

## **Type SQ Series**

### **Key Features**

- Choice of Styles
- Bracketed Types Available
- Temp. Op. -55°C to +250°C
- Wide Value Range
- Stable TCR 300ppm/°C
- Custom Designs Welcome
- Inorganic Flame Proof Construction

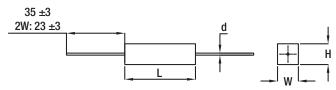


This flexible range of Power Wirewound Resistors either have wire or power oxide film elements. The SQ series resistors are wound or deposited on a fine non - alkali ceramic core then embodied in a ceramic case and sealed with an inorganic silica filler. This design provides a resistor with high insulation resistance, low surface temperature, excellent T.C.R., and entirely fire proof construction. These resistors are ideally suited to a range of areas where low cost, and efficient thermal performance are important design criteria. Metal film cores adjusted by laser spiral are used where the resistor value is above that suited to wire. Similar performance is obtained although short time overload is slightly derated.

#### **Characteristics - Electrical**

	Test Condition	Performance
Resistance Temp. Coefficient:	-55°C ~ 155°C	± 300ppm/°C
*Short Time Overload:	10 times rated power for 5 seconds	± 2%
Rated Load:	Rated power for 30 minutes	± 1%
Voltage Withstand:	1000V AC 1 minute	no change
Insulation Resistance:	500V megger	1000 Meg
Temperature Cycle:	-30°C ~ 85°C for 5 cycles	± 1%
Load Life:	70°C on-off cycle for 1000 hours	± 5%
Moisture-proof Load Life:	40°C 95% RH on-off cycle 1000 hours	± 5%
Incombustability:	16 times rated wattage for 5 minutes	No flame
Max. Overload Voltage:	2 times max. working voltage	
*Metal Film Elements:	Short time overload 5 times rated power, 5 se	econds

#### **Type SQP - Horizontal**



Power		D	imensio	าร		Resistance Range Max.				
Rating	W ± 1	H±1	L ± 1.5	d ± 0.05	l ± 0.3	Wire	Metal Film	Voltage		
2W	7	7	18	0.65	23	R10 - 82R	83R - 10K	150V		
ЗW	8	8	22	0.8	35	R10 - 180R	181R - 33K	350V		
5W	10	9	22	0.8	35	R10 - 180R	181R - 100K	350V		
7W	10	9	35	0.8	35	R10 - 430R	431R - 100K	500V		
10W	10	9	48	0.8	35	R10 - 470R	471R - 100K	750V		
15W	12.5	11.5	48	0.8	35	R50 - 600R	601R - 150K	1000V		
20W - 25W	14	13.5	60	0.8	35	R50 - 1K0	1.1K - 150K	1000V		

Rated Continuous Working Voltage (RCWV)

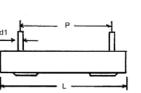
RCWV: \sqrt{Reted Power x Resistance Value or Maximum Working Voltage listed above whichever is lower

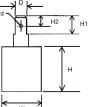
Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are standard equivalents. Dimensions are shown for reference purposes only. Specifications subject to change.



# **Type SQ Series**

# Type SQH - Horizontal with **Faston Connectors**

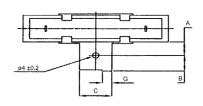




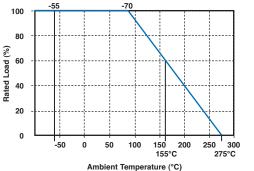
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Power		Dimensions								Resistance Range		
Rating	W ± 1	H±1	L ± 1.5	Р	H1±1	D±0.5	P1±0.2	P2±0.2	Wire	Metal Film		
10W	10	10	48	32 ±1	21	5	2.5	1.7	R50 - 600R	601R - 50K		
15W	12.5	11.5	48	32 ±1	21	5	2.5	1.7	1R0 - 600R	601R - 50K		
20W	14.5	13.5	60	42 ±1	24	6	3.0	2.5	1R0 - 1K0	1K1 - 50K		
30W	19	19	75	55 ±2	31	7.5	-	-	1R0 - 2K0	-		
40W	19	19	90	67 ±2	31	7.5	_	_	1R0 - 2K0	_		

### Type SQB - Horizontal with Faston **Connectors and Bracket**

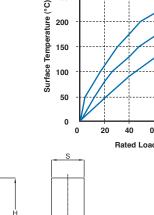
Power		Dimen	sions	
Rating	A ± 0.5	B ± 0.5	C ± 0.5	G ± 0.5
10W	8.0	5.0	12.0	3.0
15W	8.0	5.5	12.0	3.0
20W	8.0	5.5	12.0	3.0
30W	10.5	8.0	18.0	3.5
40W	10.5	8.0	18.0	3.5



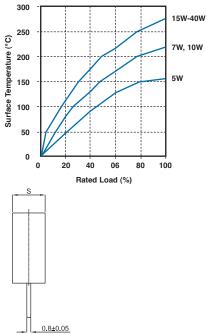
**Power Derating Curve** 



**Type SQM - Vertical** 



Load Against Temperature



Power Rating		Dimer	nsions		Resistan	ce Range
	W ± 1	H±1	S ± 1.5	P ± 2.0	Wire	Metal Film
2W	11	20	7	5	R10 - 82R	83R - 10K
ЗW	12	25	8	5	R10 - 180R	181R - 33K
5W	13	25	9	5	R10 - 180R	181R - 100
7W	13	39	9	5	R10 - 430R	431R - 100
10W	13	51	9	5	R10 - 470R	471R - 100
10WS	16	35	12	7.5	R10 - 360R	361R - 100

3.5±1

 $P_{\pm}^{2}$ 

N.B. Custom design versions in wire at low tolerances, better T.C.R., and higher ohmic values are available to special order. Please enquire.

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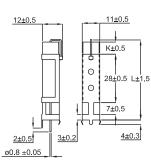
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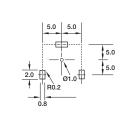
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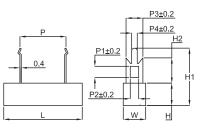




Suggested PCB Layout Plan

Power	Dim	ension	Resistar	ice Range
Rating L ± 1.5 K ± 0.5		K ± 0.5	Wire	Metal Film
7W	48	8.5	R10 - 430R	431R - 100K
10W	60	20	R10 - 470R	471R - 100K

### Type SQZ - Horizontal Pluggable



Power	er Dimensions										Resistance Range		
Rating	W±1	H±1	L±1.5	P±1.5	P1	P2	P3	P4	H1±1	H2±1	Wire	Metal Film	
5W	10	10	28	15	4.2	2	5	1.5	25	10.5	R10 - 130R	131R - 100K	
7W	10	10	36	20	4.2	2	5	1.5	25	10.5	R10 - 430R	431R - 100K	
10W	10	10	48	32	4.2	2	5	1.5	25	10.5	R20 - 470R	471R - 100K	
15W	12.5	12	48	32	4.2	2	5	1.5	26	10.5	1R0 - 600R	601R - 150K	
20W-25W	* 15	13	60	42	7	6	10	2.7	36	15.0	1R0 - 1K0	1K1 - 150K	

\*NB: 20W & 25W Devices Terminations are not crimped

### **Type SQZ - Recommended PCB Hole Dimensions**

#### How to Order

SQP	W	20	1R0	F
<b>Common Part</b>	Element	Rated Power	Resistance Value	Resistance Tolerance
SQP - Axial Type SQZ - Pluggable Type		2 - 2 Watts	0.1 ohm (1 milliohm) R10	F - ±1%
SQM - Vertical Type SPS - Vertical Type	W - Wire	3 - 3 Watts	1 ohm (1000 milliohms) 1R0 1K ohm	G - ±2%
SQH - Horizontal Type SQB - Horizontal Type (with bracket)	R - Metal Film	5 - 5 Watts etc	(1000 ohms) 1K0 1M ohm (1000000 ohms) 1M0	J - ±5% K - ±10%

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