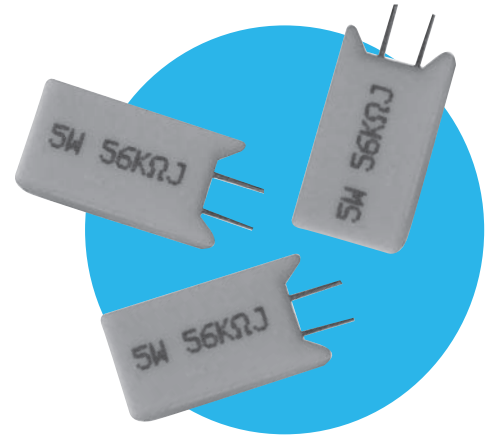



## Radial Ceramic Case Resistors Wirewound / Metal Oxide

### SQM / CVF / CVW Series

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



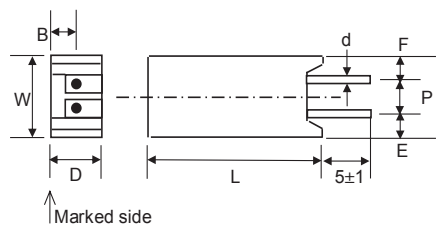
 All parts are Pb-free and comply with EU Directive 2011/65/EU (RoHS2)

### 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 +155°C				

### 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

TT Electronics reserves the right to make changes in product specification without notice or liability.  
All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

**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.

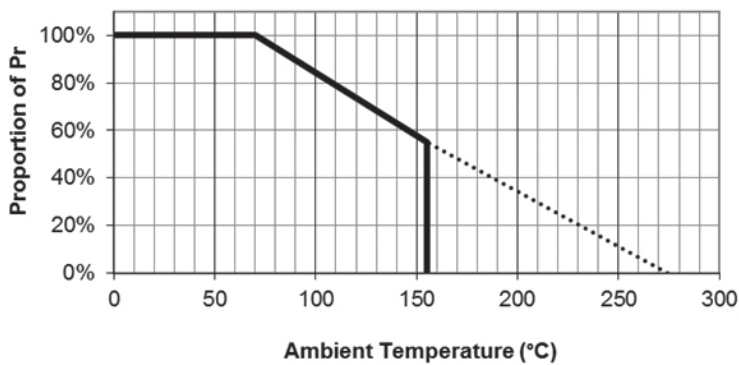
**Flammability:** The resistor will not burn under any condition of applied temperature or overload.

**Solvent resistance:** The body protection and marking are resistant to all normal industrial solvents suitable for printed circuits.

**Performance Data**

		<b>Maximum</b>
Load at rated power (1000hrs at 70°C)	$\Delta R$	<100K: 5% $\geq$ 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)	$\Delta R$	5% +0.05 $\Omega$
Damp heat steady state (56 days, 40°C, $\geq$ 90% RH)	$\Delta R$	5% +0.05 $\Omega$
Temperature rapid change (5 cycles -55°C to +155°C)	$\Delta R$	2% +0.05 $\Omega$
Resistance to solder heat	$\Delta R$	1% +0.05 $\Omega$
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  $\pm 5\%$ , 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 = $\pm 5\%$	Pb-free only		
		K = $\pm 10\%$	B3	SQM2, SQM3	3000/box
			B2	SQM5	2000/box
			B1	SQM7, SQM10	1000/box

**USA (IRC) Part Number: CVF31201JLF** (CVF3, 1.2 kilohms  $\pm 5\%$ , 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 = $\pm 5\%$	LF = Pb-free	2, 3	3000/box
	3		K = $\pm 10\%$		5	2000/box
	5				7, 10	1000/box
	7					
	10					

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