

# CEMENT RESISTORS

# SQM SERIES

## Feature

- Small size and low cost.
- Super heat dissipation, instant overload capability.
- Instant overload capability
- Standard tolerance:  $\pm 1\%$ ,  $\pm 5\%$
- Standard Value: E24 series as range below
- For high resistance values, metal oxide film rods, will be utilized to replace the wire winding core.
- .Operating temperature :  $-55^{\circ}\text{C} \sim +275^{\circ}\text{C}$

## Material

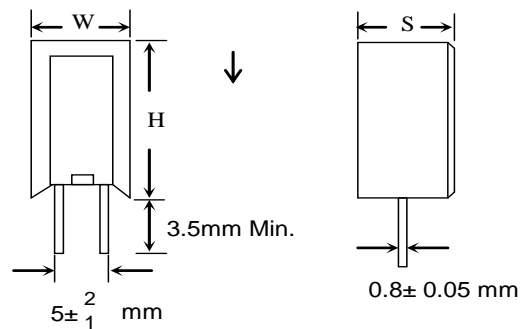
Element: Alloy Resistance Wire

Core: High purity ceramic  $\text{Al}_2\text{O}_3$

Termination: Standard solder-plated copper lead

Case: Ceramic bathtub

## Dimension



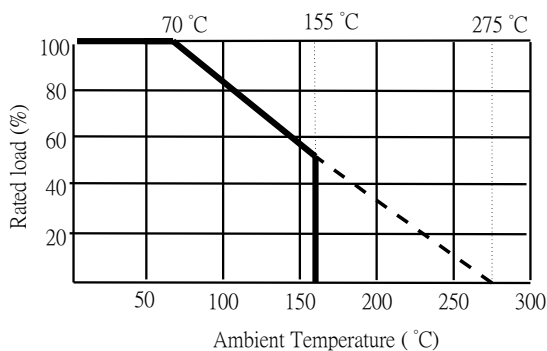
## General Specification

TYPE	DIMENSION(mm)				POWER RATING	MAXIMUM WORKING VOLTAGE	MAXIMUM OVERLOAD VOLTAGE	RESISTANCE RANGE	
	H $\pm 1.5$	W $\pm 1.0$	S $\pm 1.0$	d $\pm 0.05$				WIREWOUND	MOR RODS
SQM20	20.0	11.5	7.0	0.8	2W	500V	1000V	0.1 $\Omega$ -80 $\Omega$	81 $\Omega$ -1M $\Omega$
SQM30	25.0	12.5	8.5	0.8	3W	500V	1000V	0.1 $\Omega$ -100 $\Omega$	101 $\Omega$ -1M $\Omega$
SQM50	25.4	13.0	9.0	0.8	5W	750V	1500V	0.1 $\Omega$ -100 $\Omega$	101 $\Omega$ -1M $\Omega$
SQM70	39.0	13.0	9.0	0.8	7W	1000V	1500V	0.1 $\Omega$ -300 $\Omega$	301 $\Omega$ -47K $\Omega$
SQM100	51.0	13.0	9.0	0.8	10W	1000V	1500V	0.1 $\Omega$ -600 $\Omega$	601 $\Omega$ -47K $\Omega$

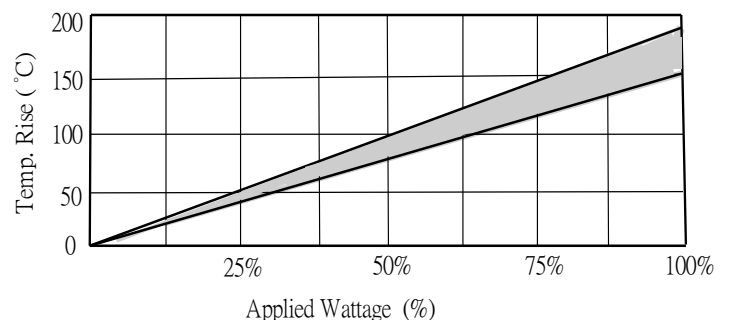
\* Maximum Working Voltage determined by  $E = \sqrt{P \cdot R}$ , where E should not exceed value listed in column above.

\*\*Maximum Overload Voltage equals to 2.5XE, but should not exceed value listed in column above.

## Derating Curve



## Temperature Rise



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## Characteristics

Item	Requirement	Test Method
Short Time Overload	$\pm 2\% + 0.05 \Omega$	JIS-C-5201-1 5.5 RCWV*2.5 or Max. overload voltage for 5 seconds
Insulation Resistance	$> 1000M \Omega$	JIS-C-5201-1 5.6 Apply 100VDC for 1 minute
Endurance	$\pm 5\% + 0.05 \Omega$	JIS-C-5201-1 7.10 70 $\pm$ 2 $^{\circ}$ C, Max. RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5hrs "OFF"
Damp Heat with Load	$\pm 5\% + 0.05 \Omega$	JIS-C-5201-1 7.9 40 $\pm$ 2 $^{\circ}$ C, 90~95% R.H. RCWV for 1000 hrs with 1.5 hrs "ON" and 0.5hrs "OFF"
Solderability	90% min. Coverage	JIS-C-5201-1 6.5 245 $\pm$ 5 $^{\circ}$ C for 3 seconds
Dielectric Withstanding Voltage	1000V	JIS-C-5201-1 5.7 Apply Max. Overload Voltage for 1 minute
Temperature Coefficient	$\pm 300PPM/^{\circ}C$	Resistance value at room temperature and room Temperature+100 $^{\circ}$ C
Pulse Overload	$\pm 1\% + 0.05 \Omega$	JIS-C-5201-1 5.8 4 times RCWV for 10000 cycles with 1 second "ON" and 25 seconds "OFF"
Resistance To Solvent	No deterioration of coatings and markings	JIS-C-5201-1 6.9 Trichroethane for 1 min. with ultrasonic
Terminal Strength	Tensile: $\geq 2.5$ kg	Direct Load for 10 seconds In the direction off the terminal leads
Shelf Life	$\Delta R = \pm 0.1\%$	12 months at room temperature 25 $\pm$ 3 $^{\circ}$ C, 80%RH Max.

**\*Storage Temperature : 25 $\pm$ 3 $^{\circ}$ C ; Humidity < 80%RH**

## Part Numbering

<b><u>SQM50</u></b>	<b><u>J</u></b>	<b><u>B</u></b>	-	<b><u>100R</u></b>
↓	↓	↓		↓
Type/Power	Tol.	Package		Resistance
SQM20	F= $\pm$ 1%	B=Bulk		0R1 = 0.1 $\Omega$
SQM30	J= $\pm$ 5%			10R = 10 $\Omega$
SQM50				1K2R = 1.2K $\Omega$
SQM70				
SQM100				