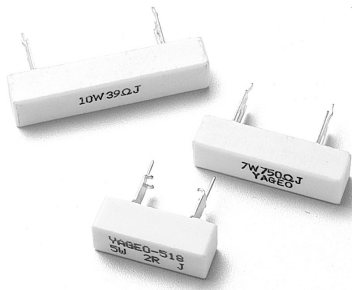


Cement Resistors

Radial Terminals Type

Normal Style [SQZ Series]

Non-Inductive Style [NSZ Series]



INTRODUCTION

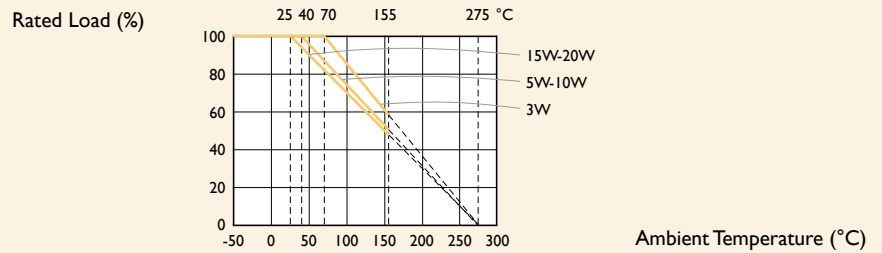
The materials used and the construction techniques ensure excellent flame resistance, arc resistance and moisture resistance as well as self-extinguishing capabilities. They will withstand the most rigorous loading test.

As resistors in radio and television receivers, hazardous conditions such as smoking and redheat can be completely prevented by the proper choice of power resistors.

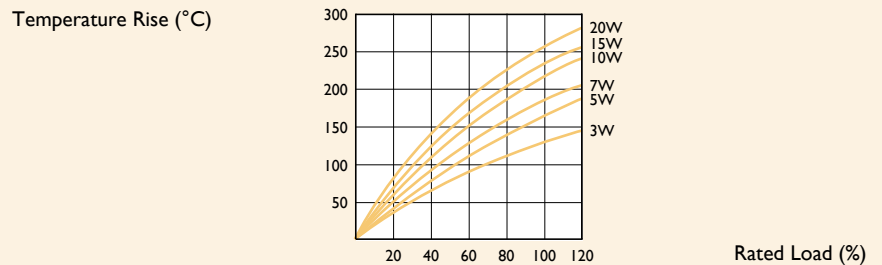
FEATURES

| | |
|----------------------|---------------------------|
| Power Rating | 3W, 5W, 7W, 10W, 15W, 20W |
| Resistance Tolerance | ±5% |
| T.C.R. | ±300ppm/°C |

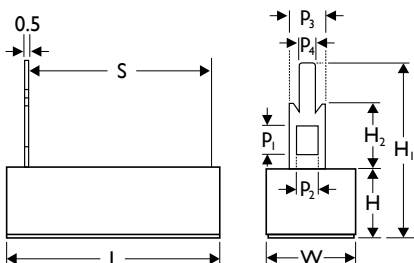
DERATING CURVE



TEMPERATURE RISE



DIMENSIONS



Unit: mm

| STYLE | DIMENSION | | | | | | | | | | | | |
|--------|-----------|--------|----------|----------|--------|--------|--------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | Normal | Non-Ind. | L | H | W | S | H ₁ | H ₂ | P ₁ | P ₂ | P ₃ | P ₄ |
| SQZ300 | NSZ300 | | | 24.0±1.5 | 9.0±1 | 9.0±1 | 10.0±1 | 24.0±1 | 9.5±1.0 | 4.0±0.2 | 2.0±0.2 | 5.0±0.2 | 1.4±0.1 |
| SQZ500 | NSZ500 | | | 27.0±1.5 | 9.5±1 | 9.5±1 | 15.0±1 | 24.0±1 | 9.5±1.0 | 4.0±0.2 | 2.0±0.2 | 5.0±0.2 | 1.4±0.1 |
| SQZ700 | NSZ700 | | | 35.0±1.5 | 9.5±1 | 9.5±1 | 22.5±1 | 24.0±1 | 9.5±1.0 | 4.0±0.2 | 2.0±0.2 | 5.0±0.2 | 1.4±0.1 |
| SQZ10A | NSZ10A | | | 48.0±1.5 | 9.5±1 | 9.5±1 | 32.5±1 | 24.0±1 | 9.5±1.0 | 4.0±0.2 | 2.0±0.2 | 5.0±0.2 | 1.4±0.1 |
| SQZ15A | NSZ15A | | | 48.0±1.5 | 12.5±1 | 12.5±1 | 32.5±1 | 34.5±1 | 15.0±1.5 | 7.0±0.2 | 6.0±0.2 | 10.0±0.2 | 2.7±0.1 |
| SQZ20A | NSZ20A | | | 63.5±2.0 | 12.5±1 | 12.5±1 | 42.5±1 | 34.5±1 | 15.0±1.5 | 7.0±0.2 | 6.0±0.2 | 10.0±0.2 | 2.7±0.1 |

ELECTRICAL CHARACTERISTICS

NORMAL STYLE

| STYLE | SQZ300 | SQZ500 | SQZ700 | SQZ10A | SQZ15A | SQZ20A |
|-------------------------------------|-----------------|----------------|--------------|----------------|--------------|---------------|
| Power Rating at 25°C | | | | | 15W | 20W |
| Power Rating at 40°C | | 5W | 7W | 10W | | |
| Power Rating at 70°C | 3W | | | | | |
| Maximum Working Voltage | 250V | 350V | 500V | | | |
| Maximum Overload Voltage | 500V | 700V | 1,000V | | | |
| Voltage Proof | 500V | 700V | 1,000V | | | |
| Resistance Range (Wirewound) | 0.3 Ω - 130 Ω | 0.36 Ω - 200 Ω | | 0.56 Ω - 430 Ω | 1 Ω - 560 Ω | 1.5 Ω - 750 Ω |
| Resistance Range (Metal Oxide Film) | 150 Ω - 1M Ω | 220 Ω - 1M Ω | 300 Ω - 1M Ω | 470 Ω - 1M Ω | 750 Ω - 1M Ω | 820 Ω - 1M Ω |
| Operating Temp. Range | -55°C to +155°C | | | | | |
| Temperature Coefficient | ±300ppm/°C | | | | | |

NON-INDUCTIVE STYLE

| STYLE | NSZ300 | NSZ500 | NSZ700 | NSZ10A | NSZ15A | NSZ20A |
|------------------------------|-----------------|--------|--------|--------------|--------|--------------|
| Power Rating at 25°C | | | | | 15W | 20W |
| Power Rating at 40°C | | 5W | 7W | 10W | | |
| Power Rating at 70°C | 3W | | | | | |
| Maximum Working Voltage | 250V | 350V | 500V | | | |
| Maximum Overload Voltage | 500V | 700V | 1,000V | | | |
| Voltage Proof | 500V | 700V | 1,000V | | | |
| Resistance Range (Wirewound) | 0.1 Ω - 10 Ω | | | 0.1 Ω - 20 Ω | | 0.1 Ω - 30 Ω |
| Operating Temp. Range | -55°C to +155°C | | | | | |
| Temperature Coefficient | ±300ppm/°C | | | | | |

Note: Special value is available on request

ENVIRONMENTAL CHARACTERISTICS

| PERFORMANCE TEST | TEST METHOD | | APPRAISE |
|-------------------------------|------------------|--|---|
| Short Time Overload | IEC 60115-1 4.13 | 2.5 times RCWV for 5 Sec. | ±2.0%+0.05 Ω |
| Voltage Proof | IEC 60115-1 4.7 | in V-block for 60 Sec., test voltage by type | By type |
| Temperature Coefficient | IEC 60115-1 4.8 | -55°C to +155°C | By type |
| Insulation Resistance | IEC 60115-1 4.6 | in V-block for 60 Sec. | >1,000M Ω |
| Solderability | IEC 60115-1 4.17 | 235±5°C for 3±0.5 Sec. | 95% Min. coverage |
| Solvent Resistance of Marking | IEC 60115-1 4.30 | IPA for 5±0.5 Min. with ultrasonic | No deterioration of coatings and markings |
| Robustness of Terminations | IEC 60115-1 4.16 | Direct load for 10 Sec. in the direction of the terminal leads | ≥2.5kg (24.5N) |
| Periodic-pulse Overload | IEC 60115-1 4.39 | 4 times RCWV 10,000 cycles (1 Sec. on, 25 Sec. off) | ±2.0%+0.05 Ω |
| Damp Heat Steady State | IEC 60115-1 4.24 | 40±2°C, 90-95% RH for 56 days, loaded with 0.1 times RCWV | ±5.0%+0.05 Ω |
| Endurance at 70°C | IEC 60115-1 4.25 | 70±2°C at RCWV for 1,000 Hr. (1.5 Hr. on, 0.5 Hr. off) | ±5.0%+0.05 Ω |
| Temperature Cycling | IEC 60115-1 4.19 | -55°C ⇄ Room Temp. ⇄ +155°C ⇄ Room Temp. (5 cycles) | ±2.0%+0.05 Ω |
| Resistance to Soldering Heat | IEC 60115-1 4.18 | 260±3°C for 10±1 Sec., immersed to a point 3±0.5mm from the body | ±1.0%+0.05 Ω |

Note: Rated Continuous Working Voltage (RCWV) = $\sqrt{\text{Power Rating} \times \text{Resistance Value}}$