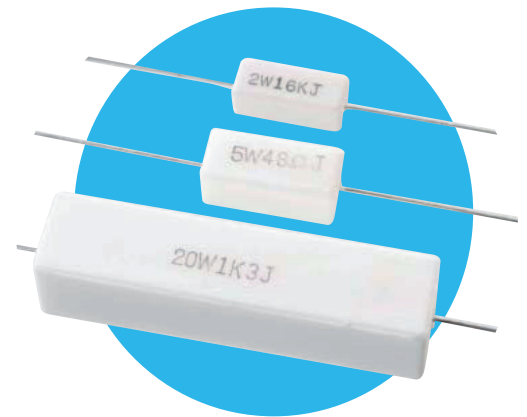



## Ceramic Case Resistors – Wirewound / Metal Oxide

### SQP / CAF / CAW Series

- 2 watts to 25 watts
- Resistance 0R1 to 200K
- High overload capability
- RoHS compliant
- Flameproof ceramic case with inorganic potting material



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

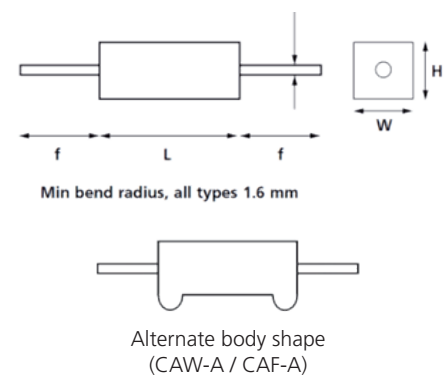
### Electrical Data

	SQP2 / CA-2	SQP3 / CA-3	SQP5 / CA-5	SQP7 / CA-7	SQP7S	SQP10 / CA-10	SQP15 / CA-15	SQP20 / CA-20	CAW25	
Power rating at 70°C	watts	2	3	5	7	7	10	15	20	25
Resistance range – wirewound (CAW)	ohms	0R1-27R	0R1-39R	0R1-47R	0R1-680R	1R0-100R	0R1-910R	1R0-1K0	2R0-1K2	2R0-1K2
Resistance range – oxide (CAF)	ohms	28R-120K	40R-150K	48R-150K	681R-200K	101R-150K	911R-200K	1K1-200K	1K3-200K	-
Resistance tolerance	%	5, 10								
TCR	ppm/°C	<20R: 400 ≥20R: 350								
Isolation voltage	volts	1000								
Standard values		E24 preferred								
Thermal impedance	°C/W	50	45	30	26	26	21	16	12	10
Ambient temperature range	°C	-55 to +155								

No Limiting Element Voltage applies to this series; the Rated Voltage is  $\sqrt{P \cdot R}$ .

### Physical Data

Type	Dimensions (mm) and weight (g)					
	L max.	W max.	H max.	f min.	d (±0.1)	Wt. nom.
SQP2 / CA-2	19	8	8	23	0.7	2.2
SQP3 / CA-3	23	9	9	27	0.7	3.5
SQP5 / CA-5	23	11	10	30	0.75	5
SQP7 / CA-7	36	11	10	30	0.75	8.2
SQP7S	26	10	10	30	0.75	6
SQP10 / CA-10	50	11	10	30	0.75	11
SQP15 / CA-15	50	13.5	12.5	30	0.75	17.4
SQP20 / CA-20	61	15.5	14.5	30	0.75	25
CAW25	65	15.5	14.5	30	0.75	26.7



Min bend radius, all types 1.6 mm

Alternate body shape (CAW-A / CAF-A)

#### 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.

**SQP / CAF / CAW Series**

**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.

**Termination Details**

**Material** The tinned copper lead wires are internally welded to the resistance element end caps.

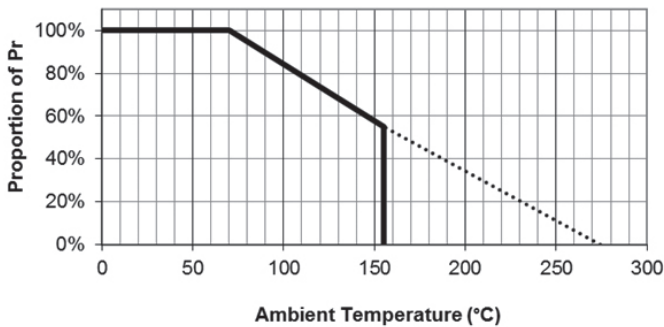
**Solderability** The terminations meet the requirements of IEC 115-1 Clause 4.17.3.2

**Strength** The terminations meet the requirements of IEC 86.2.21

**Performance Data**

		<b>Maximum</b>
Load at rated power (1000hrs at 70°C)	ΔR%	≤100K: 5% +0.05Ω, >100K: 10%
Derating from rated power at 70°C		See Graph
Short term overload (6.25xPr for 5s)	ΔR%	2% +0.05Ω
Damp heat steady state (56 days, 40°C, ≥90% RH)	ΔR%	2% +0.05Ω
Temperature rapid change	ΔR%	2% +0.05Ω
Resistance to solder heat	ΔR%	1% +0.05Ω
Pulse handling		Data available by request

**Temperature Derating**



**Marking**

Type reference, resistance value and tolerance are legend marked onto the upper surface.

**Flammability**

The resistor will not burn or emit incandescent particles under any condition of applied temperature or overload.

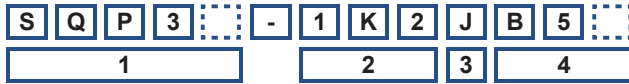
**General Note**

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## Ordering Procedure

This product has two valid part numbers:

**European (Welwyn) Part Number: SQP3-1K2JB5** (SQP3, 1.2 kilohms  $\pm 5\%$ , Pb-free)



1 Type	2 Value	3 Tolerance	4 Packing & Termination Finish			
SQP2, SQP3, SQP5, SQP7 SQP7S, SQP10, SQP15, SQP20	E24 = 3/4 characters R = ohms K = kilohms	J = $\pm 5\%$	Pb-free only			
		K = $\pm 10\%$	B5	SQP2	3600/box	
		SQP3		3000/box		
		SQP5		2400/box		
				B15	SQP7	1800/box
			SQP7S		2400/box	
			SQP10		1500/box	
				B1	SQP15	840/box
					SQP20	720/box

**USA (IRC) Part Number: CAF31201JLF** (CAF3, 1.2 kilohms  $\pm 5\%$ , Pb-free)



1 Type	2 Size	3 Body Shape	4 Value	5 Tolerance	6 Termination Finish	Packing	
CAF, CAW	2	Omit for standard	3 digits + multiplier R = ohms for values <100 ohms	J = $\pm 5\%$	LF = Pb-free	2	3600/box
	3	A= Alternate (2, 5, 7 & 10W only)		K = $\pm 10\%$		3	3000/box
	5		5	2400/box			
	7		7	1800/box			
	10		10	1500/box			
	15		15	840/box			
	20	20	720/box				
CAW	25						

**General Note**

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