



SYNTON-TECH CORPORATION

CEMENT POWER RESISTORS (SQP TYPE)

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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		0201010037



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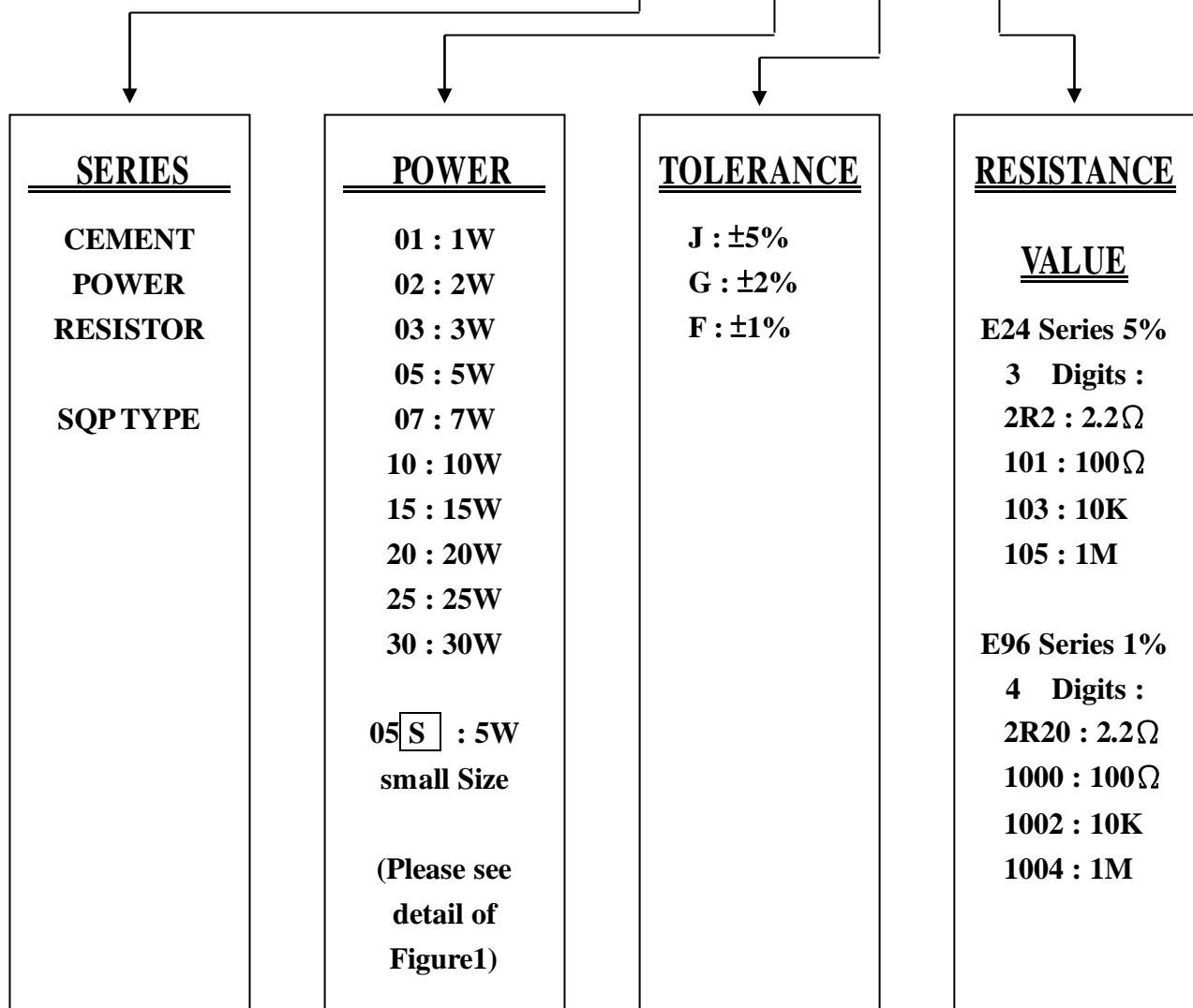
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3. EXPLANATIONS OF ORDERING CODE

DESCRIPTION : SQP 5W 5% 10K

SYNTON CODE : SQP 05 J 103





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4. ELECTRICAL CHARACTERISTICS

TYPE	Power Rating at 70°C	Maximum Working Volt.	Maximum Overload Volt.	Dielectric withstanding Volt.	Value Range	
					SPECIAL	STANDARD
SQP-01	1W	200V	400V	400V	0.01 Ω ~0.09 Ω	0.1 Ω ~10K Ω
SQP-02	2W	250V	500V	500V	0.01 Ω ~0.09 Ω	0.1 Ω ~10K Ω
SQP-03	3W	350V	700V	700V	0.01 Ω ~0.09 Ω	0.1 Ω ~33K Ω
SQP-05S	5W	350V	700V	700V	0.01 Ω ~0.09 Ω	0.1 Ω ~33K Ω
SQP-05	5W	350V	700V	700V	0.01 Ω ~0.09 Ω	0.1 Ω ~50K Ω
SQP-07S	7W	500V	1000V	1000V	0.01 Ω ~0.09 Ω	0.1 Ω ~50K Ω
SQP-07	7W	500V	1000V	1000V	0.01 Ω ~0.09 Ω	0.1 Ω ~50K Ω
SQP-10S	10W	500V	1000V	1000V	0.01 Ω ~0.09 Ω	0.1 Ω ~50K Ω
SQP-10	10W	500V	1000V	1000V	0.01 Ω ~0.09 Ω	0.1 Ω ~50K Ω
SQP-15	15W	500V	1000V	1000V	0.01 Ω ~0.09 Ω	0.1 Ω ~150K Ω
SQP-20	20W	500V	1000V	1000V	0.01 Ω ~0.09 Ω	0.1 Ω ~150K Ω
SQP-25S	25W	500V	1000V	1000V	0.01 Ω ~0.09 Ω	0.1 Ω ~150K Ω
SQP-30SS	30W	500V	1000V	1000V	0.01 Ω ~0.09 Ω	0.1 Ω ~150K Ω
Operating Temp. Range		-55°C ~ +155°C				
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 50 Ω only.

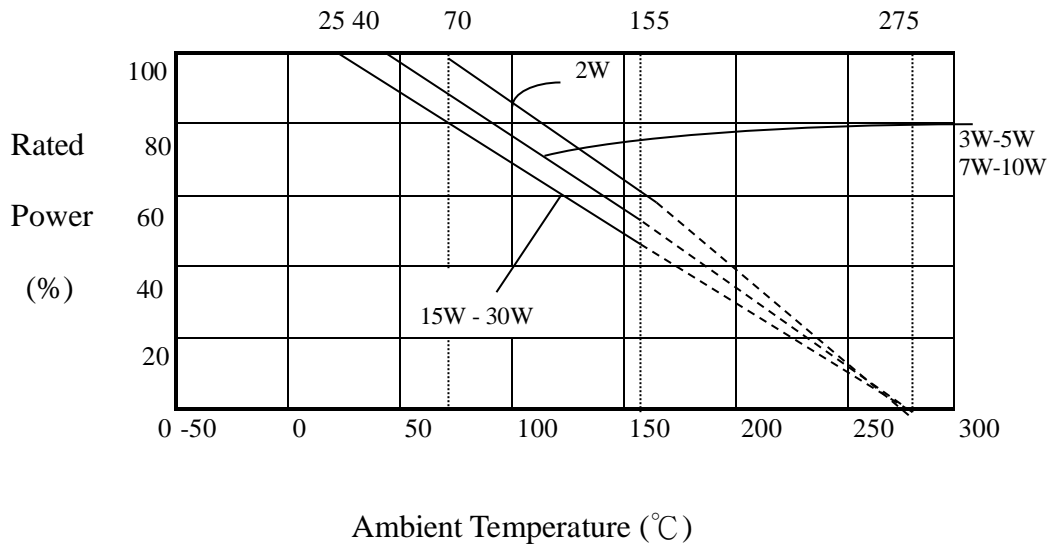


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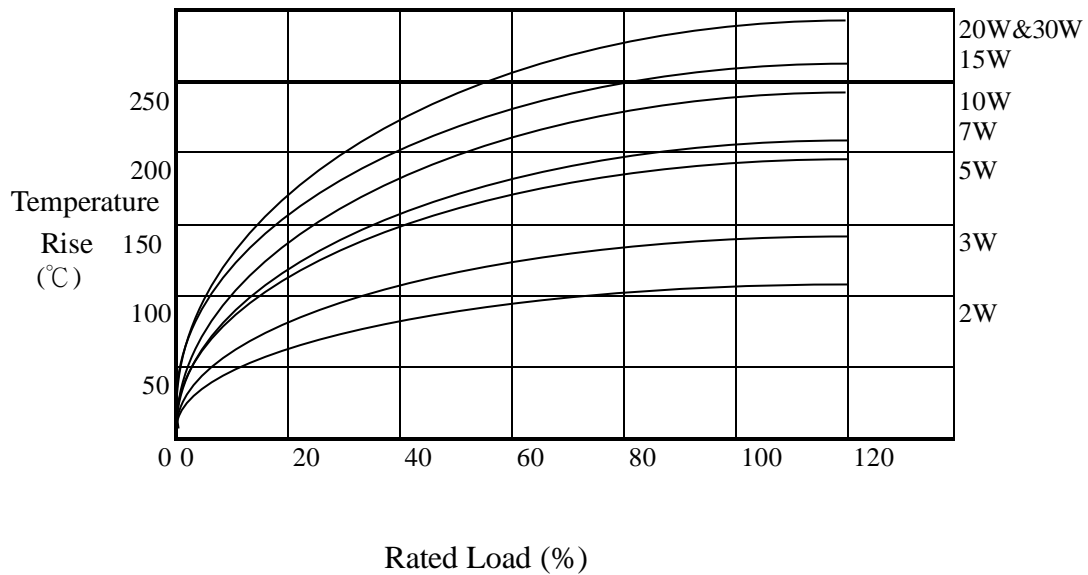
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5. DERATING CURVE



6. TEMPERATURE RISE

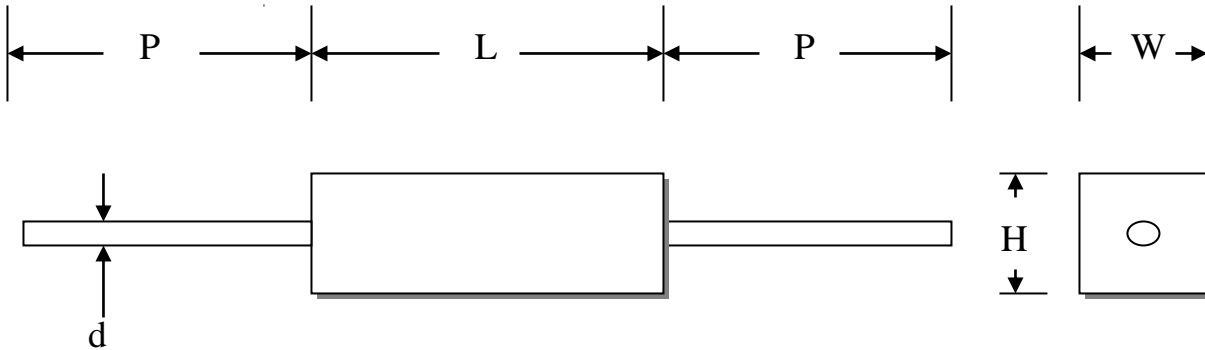




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7. DIMENSIONS



Unit:m/m

TYPE	POWER	L	W	H	d	P
SQP-01	1W	14.0±1.5	6.0±1.5	6.0±1.5	0.75±0.1	20±3
SQP-02	2W	18.0±1.5	7.0±1.5	7.0±1.5	0.75±0.1	30±3
SQP-03	3W	22.0±1.5	8.0±1.5	8.0±1.5	0.75±0.1	30±3
SQP-05S	5W	22.0±1.5	8.0±1.5	8.0±1.5	0.75±0.1	30±3
SQP-05	5W	22.0±1.5	10.0±1.5	9.0±1.5	0.75±0.1	30±3
SQP-07S	7W	22.0±1.5	10.0±1.5	9.0±1.5	0.75±0.1	30±3
SQP-07	7W	35.0±1.5	10.0±1.5	9.0±1.5	0.75±0.1	30±3
SQP-10S	10W	35.0±1.5	10.0±1.5	9.0±1.5	0.75±0.1	30±3
SQP-10	10W	48.0±1.5	10.0±1.5	9.0±1.5	0.75±0.1	30±3
SQP-15	15W	48.0±1.5	12.5±1.5	11.5±1.5	0.75±0.1	30±3
SQP-20	20W	60.0±1.5	14.5±1.5	13.5±1.5	0.75±0.1	30±3
SQP-25S	25W	60.0±1.5	14.5±1.5	13.5±1.5	0.75±0.1	30±3
SQP-30SS	30W	60.0±1.5	14.5±1.5	13.5±1.5	0.75±0.1	30±3

Figure 2



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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 : 4 times RC WV 10000 cycles

(1 sec. on 25 sec. off)

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



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(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)**

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