CURVE



## TEMPERATURE RISE



## DIMENSIONS



Unit : mm

| STYLE  | L            | W              | H              | ød             |
|--------|--------------|----------------|----------------|----------------|
| SQP200 | 18 $\pm$ 1.0 | 6.5 $\pm$ 1.0  | 6.5 $\pm$ 1.0  | 0.8 $\pm$ 0.05 |
| SQP300 | 22 $\pm$ 1.5 | 8.0 $\pm$ 1.0  | 8.0 $\pm$ 1.0  | 0.8 $\pm$ 0.05 |
| SQP500 | 22 $\pm$ 1.5 | 9.5 $\pm$ 1.0  | 9.0 $\pm$ 1.0  | 0.8 $\pm$ 0.05 |
| SQP700 | 35 $\pm$ 1.5 | 9.5 $\pm$ 1.0  | 9.0 $\pm$ 1.0  | 0.8 $\pm$ 0.05 |
| SQP10A | 48 $\pm$ 1.5 | 9.5 $\pm$ 1.0  | 9.0 $\pm$ 1.0  | 0.8 $\pm$ 0.05 |
| SQP15A | 48 $\pm$ 1.5 | 12.5 $\pm$ 1.5 | 12.5 $\pm$ 1.5 | 1.0 $\pm$ 0.05 |
| SQP20A | 60 $\pm$ 2.0 | 12.5 $\pm$ 1.5 | 12.5 $\pm$ 1.5 | 1.0 $\pm$ 0.05 |

Note :

## ELECTRICAL CHARACTERISTICS

| STYLE                               | SQP200          | SQP300    | SQP500    | SQP700    | SQP10A    | SQP15A | SQP20A |
|-------------------------------------|-----------------|-----------|-----------|-----------|-----------|--------|--------|
| Power Rating                        | 2W              | 3W        | 5W        | 7W        | 10W       | 15W    | 20W    |
| Operating Temp. Range               | -55°C to +155°C |           |           |           |           |        |        |
| Maximum Working Voltage             | 250V            | 350V      | 350V      | 500V      | 500V      | 500V   | 500V   |
| Maximum Overload Voltage            | 500V            | 700V      | 700V      | 1000V     | 1000V     | 1000V  | 1000V  |
| Dielectric Withstanding Voltage     | 500V            | 700V      | 700V      | 1000V     | 1000V     | 1000V  | 1000V  |
| Value Range ± 5% (Wirewound)        | 0.15Ω~100Ω      | 0.3Ω~120Ω | 0.3Ω~180Ω | 0.5Ω~220Ω | 1Ω~270Ω   |        |        |
| Value Range ± 5% (Metal Oxide Film) | 110Ω~10KΩ       | 130Ω~22KΩ | 200Ω~33KΩ | 240Ω~10KΩ | 300Ω~10KΩ |        |        |
| Temperature Coefficient             | ± 300ppm/°C     |           |           |           |           |        |        |

\* 1. Standard resistance is as the above list, below or over this resistance on request.

\* 2. Non-Inductive type up to 50 $\Omega$  only.

## ENVIRONMENTAL CHARACTERISTICS

| PERFORMANCE TEST                      | TEST METHOD                                                    |                                                                                           | APPRAISE                                  |
|---------------------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------|
| Short Time Overload                   | JIS-C-5202 5.5                                                 | 2.5 Times RCW V for 5 Seconds                                                             | $\pm (2\%+0.05\Omega)$                    |
| Dielectric Withstanding Voltage       | JIS-C-5202 5.7                                                 | in V-Block for 60 Seconds                                                                 | by Type                                   |
| Temperature Coefficient of Resistance | JIS-C-5202 5.2                                                 | -55°C to +155°C                                                                           | $\pm 300$ ppm/°C                          |
| Insulation Resistance                 | JIS-C-5202 5.6                                                 | in V-Block                                                                                | >100M $\Omega$                            |
| Solderability                         | JIS-C-5202 6.5                                                 | 235°C for 5 $\pm$ 0.5 Seconds                                                             | 95% Min. Coverage                         |
| Resistance to Solvent                 | JIS-C-5202 6.9                                                 | Trichroethane for 1 Min. with Ultrasonic                                                  | No Deterioration of Coatings and Markings |
| Terminal Strength                     | Direct Load for 10 Sec. in The Direction of The Terminal Leads |                                                                                           | $\geq 2.5$ kg (24.5N)                     |
| Pulse Overload                        | JIS-C-5202 5.8                                                 | 4 Times RCW V 10000 Cycles (1 Sec. on , 25 Sec. off)                                      | $\pm (2\%+0.05\Omega)$                    |
| Load Life in Humidity                 | JIS-C-5202 7.9                                                 | 40 $\pm$ 2°C, 90~95% RH at RCW V for 1000 Hrs. (1.5 Hrs. on , 0.5 Hrs. off )              | $\pm (5\%+0.05\Omega)$                    |
| Load Life                             | JIS-C-5202 7.10                                                | 70°C at RCW V for 1000 Hrs. (1.5 Hrs. on , 0.5 Hrs. off)                                  | $\pm (5\%+0.05\Omega)$                    |
| Temperature Cycling                   | JIS-C-5202 7.4                                                 | -55°C $\rightarrow$ Room Temp. $\rightarrow$ +155°C $\rightarrow$ Room Temp. for 5 Cycles | $\pm (2\%+0.05\Omega)$                    |
| Resistance to Soldering Heat          | JIS-C-5202 6.4                                                 | 350°C $\pm$ 10°C for 3 $\pm$ 0.5 Seconds                                                  | $\pm (1\%+0.05\Omega)$                    |

\* Rated Continuous Working Voltage (RCW V)=  $\sqrt{\text{Power Rating} \times \text{Resistance Value}}$