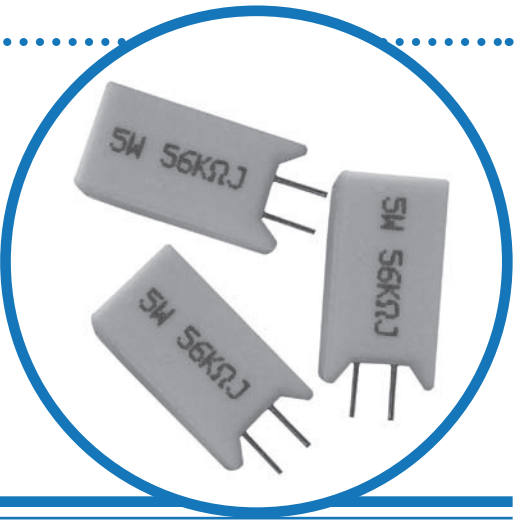
Radial Ceramic Case Resistors Wirewound / Metal Oxide

SQM / CVF / CVW Series

- **2 to 10 watts**
- **Resistance 0R1 to 200K**
- **High overload capability**
- **Flameproof case**
- **Small PCB footprint**
- **RoHS compliant**

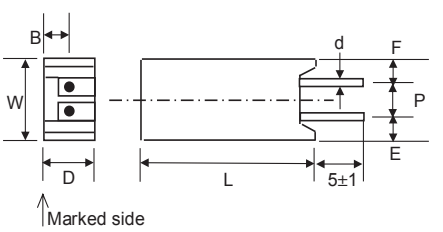


Electrical Data

		SQM2 / CV-2	SQM3 / CV-3	SQM5 / CV-5	SQM7 / CV-7	SQM10 / CV-10
Power rating at 70°C	watts	2	3	5	7	10
Resistance range – wirewound (CVW)	ohms	0R1 - 27R	0R1 - 39R	0R1 - 47R	0R1 - 680R	0R1 - 910R
Resistance range – oxide (CVF)	ohms	30R – 33K	43R – 56K	51R – 100K	750R - 200K	1K0 - 200K
Limiting element voltage	volts dc or ac rms	150	300	350	500	750
Thermal impedance	°C/watt	50	45	30	28	23
Isolation voltage	volts	1000				
TCR	ppm/°C	<20R: ± 400, ≥20R: ± 350				
Resistance Tolerance	%	± 5 ± 10				
Standard Values		E24				
Ambient temperature range	°C	-55 to +155ºC				

Physical Data (all dimensions in mm, weights in g)

Type	L ± 1.0	W ± 1.0	D ± 1.0	B ± 1.0	E ± 1.0	F ± 1.0	P ± 1.0	d ±0.05	Weight Nom.
SQM2 / CV-2	20	11.5	7.5	4.5	3.0	3.0	5	0.7	4.3
SQM3 / CV-3	25	12.5	8.5	4.5	4.0	4.0	5	0.7	5.6
SQM5 / CV-5	25	12.5	9	5.0	3.5	3.5	5	0.8	6.3
SQM7 / CV-7	38	12.5	9	5.0	2.75	5.0	5	0.8	10.7
SQM10/ CV-10	50	12.5	9	4.25	2.75	5.0	5	0.8	13.4



Construction

A high purity ceramic rod, with force fit end caps onto which is wound a wire element: or a deposited metal oxide film (depending on value). The element is fitted into a ceramic case with fireproof insulation cement.

General Note

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Termination Details:

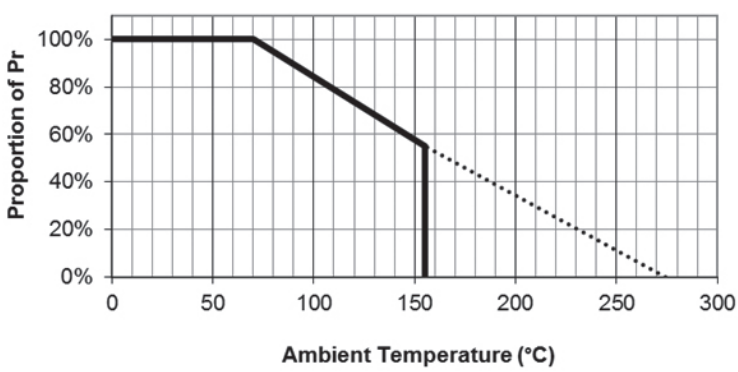
Material	The 100% Sn finish copper lead wires are internally welded to the resistance element end caps.
Solderability	The terminations meet the requirements of IEC 115-1 Clause 4.17.3.2
Strength	The terminations meet the requirements of IEC 86.2.21

Marking: Type reference, resistance value and tolerance are legend marked onto the upper surface.
Flammability: The resistor will not burn under any condition of applied temperature or overload.
Solvent resistance: The body protection and marking are resistant to all normal industrial solvents suitable for printed circuits.

Performance Data

		Maximum
Load at rated power (1000hrs at 70°C)	ΔR	<100K: 5% ≥100K: 10%
Derating from rated power at 70°C		See Graph
short term overload (lesser of 6.25 x Pr or 2.5 x LEV for 5s)	ΔR	5% +0.05Ω
Damp heat steady state (56 days, 40°C, ≥90% RH)	ΔR	5% +0.05Ω
Temperature rapid change (5 cycles -55ºC to +155ºC)	ΔR	2% +0.05Ω
Resistance to solder heat	ΔR	1% +0.05Ω
Voltage Proof (1kV for 60s)		No evidence of flashover, mechanical damage, arcing or insulation breakdown
Solderability		Min. 95% coverage

Temperature Derating



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Ordering Procedure

This product has two valid part numbers:

European (Welwyn) Part Number: SQM3-1K2JB3 (SQM3, 1.2 kilohms ±5%, Pb-free)

S	Q	M	3	-	1	K	2	J	B	3
1					2			3	4	

1 Type	2 Value	3 Tolerance	4 Packing & Termination Finish		
SQM2, SQM3, SQM5, SQM7 SQM10,	E24 = 3/4 characters R = ohms K = kilohms	J = ±5%	Pb-free only		
		K = ±10%	B3	SQM2, SQM3	3000/box
			B2	SQM5	2000/box
			B1	SQM7, SQM10	1000/box

USA (IRC) Part Number: CVF31201JLF (CVF3, 1.2 kilohms ±5%, Pb-free)

C	V	F	3	1	2	0	1	J	L	F
1			2	3				4	5	

1 Type	2 Size	3 Value	4 Tolerance	5 Termination Finish	Packing	
CVF, CVW	2	3 digits + multiplier R = ohms for values <100 ohms	J = ±5%	LF = Pb-free	2, 3	3000/box
	3		K = ±10%		5	2000/box
	5				7, 10	1000/box
	7					
	10					

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