1. INTRODUCTION

Cement resistors are manufactured by winding the ceramic rods with metal alloy resistance wire and put it in a fireproof ceramic box then concrete with non-flameable and heat-resistant cement.

2. FEATURES

- Heat and flame resistant!
- Completely insulated character suitable for printed circuit board.
- For high resistance value, the winding core will be replaced by metal oxide film cutting core (RS type).
- Non inductive type are available on request!

3. EXPLANATIONS OF ORDERING CODE

DESCRIPTION : SQH 20W 5% 10K

SYNTON CODE : SQH 20 J 103

SERIES

CEMENT POWER RESISTOR

SQH TYPE

POWER

10 : 10W
15 : 15W
20 : 20W
30 : 30W
40 : 40W

20S : 20W small Size

(Please see detail of Figure1)

TOLERANCE

J : ±5%
G : ±2%
F : ±1%

RESISTANCE VALUE

E24 Series 5%
3 Digits :
2R2 : 2.2Ω
101 : 100Ω
103 : 10K
105 : 1M

E96 Series 1%
4 Digits :
2R20 : 2.2Ω
1000 : 100Ω
1002 : 10K
1004 : 1M

4. ELECTRICAL CHARACTERISTICS

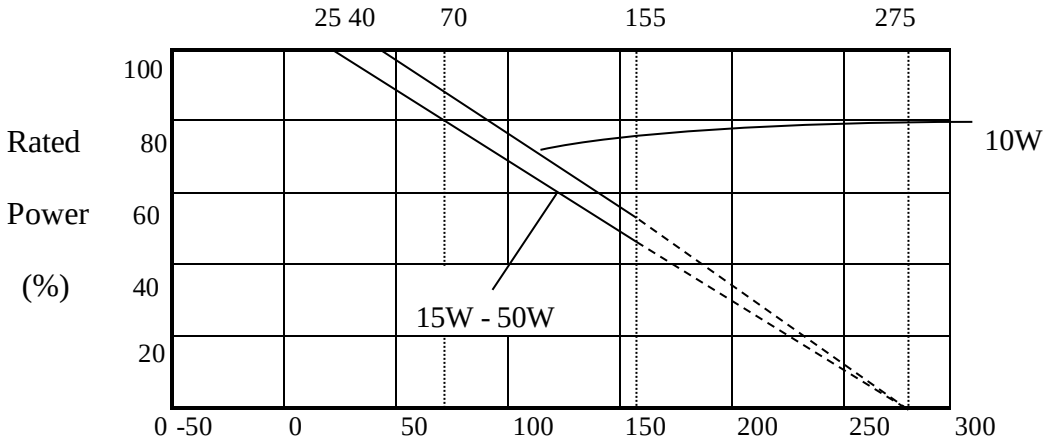
STYLE	SQH-10	SQH-15	SQH-20	SQH-30S	SQH-30	SQH-40	SQH-50S
Power Rating at 70℃	10W	15W	20W	30W	30W	40W	50W
Operating Temp. Range	—55℃～+155℃						
Maximum Working Volt.	250V	350V	500V	500V	500V	500V	500V
Maximum Overload Volt.	500V	700V	1000V	1000V	1000V	1000V	1000V
Dielectric withstanding Volt.	1000V	1000V	1000V	1000V	1000V	1000V	1000V
Value Range	0.1Ω~ 10KΩ	1Ω~ 10KΩ	1Ω~ 10KΩ	2Ω~ 1KΩ	2Ω~ 1KΩ	3Ω~ 2KΩ	3Ω~ 2KΩ
	Special Range Available On Your Request.						
Temp. Coefficient	±300 PPM / ℃ special low to ±25PPM , high to ±1500PPM						

Figure 1

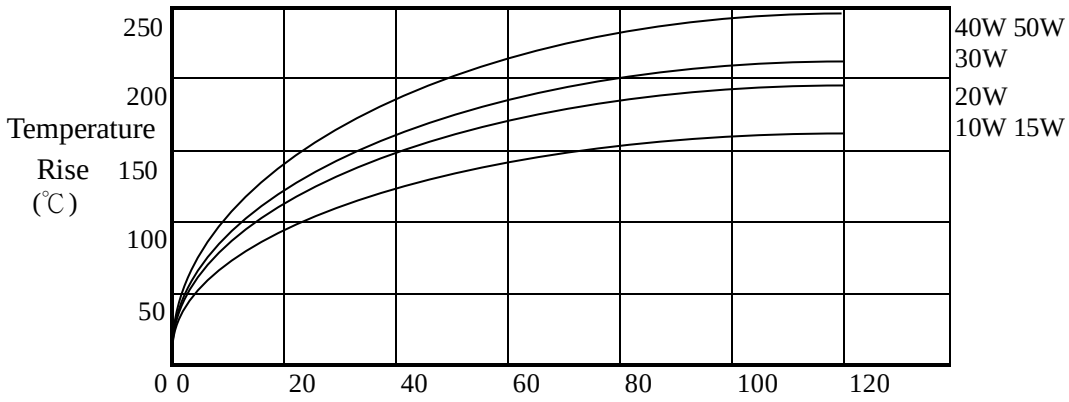
* Standard resistance is at the above list, below or over this resistance on request.

* Non-Inductive type up to 50Ω only.

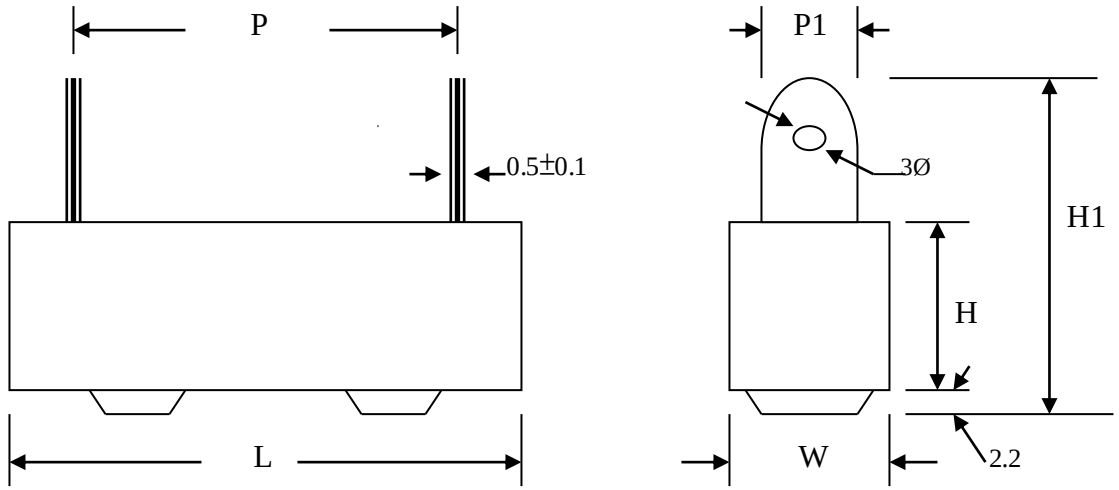
5. DERATING CURVE



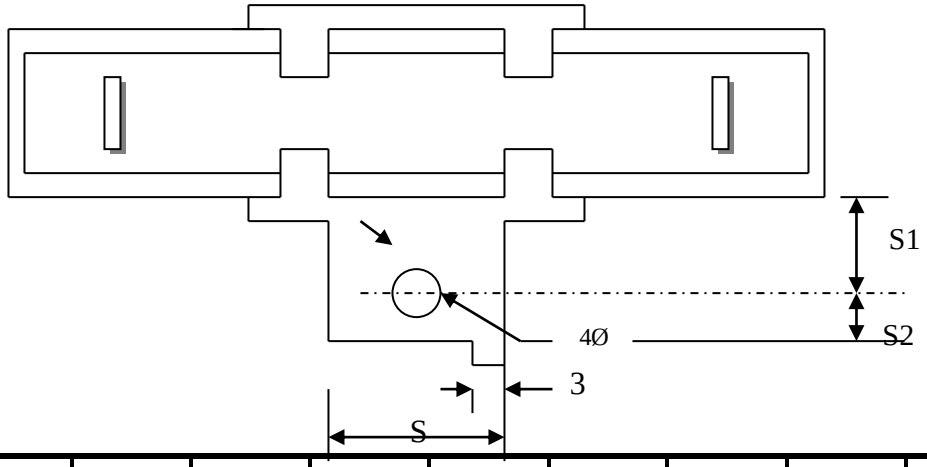
6. TEMPERATURE RISE



7. DIMENSIONS (SQH)



(SQHG)



Unit:m/m

TYPE	POWER	L	W	H	H1	P	P1	S	S1	S2
SQH-10	10W	48±1.5	10±1.5	10±1.5	18±1.5	30±1.5	6±1.0	12±1.0	8±1.0	6±1.0
SQH-15	15W	48±1.5	12.5±1.5	12±1.5	21±1.5	32±1.5	6±1.0	12±1.0	8±1.0	6±1.0
SQH-20	20W	63±2.0	12.5±1.5	12±1.5	21±1.5	45±2.0	6±1.0	12±1.0	8±1.0	6±1.0
SQH-30S	30W	63±2.0	12.5±1.5	12±1.5	21±1.5	45±2.0	6±1.0	12±1.0	8±1.0	6±1.0
SQH-30	30W	75±2.5	19±2.0	19±2.0	32±1.5	56±2.0	7.5±1.0	18±1.0	10±1.0	8±1.0
SQH-40	40W	90±3.0	19±2.0	19±2.0	32±1.5	70±2.0	7.5±1.0	18±1.0	10±1.0	8±1.0
SQH-50S	50W	90±3.0	19±2.0	19±2.0	32±1.5	70±2.0	7.5±1.0	18±1.0	10±1.0	8±1.0

SQH : Chassis excluded.

SQHG : Chassis included.

Figure 2

8. ENVIRONMENTAL CHARACTERISTICS

(1) Short-Time Overload

Test Method : 2.5 time RC WV for 5 seconds.

Acceptance Standard : ± (2 %+0.05Ω)

(2) Temperature Coefficient of Resistance

Test Method : -55℃ ~ 125℃

Acceptance Standard : ±300ppm/℃

(3) Insulation Resistance

Test Method : in V-Block

Acceptance Standard : ＞1,000MΩ

(4) Solderbility

Test Method : 260±5℃ for 3±0.5 seconds

Acceptance Standard : 95% min. covering

(5) Resistance to Solvent

Test Method : Trichroethane for 1 min. with ultrasonic

Acceptance Standard : no deterioration of coations and markings

(6) Terminal Strength

Test Method : Direct load for 10 sec. In the direction of the terminal leads

Acceptance Standard :≧ 2.54kg (24.5N)

(7) Pulse overload

Test Method : 3 times RC WV 1000±100 cycles (1 sec. on 25 sec. off)

Acceptance Standard : ±(2%+0.05Ω)

(8) Load Life in Humidity

Test Method : 40±2℃, 90~95% RH at RCWV for 1000 hrs.
(1.5 hrs. on, 0.5 hrs. off)

Acceptance Standard : ± (5%+0.05Ω)

(9) Load Life

Test Method : 70℃ at RCWV for 1000 hrs.
(1.5 hrs. on, 0.5 hrs. off)

Acceptance Standard : ± (5%+0.05Ω)

(10) Temperature Cycling

Test Method : -65℃→room temp.→150℃→room temp.
for 5 cycles

Acceptance Standard : ± (2%+0.05Ω)

(11) Resistance to Soldering Heat

Test Method : Tensile : 350℃ ± 10℃ for 3±0.5 seconds

Acceptance Standard : ± (1%+0.05Ω)

- **Rated continuous Working Voltage (RCWV)**

$$= \sqrt{\textbf{power rating} \times \textbf{resistance value}}$$