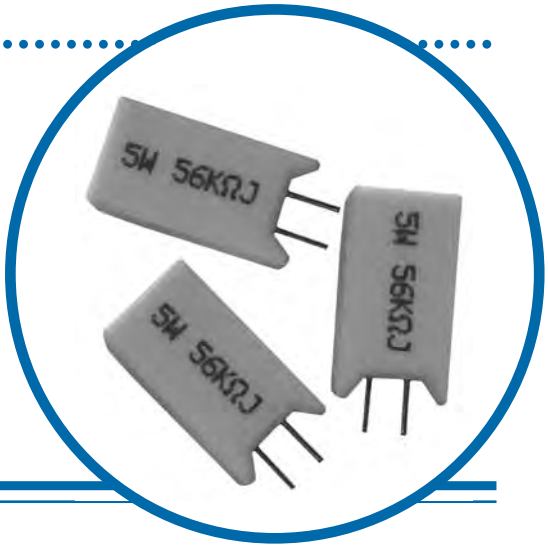
Radial Ceramic Case Resistors
Wirewound / Metal Oxide

TT electronics
Welwyn Components

SQM Series

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

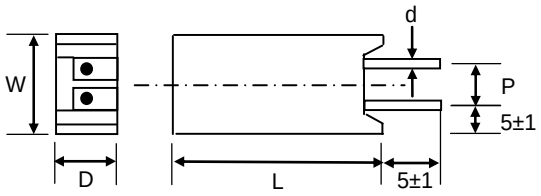


Electrical Data

		SQM2	SQM3	SQM5	SQM7	SQM10
Power rating at 70°C	watts	2	3	5	7	10
Resistance range ohms	**Wirewound**	0R1 - 27R	0R1 - 39R	0R1 - 47R	0R1 - 680R	0R1 - 910R
	Metal Oxide	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				
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	P ± 1.0	d ±0.05	Weight Nom.
SQM2	20	11.5	7.5	5	0.7	4.3
SQM3	25	12.5	8.5	5	0.7	5.6
SQM5	25	12.5	9	5	0.8	6.3
SQM7	38	12.5	9	5	0.8	10.7
SQM10	50	12.5	9	5	0.8	13.4



Leads centered on SQM2, SQM3, SQM5
Leads offset as shown on SQM7, SQM10

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.

Welwyn
A subsidiary of
TT electronics plc

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

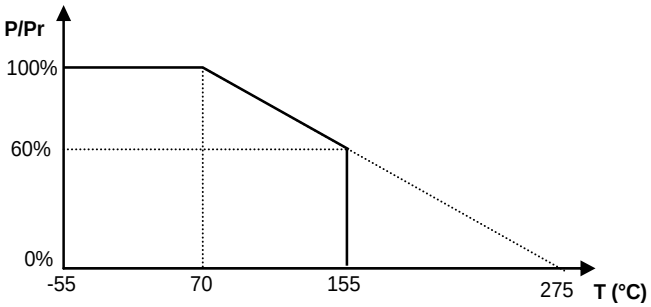
Marking: Type reference, resistance value and tolerance are legend marked onto the upper surface.
Flammability: The resistor will not burn under any condition of applied temperature or overload.
Solvent resistance: The body protection and marking are resistant to all normal industrial solvents suitable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

* Wirewound: the lower of 5x rated power, or 2.5x LEV for 5s Metal Oxide: the lower of 6.25x rated power, or 2.5x LEV for 5s

Derating Curve



Ordering Procedure

Example: SQM3 at 1.2 kilohms and 5% tolerance bulk packed in a box of 3000 pieces –

S Q M 3 – 1 K 2 J B 3

Type

Value (use IEC62 code)

Tolerance (use IEC62 code)

J	5%

Packing

B3	Bulk	SQM2, 3	3000 / box	Standard
B2		SQM5	2000 / box	
B1		SQM7, 10	1000 / box	