

INTRODUCTION

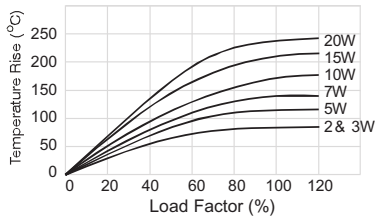
Cement-Box type resistors offer a choice of resistive elements inside a white flameproof cement box. In addition to being flameproof, these resistors are also non-corrosive and humidity proof. The available resistive elements are:

- SQ _____ - Standard wire wound (all welded construction)
- MSQ _____ - Metal oxide core
(low inductance, high resistance)
- NSQ _____ - Non-Inductively wound
(Ayrton-Perry Method, all welded construction)
- GSQ _____ - Fiber Glass Core

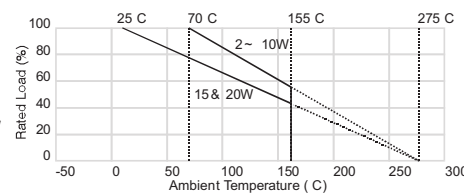
PART NUMBER EXAMPLE

MSQM 5W - 47K - J

TEMPERATURE RISE



DERATING CURVE



SPECIFICATIONS

CHARACTERISTICS

| Test Items | Spec. | Condition |
|-------------------------------------|--|--|
| Wirewound Resistance Temp. Coeff. | Typical <1Ω= 300ppm >1Ω = 200ppm | JIS.C.5202.2.5.2 |
| Metal Oxide Resistance Temp. Coeff. | Typical ±200ppm/°C | -55 °C ~ +200°C |
| Moisture Load Life Cycle Test | ±3% | 40°C 95% @ RH 1,000hrs |
| Standard Tolerance | J = ±5%, K = ±10% | -25°C |
| Maximum Working Voltage* | 500V 750V 1000V | 2W, 3W, 5W, 7W 10W 15W, 20W, 25W |
| Dielectric | ±2% + 0.05 | 1000V, 1 min |
| Insulation Resistance | >10 ² MΩ | 500Vdc, 1 min |
| Short Term Overload | ±(2% + 0.05Ω) | 1000V, 1 min |
| Load Life | ±(5% + 0.05Ω) | 70°C for 1000 hours |
| Humidity | ±5% + 0.05Ω | 40°C, 90% RH, 1000 hours |
| Solderability | 95% coverage min. | 230°C, 5 sec. |
| Resistance to Solder Heat | ±(2% + 0.05Ω) | 260°C, 10 sec. |

*Maximum Voltage per value to be determined by Ohms Law but not to exceed noted voltage.

| Series | | | | | Resistance Range | | | | |
|-----------|---|----------|--------|-----------|------------------|------------|------------|------------|-----------|
| | W | H | L | d | P (SQH Series) | SQ_ | MSQ_ | | |
| SQP1W | 6±1 | 6±1 | 14±1 | 0.6±0.05 | | 0.01 - 75 | 1.0 - 33K | | |
| SQP2W | 7±1 | 7±1 | 18±1.5 | 0.65±0.05 | | 0.01 - 100 | 1.0 - 33K | | |
| SQP3W | 8±1 | 8±1 | 22±1.5 | 0.8±0.05 | | 0.01 - 300 | 1.0 - 100K | | |
| SQP5W | 10±1 | 9±1 | 22±1.5 | 0.8±0.05 | 5±1 | 0.01 - 300 | 1.0 - 100K | | |
| SQP7W | 10±1 | 9±1 | 35±1.5 | 0.8±0.05 | 10±1 | 0.1 - 600 | 1.0 - 100K | | |
| SQP10W | 10±1 | 9±1 | 48±1.5 | 0.8±0.05 | 10±1 | 0.1 - 1.2K | 1.0 - 100K | | |
| SQP15W | 12.5±1 | 11.5±1 | 48±1.5 | 0.8±0.05 | | 0.5 - 1.5K | | | |
| SQP20W | 14±1 | 13.5±1 | 60±1.5 | 0.8±0.05 | | 0.5 - 1.5K | | | |
| SQP25W | 14±1 | 13.5±1 | 60±1.5 | 0.8±0.05 | | 0.5 - 1.5K | | | |
| | W | H | L | T | | SQ_ | MSQ_ | | |
| SQT5W | 10±1 | 9±1 | 22±1.5 | 1.5±0.5 | | 0.1 - 600 | 1.0 - 100K | | |
| SQT7W | 10±1 | 9±1 | 35±1.5 | 3.0±0.5 | | 0.1 - 1.2K | 1.0 - 100K | | |
| SQT10W | 10±1 | 9±1 | 48±1.5 | 3.0±0.5 | | 0.5 - 1.5K | | | |
| | W | H | T | P | | SQ_ | MSQ_ | | |
| SQM2W | 11±1 | 20.5±1.5 | 7±1 | 5 | | 0.01-100 | 1.0 - 33K | | |
| SQM3W | 11±1 | 20.5±1.5 | 7±1 | 5 | | 0.01-100 | 1.0 - 33K | | |
| SQM5W | 13±1 | 25±1.5 | 9±1 | 5 | | 0.01-300 | 1.0 - 100K | | |
| SQM7W | 13±1 | 39±1.5 | 9±1 | 5 | | 0.1 - 500 | 1.0 - 100K | | |
| SQM10W | 13±1 | 51±1.5 | 9±1 | 5 | | 0.1 - 600 | 1.0 - 75K | | |
| SQMX10W | 16±1 | 35±1.5 | 12±1 | 7.5 | | 0.1 - 360 | 1.0 - 100K | | |
| SQMX12.5W | 16±1 | 35±1.5 | 12±1 | 7.5 | | 0.1 - 600 | | | |
| | W | H | L | P | H1 | P1 | P2 | SQ_ | MSQ_ |
| SQZ5W | 10±1 | 10±1 | 27±1.5 | 15±1 | 10.5±1 | 4.5-7.5 | 1.6±0.2 | 0.01 - 300 | 1.0 - 50K |
| SQZ7W | 10±1 | 10±1 | 35±1.5 | 20±1 | 10.5±1 | 7±1 | 1.6±0.2 | 0.1 - 600 | 1.0 - 50K |
| SQZ10W | 10±1 | 12±1 | 48±1.5 | 32±1 | 10.5±1 | 7±1 | 1.6±0.2 | 0.1 - 600 | 1.0 - 50K |
| SQZ15W | 12±1 | 12±1 | 48±1.5 | 32±1 | 15±1 | 10±1 | 3±0.2 | 0.1 - 1K | |
| SQZ20W | 12±1 | 12±1 | 62±1.5 | 42±1 | 15±1 | 10±1 | 3±0.2 | 0.1 - 1K | |
| SQZ25W | 12±1 | 12±1 | 62±1.5 | 42±1 | 15±1 | 10±1 | 3±0.2 | 0.1 - 1K | |
| SQH | 5W to 10W specifications are the same as SQP5W to 10W | | | | | | | SQ_ | MSQ_ |
| | W | H | L | P | H1 | T | Diagram | SQ_ | MSQ_ |
| SQU10W | 10±1 | 9±1 | 48±1 | 35±1 | 18±1 | 0.4 | A | 0.1-270 | 271-50K |
| SQU15W | 12.5±1 | 11.5±1 | 48±1 | 32±1 | 21±1 | 0.4 | A | 1-470 | 471-150K |
| SQU20W | 12.5±1 | 13.5±1 | 63±1 | 44±1 | 21±1 | 0.4 | A | 1-560 | 561-150K |
| SQU30W | 19±1 | 19±1 | 75±1 | 55±1 | 32±1 | 0.8 | B | 1-820 | 821-150K |
| SQU40W | 19±1 | 19±1 | 90±1 | 70±1 | 32±1 | 0.8 | B | 1-1K | 1.1K-150K |

