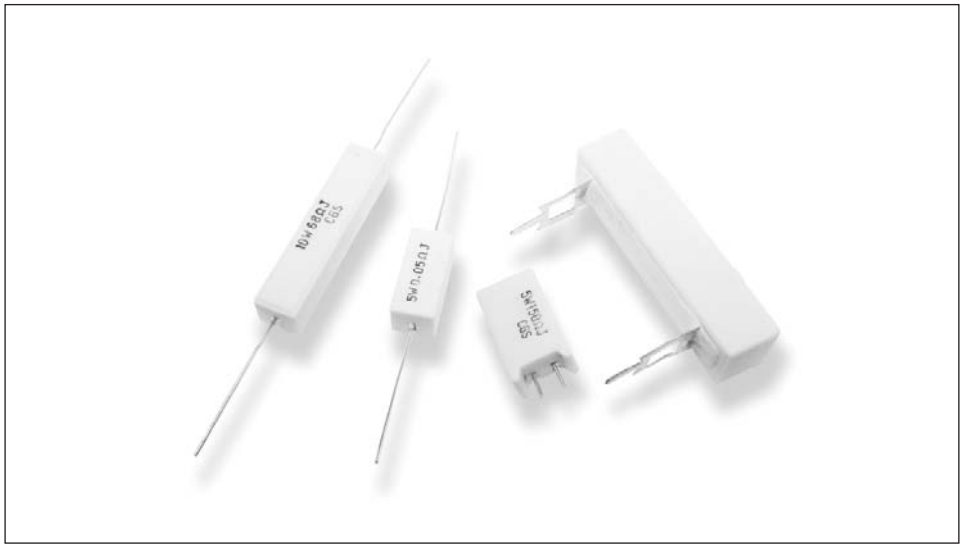
Type SQ Series

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

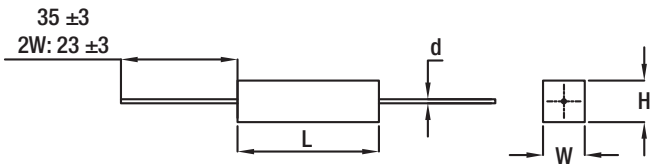


This flexible range of Power Wirewound Resistors either have wire or power oxide film elements. The SQ series resistors are wound or deposited on a fine non - alkali ceramic core then embodied in a ceramic case and sealed with an inorganic silica filler. This design provides a resistor with high insulation 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 seconds	

Type SQP - Horizontal



Power Rating	Dimensions					Resistance Range		Max. Working Voltage
	W ± 1	H ± 1	L ± 1.5	d ± 0.05	l ± 0.3	Wire	Metal Film	
2W	7	7	18	0.65	23	R10 - 82R	83R - 10K	150V
3W	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

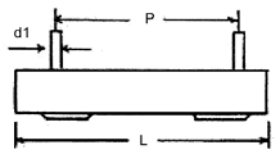
Rated Continuous Working Voltage (RCWV)
RCWV: √Rated Power x Resistance Value or Maximum Working Voltage listed above whichever is lower

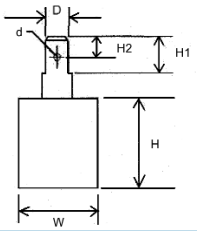
Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are standard equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

Type SQ Series

Type SQH - Horizontal with Faston Connectors

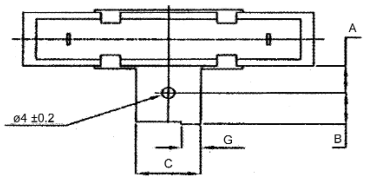




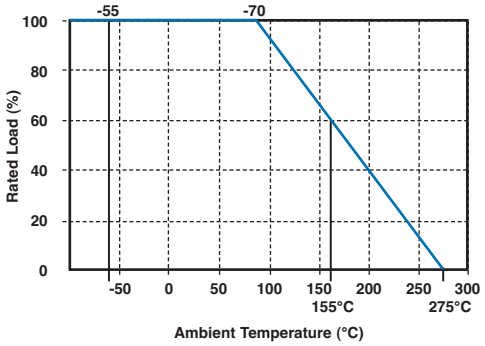
Power Rating	Dimensions								Resistance Range	
	W ± 1	H ± 1	L ± 1.5	P	H1± 1	D±0.5	P1±0.2	P2±0.2	Wire	Metal Film
10W	10	10	48	32 ±1	21	5	2.5	1.7	R50 - 600R	601R - 50K
15W	12.5	11.5	48	32 ±1	21	5	2.5	1.7	1R0 - 600R	601R - 50K
20W	14.5	13.5	60	42 ±1	24	6	3.0	2.5	1R0 - 1K0	1K1 - 50K
30W	19	19	75	55 ±2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

Type SQB - Horizontal with Faston Connectors and Bracket

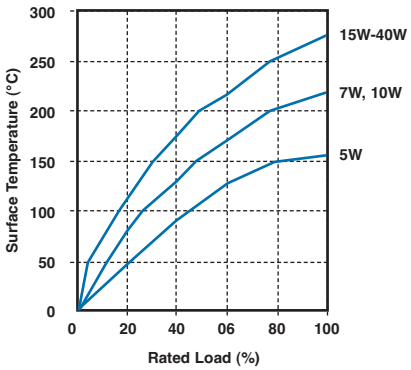
Power Rating	Dimensions			
	A ± 0.5	B ± 0.5	C ± 0.5	G ± 0.5
10W	8.0	5.0	12.0	3.0
15W	8.0	5.5	12.0	3.0
20W	8.0	5.5	12.0	3.0
30W	10.5	8.0	18.0	3.5
40W	10.5	8.0	18.0	3.5



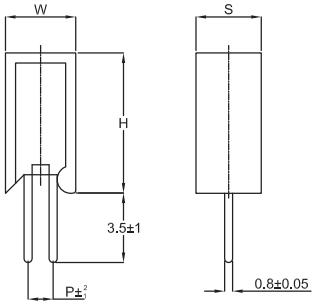
Power Derating Curve



Load Against Temperature



Type SQM - Vertical



Power Rating	Dimensions				Resistance Range	
	W ± 1	H ± 1	S ± 1.5	P ± 2.0	Wire	Metal Film
2W	11	20	7	5	R10 - 82R	83R - 10K
3W	12	25	8	5	R10 - 180R	181R - 33K
5W	13	25	9	5	R10 - 180R	181R - 100K
7W	13	39	9	5	R10 - 430R	431R - 100K
10W	13	51	9	5	R10 - 470R	471R - 100K
10WS	16	35	12	7.5	R10 - 360R	361R - 100K

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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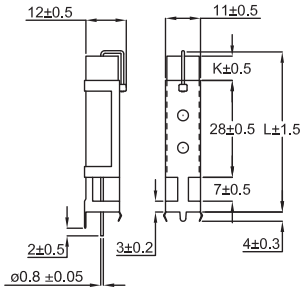
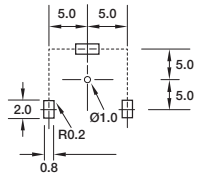
Type SPS - Vertical Mounting with Stabilising Bracket

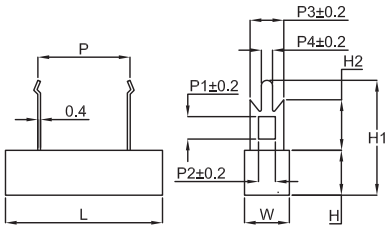




Suggested PCB Layout Plan

Power Rating	Dimension		Resistance Range	
	L ± 1.5	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

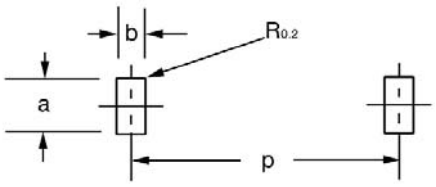


Power Rating	Dimensions										Resistance Range	
	W±1	H±1	L±1.5	P±1.5	P1	P2	P3	P4	H1±1	H2±1	Wire	Metal Film
5W	10	10	28	15	4.2	2	5	1.5	25	10.5	R10 - 130R	131R - 100K
7W	10	10	36	20	4.2	2	5	1.5	25	10.5	R10 - 430R	431R - 100K
10W	10	10	48	32	4.2	2	5	1.5	25	10.5	R20 - 470R	471R - 100K
15W	12.5	12	48	32	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

Power Rating	a	b	p
5W	2.0	0.8	15
7W	2.0	0.8	20
10W	2.0	0.8	32
15W	2.0	0.8	32
20W_25W	3.5	1.0	42



How to Order

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

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