



SYNTON-TECH CORPORATION
CEMENT POWER RESISTORS
(SQS TYPE)

File No.:	SQS-02-T
Version :	A
Page :	1/7
Date :	2021.01.01

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!

APPROVED	CHECKED	DESIGNED	REMARK	DOCUMENT NO.
Carol	May	Chen		0201010062



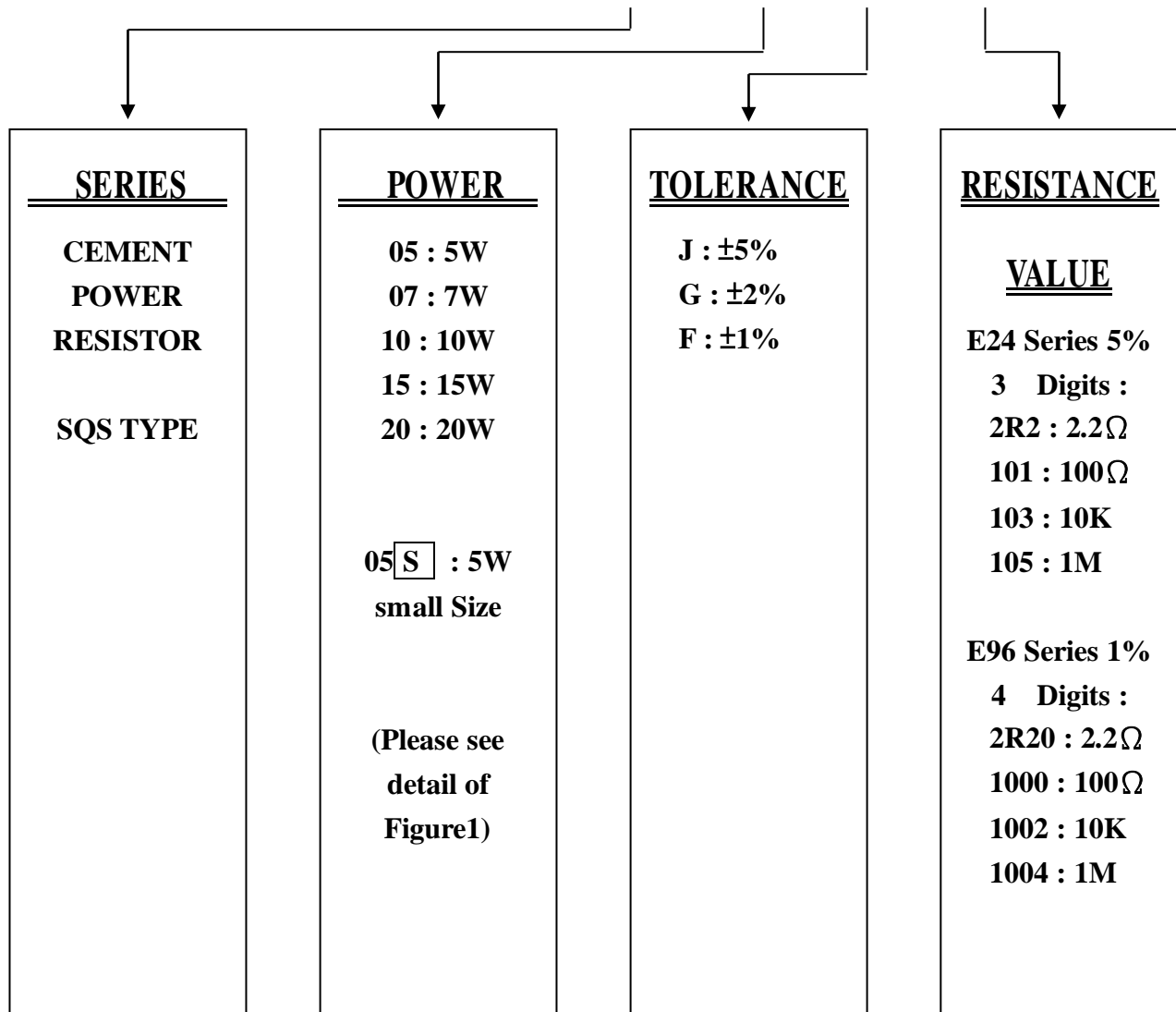
SYNTON-TECH CORPORATION
CEMENT POWER RESISTORS
(SQS TYPE)

File No.:	SQS-02-T
Version :	A
Page :	2/7
Date :	2021.01.01

3. EXPLANATIONS OF ORDERING CODE

DESCRIPTION : SQS 5W 5% 10K

SYNTON CODE : SQS 05 J 103





SYNTON-TECH CORPORATION
CEMENT POWER RESISTORS
(SQS TYPE)

File No.:	SQS-02-T
Version :	A
Page :	3/7
Date :	2021.01.01

4. ELECTRICAL CHARACTERISTICS

STYLE	SQS-05	SQS-07	SQS-10	SQS-15	SQS-20	SQS-30S	SQS-40SS
Power Rating at 70°C	5W	7W	10W	15W	20W	30W	40W
Operating Temp. Range	-55°C ~ +155°C						
Maximum Working Volt.	350V	500V	500V	500V	500V	500V	500V
Maximum Overload Volt.	700V	1000V	1000V	1000V	1000V	1000V	1000V
Dielectric withstanding Volt.	700V	1000V	1000V	1000V	1000V	1000V	1000V
Value Range	SPECIAL	0.01Ω ~ 0.09Ω	0.01Ω ~ 0.09Ω	0.01Ω ~ 0.09Ω	0.01Ω ~ 0.9Ω	0.01Ω ~ 0.9Ω	0.01Ω ~ 0.9Ω
	STANDARD	0.1Ω ~ 50KΩ	0.1Ω ~ 50KΩ	0.1Ω ~ 50KΩ	1Ω ~ 150KΩ	1Ω ~ 150KΩ	1Ω ~ 150KΩ
Temp. Coefficient	±300 PPM / °C special low to ±25PPM , high to ±1500PPM						

Figure 1

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

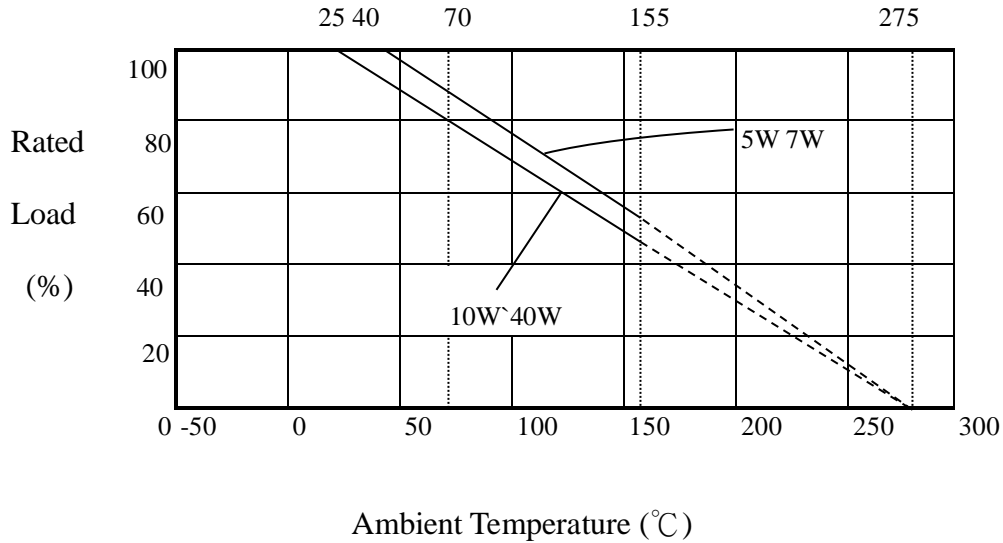
* Non-Inductive type up to 50Ω only.



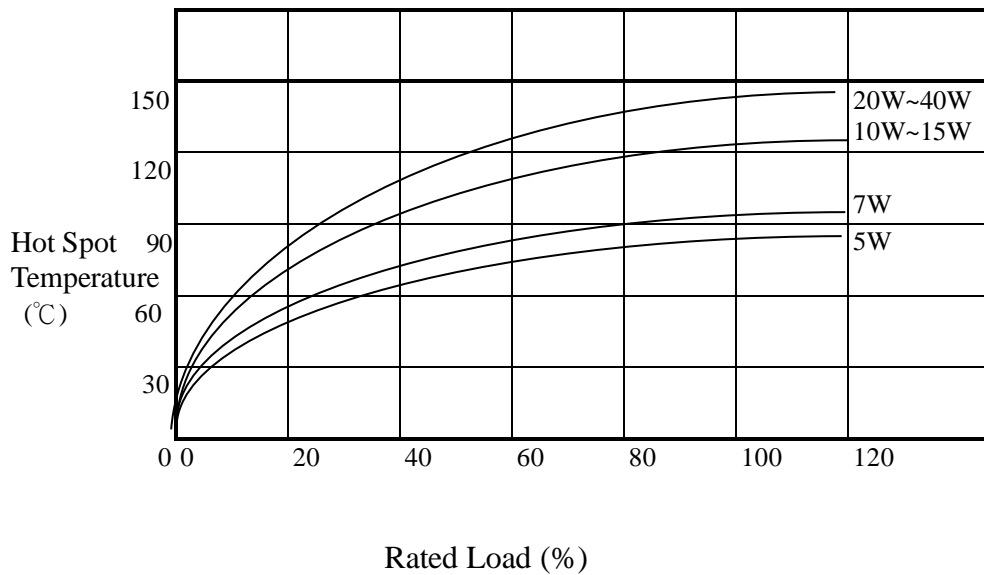
SYNTON-TECH CORPORATION
CEMENT POWER RESISTORS
(SQS TYPE)

File No.:	SQS-02-T
Version :	A
Page :	4/7
Date :	2021.01.01

5. DERATING CURVE



6. HEAT RISE CHART

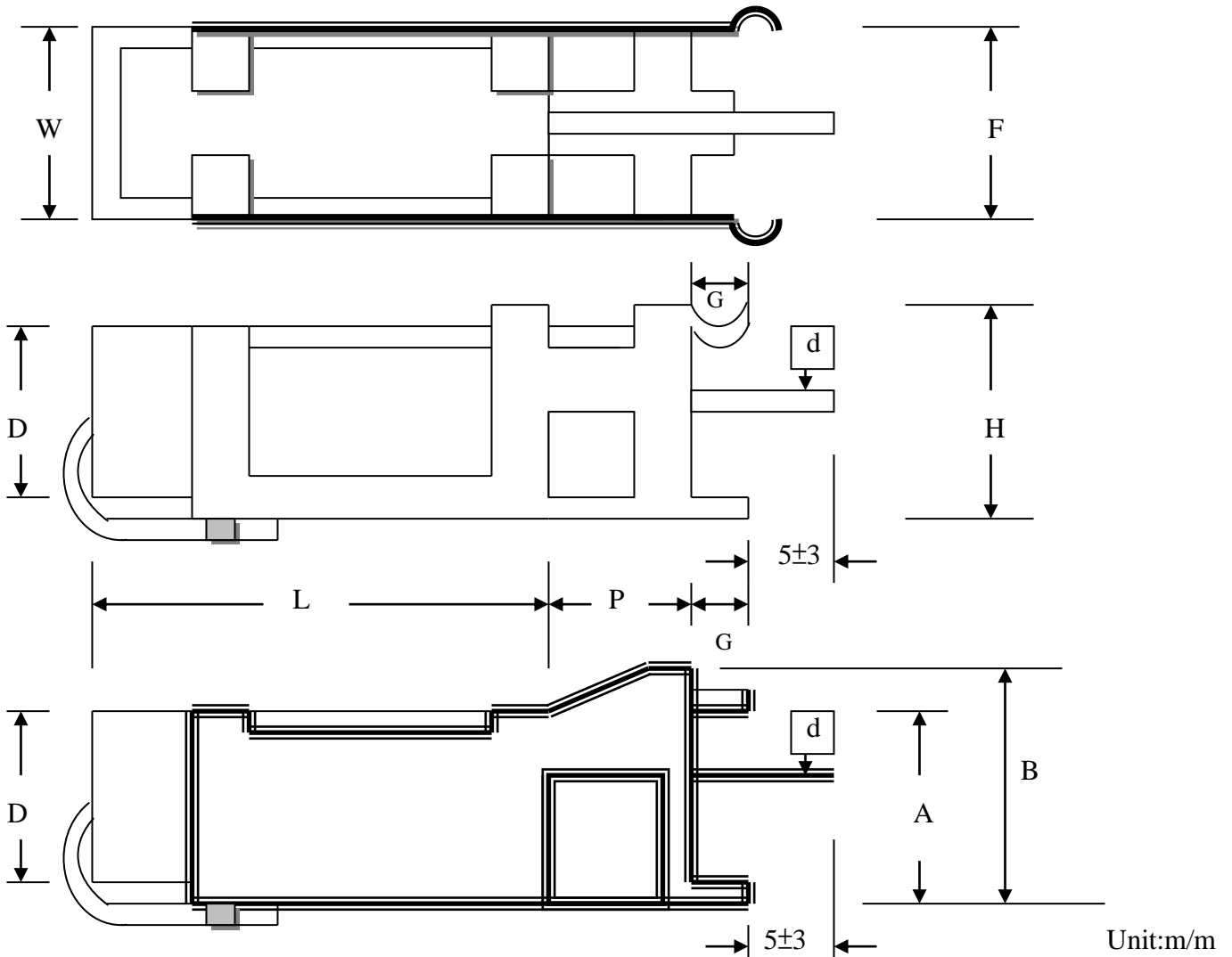




SYNTON-TECH CORPORATION
CEMENT POWER RESISTORS
(SQS TYPE)

File No.: SQS-02-T
 Version : A
 Page : 5/7
 Date : 2021.01.01

7. DIMENSIONS



TYPE	POWER	W ±1.5	D ±1.5	L ±1.5	P ±1.5	d ±0.1	F	H ±1.0	A ±2.0	B ±2.0	G ±1.0
SQS-05	5W	10	9	22	5	0.75	11±1.0	11			4
SQS-07	7W	10	9	35	10	0.75	11±1.0	11			4
SQS-10	10W	10	9	48	10	0.75	11±1.0	11			4
SQS-15	15W	12.5	11.5	48	10	0.75	13±2.0	13			4
SQS-20	20W	14	13.5	60	10	0.75	16±2.0		12.5	18	5
SQS-30S	30W	14	13.5	60	10	0.75	16±2.0		12.5	18	5
SQS-40SS	40W	14	13.5	60	10	0.75	16±2.0		12.5	18	5

Figure 2



SYNTON-TECH CORPORATION
CEMENT POWER RESISTORS
(SQS TYPE)

File No.:	SQS-02-T
Version :	A
Page :	6/7
Date :	2021.01.01

8. ENVIRONMENTAL CHARACTERISTICS

(1) Short-Time Overload

Test Method : 2.5 time RC WV for 5 seconds.

Acceptance Standard : $\pm (2\% + 0.05\Omega)$

(2) Temperature Coefficient of Resistance

Test Method : $-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$

Acceptance Standard : $\pm 300\text{ppm}/^{\circ}\text{C}$

(3) Insulation Resistance

Test Method : in V-Block

Acceptance Standard : $> 1,000\text{M}\Omega$

(4) Solderability

Test Method : $260 \pm 5^{\circ}\text{C}$ 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 coatings and markings

(6) Terminal Strength

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

Acceptance Standard : $\geq 2.54\text{kg} (24.5\text{N})$

(7) Pulse overload

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

Acceptance Standard : $\pm(2\% + 0.05\Omega)$



SYNTON-TECH CORPORATION
CEMENT POWER RESISTORS
(SQS TYPE)

File No.:	SQS-02-T
Version :	A
Page :	7/7
Date :	2021.01.01

(8) Load Life in Humidity

Test Method : $40\pm 2^{\circ}\text{C}$, 90~95% RH at RCWV for 1000 hrs.
(1.5 hrs. on, 0.5 hrs. off)
Acceptance Standard : $\pm (5\% + 0.05 \Omega)$

(9) Load Life

Test Method : 70°C at RCWV for 1000 hrs.
(1.5 hrs. on, 0.5 hrs. off)
Acceptance Standard : $\pm (5\% + 0.05 \Omega)$

(10) Temperature Cycling

Test Method : $-65^{\circ}\text{C} \rightarrow \text{room temp.} \rightarrow 150^{\circ}\text{C} \rightarrow \text{room temp.}$
for 5 cycles
Acceptance Standard : $\pm (2\% + 0.05 \Omega)$

(11) Resistance to Soldering Heat

Test Method : Tensile : $350^{\circ}\text{C} \pm 10^{\circ}\text{C}$ for 3 ± 0.5 seconds
Acceptance Standard : $\pm (1\% + 0.05 \Omega)$

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

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