

## 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

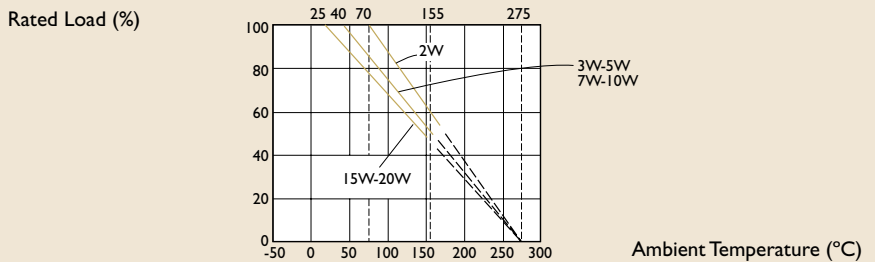
## FEATURES

Exceptionally Small and Sturdy; Mechanically Safe. Excellent Electrical Characteristics

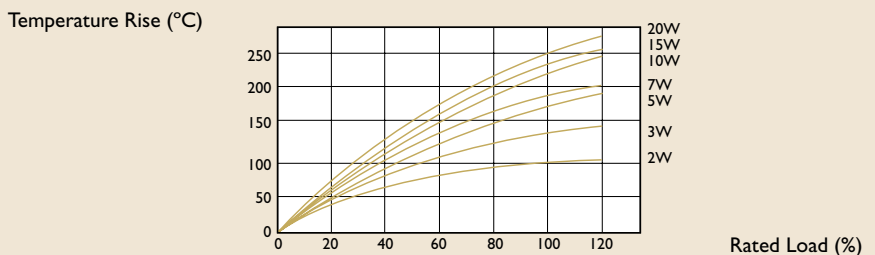
Resistance Tolerance:  $\pm 5\%$

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

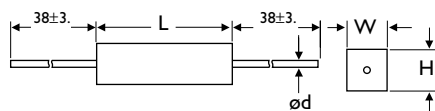
## DERATING CURVE



## TEMPERATURE RISE



## DIMENSIONS



Unit : mm

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

Note :

## ELECTRICAL CHARACTERISTICS

| STYLE                                    | SQP200                      | SQP300                     | SQP500                     | SQP700                     | SQP10A                     | SQP15A | SQP32A |
|------------------------------------------|-----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|--------|--------|
| 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 $\pm 5\%$ (Ceramic Core)     | 0.15 $\Omega$ ~100 $\Omega$ | 0.3 $\Omega$ ~120 $\Omega$ | 0.3 $\Omega$ ~180 $\Omega$ | 0.5 $\Omega$ ~220 $\Omega$ | 1 $\Omega$ ~270 $\Omega$   |        |        |
| Value Range $\pm 5\%$ (Metal Oxide Film) | 110 $\Omega$ ~10K $\Omega$  | 130 $\Omega$ ~22K $\Omega$ | 200 $\Omega$ ~33K $\Omega$ | 240 $\Omega$ ~10K $\Omega$ | 300 $\Omega$ ~10K $\Omega$ |        |        |
| Temperature Coefficient                  | $\pm 300$ ppm/°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 RCWV 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 RCWV 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 RCWV 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 RCWV for 1000 Hrs. (1.5 Hrs. on , 0.5 Hrs. off)                                  | $\pm (5\%+0.05\Omega)$                    |
| Temperature Cycling                   | JIS-C-5202 7.4                                                 | -65°C $\rightarrow$ Room Temp. $\rightarrow$ 150°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 (RCWV)=  $\sqrt{\text{Power Rating} \times \text{Resistance Value}}$